NCRB-NCRF-NCIGA
north carolina
RATE BUREAU
REINSURANCE FACILITY
INSURANCE GUARANTY ASSOCIATION

December 14, 2020

Honorable Mike Causey
Commissioner of Insurance
NC Department of Insurance
Property & Casualty
Albemarle Building
325 N. Salisbury Street
Raleigh NC 27603-5926

Re: Revision of Dwelling Insurance Rates

Dear Commissioner Causey,

Enclosed herewith for filing on behalf of all member companies of the North Carolina Rate Bureau are revised premium rates for dwelling insurance subject to the jurisdiction of the Rate Bureau.

The enclosed memoranda and exhibits set forth and explain the calculations for needed rate level changes that have been capped by territory to produce an overall statewide average rate level change of +18.7%. The filing shows the filed rate levels varying by territory, a new rating variable for age of construction, the filed windstorm and hail exclusion credits, and the wind only rate levels.

The foregoing changes were calculated based on rates currently in force and reflect consideration duly given to data for the experience period set forth herein. Ratios in the filing relating to expense experience were developed from special calls issued by the Rate Bureau. In preparing this filing, due consideration has been given to the factors specified in G.S. 58-36-10(2).

Information and statistical data required pursuant to G.S. 58-36-15 and 11 NCAC 10.1105 are shown and referenced in Section E. Additionally, the pre-filed testimony of (a) Matthew Berry

- Chairman, Property Rating Subcommittee; (b) Paul Ericksen - ISO; (c) Paul Anderson - Milliman USA; (d) Minchong Mao, Aon; (e) Stephen Fiete, Aon; (f) Dr. James Vander Weide – Financial Strategy Associates; and (g) Dr. George Zanjani – University of Alabama, are submitted herewith.

The revised rates are to become effective in accordance with the following Rule of Application:

> These changes are applicable to all new and renewal policies becoming effective on or after September 1, 2021.

Your approval of this filing is respectfully requested.

Sincerely,

Joanna Biliouris
Chief Operating Officer

JB:ko
Enclosures

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

SECTION A - SUMMARY OF REVISION

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

STATEWIDE RATE LEVEL CHANGES

Coverage	Latest-Year Earned Premium [(a)]	Indicated Change	Filed Change [(b)]
Fire	$71,555,474	+0.5%	0.0%
Extended Coverage	$229,061,439	+58.1%	+24.6%
Combined	$300,616,913	+44.4%	+18.7%

[(a)] Year-ended 12/31/2018 Aggregate Calculated Earned Premiums at Current Level. These values also appear on page A-3.

[(b)] The statewide filed changes are the result of weighting the territory filed changes shown on page A-3.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

INDICATED AND FILED RATE LEVEL CHANGES BY TERRITORY

	Latest-Year Earned Premium		Indicated Rate Level Change				Filed Rate Level Change[a]			
			Fire		Extended Coverage		Fire[b]		Extended Coverage[c]	
Territory	Fire	Extended Coverage	Buildings	Contents	Buildings	Contents	Buildings	Contents	Buildings	Contents
110	2,370,871	29,727,831	+0.5%	-3.5%	+84.1%	+57.0%	0.0%	0.0%	+25.0%	+25.0%
120	2,457,388	36,272,371	+5.4%	+1.2%	+71.4%	+46.1%	0.0%	0.0%	+25.0%	+25.0%
130	900,983	4,372,443	-6.3%	-10.0%	+61.0%	+37.3%	0.0%	0.0%	+25.0%	+25.0%
140	4,374,115	31,131,544	-2.3%	-6.2%	+82.8%	+55.9%	0.0%	0.0%	+25.0%	+25.0%
150	2,765,196	13,945,904	+13.3%	+8.8%	+20.7%	+2.9%	0.0%	0.0%	+20.7%	+2.9%
160	2,975,008	15,042,506	+1.8%	-2.2%	+24.3%	+6.0%	0.0%	0.0%	+24.3%	+6.0%
170	430,955	726,326	+3.1%	-1.0%	+40.0%	+19.4%	0.0%	0.0%	+25.0%	+19.4%
180	3,541,000	8,116,919	+1.4%	-2.6%	+47.0%	+25.4%	0.0%	0.0%	+25.0%	+25.0%
190	1,326,659	2,820,349	+9.1%	+4.8%	+92.1%	+63.8%	0.0%	0.0%	+25.0%	+25.0%
200	1,072,413	1,758,350	+0.1%	-3.9%	+94.1%	+65.5%	0.0%	0.0%	+25.0%	+25.0%
210	919,298	1,903,814	+9.8%	+5.5%	+55.6%	+32.7%	0.0%	0.0%	+25.0%	+25.0%
220	5,932,504	11,362,531	-6.7%	-10.4%	+50.6%	+28.4%	0.0%	0.0%	+25.0%	+25.0%
230	2,270,329	3,613,834	+7.9%	+3.6%	+67.5%	+42.9%	0.0%	0.0%	+25.0%	+25.0%
240	2,970,519	5,210,675	+11.5%	+7.1%	+64.5%	+40.3%	0.0%	0.0%	+25.0%	+25.0%
250	2,349,157	5,210,957	+2.8%	-1.3%	+31.3%	+11.9%	0.0%	0.0%	+25.0%	+11.9%
260	1,590,192	2,158,384	+2.8%	-1.3%	+31.3%	+11.9%	0.0%	0.0%	+25.0%	+11.9%
270	4,696,378	10,707,901	-7.0%	-10.7%	+48.2%	+26.3%	0.0%	0.0%	+25.0%	+25.0%
280	833,562	1,795,648	+0.7%	-3.3%	+39.2%	+18.7%	0.0%	0.0%	+25.0%	+18.7%
290	1,243,323	2,752,769	-5.0%	-8.8%	+28.7%	+9.7%	0.0%	0.0%	+25.0%	+9.7%
300	1,110,927	1,336,171	+12.0%	+7.6%	+65.5%	+41.1%	0.0%	0.0%	+25.0%	+25.0%
310	6,573,234	9,684,507	-3.9%	-7.7%	+51.7%	+29.3%	0.0%	0.0%	+25.0%	+25.0%
320	3,064,099	5,127,602	+8.0%	+3.7%	+43.2%	+22.1%	0.0%	0.0%	+25.0%	+22.1%
330	230,299	291,852	+7.6%	+3.3%	+49.4%	+27.3%	0.0%	0.0%	+25.0%	+25.0%
340	6,152,766	10,628,472	-5.5%	-9.3%	+41.2%	+20.4%	0.0%	0.0%	+25.0%	+20.4%
350	2,679,841	3,660,914	+6.9%	+2.7%	+46.1%	+24.6%	0.0%	0.0%	+25.0%	+24.6%
360	4,523,349	6,977,800	-0.5%	-4.5%	+43.2%	+22.1%	0.0%	0.0%	+25.0%	+22.1%
370	314,447	396,857	+3.6%	-0.5%	+50.5%	+28.3%	0.0%	0.0%	+25.0%	+25.0%
380	917,581	1,154,929	+2.1%	-1.9%	+58.3%	+35.0%	0.0%	0.0%	+25.0%	+25.0%
390	969,081	1,171,279	+1.3%	-2.7%	+55.7%	+32.7%	0.0%	0.0%	+25.0%	+25.0%
Statewide	71,555,474	229,061,439	+0.8%	-3.2%	+58.8%	+35.4%	0.0%	0.0%	+24.7%	+21.4%

[a] The statewide filed change is the result of weighting the territory filed changes. The territory weights are the year-ending 12/31/2018 Aggregate Calculated Earned Premiums at Current Level.

[b] For Fire, no rate level changes are being filed.

[c] For Extended Coverage, the territory rate level changes were capped at +25.0%.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CURRENT AND FILED BASE RATES
FIRE

	(1)		(2)		(3)		(4) =(1) x (3) / (2)	
	Current Manual Base Rate [a]		Off-Balance Factor [b]		Filed Rate Level Change [c]		Filed Base Rate	
Territory	Buildings	Contents	Buildings	Contents	Buildings	Contents	Buildings	Contents
110	$17	$4	0.990	1.000	1.000	1.000	$17	$4
120	$17	$4	0.985	1.000	1.000	1.000	$17	$4
130	$31	$9	0.984	1.000	1.000	1.000	$32	$9
140	$28	$9	0.982	1.000	1.000	1.000	$29	$9
150	$29	$9	0.989	1.000	1.000	1.000	$29	$9
160	$32	$11	0.982	1.000	1.000	1.000	$33	$11
170	$44	$13	0.995	1.000	1.000	1.000	$44	$13
180	$45	$14	0.991	1.000	1.000	1.000	$45	$14
190	$46	$14	0.995	1.000	1.000	1.000	$46	$14
200	$62	$16	0.996	1.000	1.000	1.000	$62	$16
210	$41	$13	0.995	1.000	1.000	1.000	$41	$13
220	$41	$12	0.989	1.000	1.000	1.000	$41	$12
230	$64	$17	0.994	1.000	1.000	1.000	$64	$17
240	$42	$13	0.992	1.000	1.000	1.000	$42	$13
250	$38	$12	0.971	1.000	1.000	1.000	$39	$12
260	$47	$13	0.996	1.000	1.000	1.000	$47	$13
270	$30	$10	0.979	1.000	1.000	1.000	$31	$10
280	$28	$9	0.989	1.000	1.000	1.000	$28	$9
290	$35	$11	0.979	1.000	1.000	1.000	$36	$11
300	$47	$15	0.997	1.000	1.000	1.000	$47	$15
310	$35	$11	0.995	1.000	1.000	1.000	$35	$11
320	$34	$11	0.994	1.000	1.000	1.000	$34	$11
330	$36	$12	0.997	1.000	1.000	1.000	$36	$12
340	$31	$9	0.990	1.000	1.000	1.000	$31	$9
350	$35	$11	0.993	1.000	1.000	1.000	$35	$11
360	$29	$9	0.992	1.000	1.000	1.000	$29	$9
370	$32	$10	0.993	1.000	1.000	1.000	$32	$10
380	$29	$9	0.988	1.000	1.000	1.000	$29	$9
390	$30	$10	0.992	1.000	1.000	1.000	$30	$10
Statewide	$34.53	$10.22	0.989	1.000	1.000	1.000	$34.91	$10.22

[a] The current Base Class is Protection Class 5 with Frame construction; $15,000 Coverage A, $6,000 Coverage C.
[b] The off-balance factors are applied to implement the proposed Age of Construction relativities on a revenue-neutral basis.
[c] For Fire, no rate level changes are being filed.

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CURRENT AND FILED BASE RATES
EXTENDED COVERAGE

	(1)		(2)		(3)		(4) =(1) x (3) / (2)	
	Current Manual Base Rate [a]		Off-Balance Factor [b]		Filed Rate Level Change [c]		Filed Base Rate	
Territory	Buildings	Contents	Buildings	Contents	Buildings	Contents	Buildings	Contents
110	$172	$24	0.990	1.000	1.250	1.250	$217	$30
120	$192	$28	0.985	1.000	1.250	1.250	$244	$35
130	$138	$21	0.984	1.000	1.250	1.250	$175	$26
140	$149	$21	0.982	1.000	1.250	1.250	$190	$26
150	$126	$11	0.989	1.000	1.207	1.029	$154	$11
160	$130	$14	0.983	1.000	1.243	1.060	$164	$15
170	$62	$5	0.995	1.000	1.250	1.194	$78	$6
180	$68	$6	0.991	1.000	1.250	1.250	$86	$8
190	$70	$8	0.995	1.000	1.250	1.250	$88	$10
200	$88	$11	0.995	1.000	1.250	1.250	$111	$14
210	$57	$4	0.995	1.000	1.250	1.250	$72	$5
220	$50	$3	0.988	1.000	1.250	1.250	$63	$4
230	$80	$9	0.994	1.000	1.250	1.250	$101	$11
240	$51	$3	0.992	1.000	1.250	1.250	$64	$4
250	$52	$3	0.969	1.000	1.250	1.119	$67	$3
260	$50	$2	0.996	1.000	1.250	1.119	$63	$2
270	$37	$2	0.979	1.000	1.250	1.250	$47	$3
280	$37	$2	0.989	1.000	1.250	1.187	$47	$2
290	$46	$2	0.978	1.000	1.250	1.097	$59	$2
300	$43	$4	0.997	1.000	1.250	1.250	$54	$5
310	$31	$1	0.995	1.000	1.250	1.250	$39	$1
320	$34	$1	0.993	1.000	1.250	1.221	$43	$1
330	$37	$1	0.998	1.000	1.250	1.250	$46	$1
340	$29	$1	0.990	1.000	1.250	1.204	$37	$1
350	$30	$1	0.993	1.000	1.250	1.246	$38	$1
360	$29	$2	0.992	1.000	1.250	1.221	$37	$2
370	$31	$2	0.992	1.000	1.250	1.250	$39	$3
380	$27	$1	0.989	1.000	1.250	1.250	$34	$1
390	$27	$1	0.992	1.000	1.250	1.250	$34	$1
Statewide	$69.25	$8.65	0.987	1.000	1.247	1.214	$87.49	$10.50

[a] The current Base Class is Form DP-001; $15,000 Coverage A, $6,000 Coverage C.
[b] The off-balance factors are applied to implement the proposed Age of Construction relativities on a revenue-neutral basis.
[c] For Extended Coverage, the territory rate level changes were capped at +25.0%.

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DWELLING PROPERTY INSURANCE

DETERMINATION OF RATES TO BE CHARGED INDIVIDUAL INSUREDS

The filed base rates by territory are shown on pages A-4 and A-5. These are the filed manual rates for the classification carrying a unity differential. The revised rates for the remaining classifications are determined by applying the established classification rate differentials to the base rates by territory.

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DWELLING PROPERTY INSURANCE

SECTION B - MATERIAL TO BE IMPLEMENTED

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DWELLING PROPERTY INSURANCE

REVISED RULES

1. The base rates underlying the Rule 301 Key Premium tables have been revised to reflect the filed rate level changes and the introduction of age of construction factors. See page B-3 for the filed base rates.

2. The Windstorm or Hail Exclusion Credits have been revised to reflect the filed rates. See page B-4 for the Windstorm or Hail Exclusion Credits.

3. The Windstorm Loss Mitigation Credits have been revised to reflect the filed rates. See pages B-5-6 for the Windstorm Loss Mitigation Credits.

4. Age of Construction Factors have been introduced for Fire - Coverage A and Extended Coverage - Coverage A. See page B-7 for the Age of Construction Factors.

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DWELLING PROPERTY INSURANCE

FILED TERRITORY BASE RATES

	Filed Base Rate			
	Fire [a]		Extended Coverage [b]	
Territory	Buildings	Contents	Buildings	Contents
110	$17	$4	$217	$30
120	$17	$4	$244	$35
130	$32	$9	$175	$26
140	$29	$9	$190	$26
150	$29	$9	$154	$11
160	$33	$11	$164	$15
170	$44	$13	$78	$6
180	$45	$14	$86	$8
190	$46	$14	$88	$10
200	$62	$16	$111	$14
210	$41	$13	$72	$5
220	$41	$12	$63	$4
230	$64	$17	$101	$11
240	$42	$13	$64	$4
250	$39	$12	$67	$3
260	$47	$13	$63	$2
270	$31	$10	$47	$3
280	$28	$9	$47	$2
290	$36	$11	$59	$2
300	$47	$15	$54	$5
310	$35	$11	$39	$1
320	$34	$11	$43	$1
330	$36	$12	$46	$1
340	$31	$9	$37	$1
350	$35	$11	$38	$1
360	$29	$9	$37	$2
370	$32	$10	$39	$3
380	$29	$9	$34	$1
390	$30	$10	$34	$1

[a] The Base Class is Protection Class 5 with Frame construction; $15,000 Coverage A, $6,000 Coverage C.

[b] The Base Class is Form DP-001; $15,000 Coverage A, $6,000 Coverage C.

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DWELLING PROPERTY INSURANCE

DWELLING POLICY PROGRAM MANUAL CHANGES
WINDSTORM OR HAIL EXCLUSION CREDITS

RULE A3.
WINDSTORM OR HAIL EXCLUSION – TERRITORIES 110, 120, 130, 140, 150 AND 160 ONLY

Territory	Const.*	Building Credit	Contents Credit
110	M	$ 172	$ 21
	F	181	22
	MH	226	28
120	M	201	28
	F	212	29
	MH	265	36
130	M	129	22
	F	136	23
	MH	170	29
140	M	145	19
	F	153	20
	MH	191	25
150	M	117	8
	F	123	8
	MH	154	10
160	M	124	10
	F	130	11
	MH	163	14

* M = Masonry, F = Frame. MH = Mobile Homes. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table A3.B.2.(R) Windstorm Or Hail Exclusion – Territories 110, 120, 130, 140, 150 and 160 Only

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DWELLING PROPERTY INSURANCE

DWELLING POLICY PROGRAM MANUAL CHANGES
WINDSTORM LOSS MITIGATION CREDITS

RULE A9.
WINDSTORM MITIGATION PROGRAM

Mitigation Feature	Const.	Territory 110	Territory 120	Territory 130	Territory 140	Territory 150	Territory 160
Total Hip Roof	M	$ 10	$ 10	$ 7	$ 7	$ 6	$ 5
	F	10	10	7	7	6	5
Opening Protection	M	10	10	7	7	6	5
	F	10	10	7	7	6	5
Total Hip Roof and Opening Protection	M	19	21	12	13	11	11
	F	20	22	13	14	12	12
IBHS Designation prior to March 31, 2019:							
Hurricane Fortified for Safer Living®	M	30	36	14	25	15	20
	F	32	38	15	26	16	21
Hurricane Fortified for Existing Homes® Bronze Option 1	M	7	8	4	4	5	4
	F	7	8	4	4	5	4
Hurricane Fortified for Existing Homes® Bronze Option 2	M	11	12	7	10	6	7
	F	12	13	7	10	6	7
Hurricane Fortified for Existing Homes® Silver Option 1	M	19	23	9	16	7	13
	F	20	24	9	17	7	14
Hurricane Fortified for Existing Homes® Silver Option 2	M	23	27	10	18	10	15
	F	24	28	11	19	10	16
Hurricane Fortified for Existing Homes® Gold Option 1	M	23	27	12	18	11	15
	F	24	28	13	19	12	16
Hurricane Fortified for Existing Homes® Gold Option 2	M	26	31	14	24	13	19
	F	27	33	15	25	14	20
IBHS Designation on or after March 31, 2019:							
FORTIFIED for Safer Living®	M	30	36	14	25	15	20
	F	32	38	15	26	16	21
FORTIFIED Roof – Hurricane – Existing Roof	M	7	8	4	4	5	4
	F	7	8	4	4	5	4
FORTIFIED Roof – Hurricane – New Roof	M	11	12	7	10	6	7
	F	12	13	7	10	6	7
FORTIFIED Home – Hurricane – Silver – Existing Roof	M	19	23	9	16	7	13
	F	20	24	9	17	7	14
FORTIFIED Home – Hurricane – Silver – New Roof	M	23	27	10	18	10	15
	F	24	28	11	19	10	16
FORTIFIED Home – Hurricane – Gold – Existing Roof	M	23	27	12	18	11	15
	F	24	28	13	19	12	16
FORTIFIED Home – Hurricane – Gold – New Roof	M	26	31	14	24	13	19
	F	27	33	15	25	14	20

Table A9.E.#1(R) – Windstorm Loss Mitigation Credit – Coverage A – Dwelling

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DWELLING PROPERTY INSURANCE

DWELLING POLICY PROGRAM MANUAL CHANGES
WINDSTORM LOSS MITIGATION CREDITS

RULE A9.
WINDSTORM MITIGATION PROGRAM

Mitigation Feature	Const.	Territory 110	Territory 120	Territory 130	Territory 140	Territory 150	Territory 160
Total Hip Roof	M	$ 1	$ 3	$ 2	$ 2	$ 1	$ 1
	F	1	3	2	2	1	1
Opening Protection	M	1	3	2	2	1	1
	F	1	3	2	2	1	1
Total Hip Roof and Opening Protection	M	1	4	2	2	1	1
	F	1	4	2	2	1	1
IBHS Designation prior to March 31, 2019:							
Hurricane Fortified for Safer Living®	M	5	7	4	5	2	3
	F	5	7	4	5	2	3
Hurricane Fortified for Existing Homes® Bronze Option 1	M	1	3	2	2	1	1
	F	1	3	2	2	1	1
Hurricane Fortified for Existing Homes® Bronze Option 2	M	1	4	2	2	1	1
	F	1	4	2	2	1	1
Hurricane Fortified for Existing Homes® Silver Option 1	M	2	4	2	3	1	2
	F	2	4	2	3	1	2
Hurricane Fortified for Existing Homes® Silver Option 2	M	2	5	2	3	1	2
	F	2	5	2	3	1	2
Hurricane Fortified for Existing Homes® Gold Option 1	M	3	5	2	3	1	2
	F	3	5	2	3	1	2
Hurricane Fortified for Existing Homes® Gold Option 2	M	3	5	4	3	2	2
	F	3	5	4	3	2	2
IBHS Designation on or after March 31, 2019:							
FORTIFIED for Safer Living®	M	5	7	4	5	2	3
	F	5	7	4	5	2	3
FORTIFIED Roof – Hurricane – Existing Roof	M	1	3	2	2	1	1
	F	1	3	2	2	1	1
FORTIFIED Roof – Hurricane – New Roof	M	1	4	2	2	1	1
	F	1	4	2	2	1	1
FORTIFIED Home – Hurricane – Silver – Existing Roof	M	2	4	2	3	1	2
	F	2	4	2	3	1	2
FORTIFIED Home – Hurricane – Silver – New Roof	M	2	5	2	3	1	2
	F	2	5	2	3	1	2
FORTIFIED Home – Hurricane – Gold – Existing Roof	M	3	5	2	3	1	2
	F	3	5	2	3	1	2
FORTIFIED Home – Hurricane – Gold – New Roof	M	3	5	4	3	2	2
	F	3	5	4	3	2	2

Table A9.E.#2(R) – Windstorm Loss Mitigation Credit – Coverage C – Personal Property

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DWELLING POLICY PROGRAM MANUAL CHANGES
AGE OF CONSTRUCTION FACTORS

RULE Axx.
AGE OF CONSTRUCTION

A. Determine the age of construction based on the calendar year that the dwelling was completed and first occupied. If the year first occupied is different than the year completed, the later year would apply.

B. Multiply the Coverage A Base Premium by the appropriate factor selected from the following table:

Age Of Construction	Fire	E.C., Broad & Special Forms
0 *	.860	.860
1	.869	.869
2	.878	.878
3	.886	.886
4	.895	.895
5	.904	.904
6	.914	.914
7	.923	.923
8	.932	.932
9	.941	.941
10	.951	.951
11	.961	.961
12	.970	.970
13	.980	.980
14	.990	.990
15 +	1.000	1.000
* Age 0 applies to homes built within the last year as well as homes still under construction.		
+ Applies to dwellings built at least 15 years ago.		

Table Axx.B. Age Of Construction Factors

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DWELLING PROPERTY INSURANCE

SECTION C - SUPPORTING MATERIAL

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF INDICATED STATEWIDE RATE LEVEL CHANGE
FIRE

Year	(1) Adjusted Incurred Losses [(a)]	(2) Adjusted Incurred Losses Including LAE [(b)]	(3) Loss Trend Factor [(c)]	(4) Earned House Years	(5) Premium Trend Factor [(d)]
2014	37,795,819	41,499,809	0.961	591,320	1.104
2015	38,673,800	42,463,832	0.970	615,474	1.079
2016	45,997,392	50,505,136	0.980	626,824	1.071
2017	37,629,329	41,317,003	0.990	629,918	1.061
2018	41,544,320	45,615,663	1.000	630,002	1.049

Year	(6) Trended Loss Cost [(2)×(3)] / [(4)×(5)]	(7) Average Rating Factor [(e)]	(8) Trended Base Class Loss Cost (6) / (7)	(9) Accident Year Weights
2014	61.07	4.199	14.54	0.10
2015	62.04	4.277	14.51	0.15
2016	73.73	4.284	17.21	0.20
2017	61.20	4.302	14.23	0.25
2018	69.02	4.389	15.73	0.30

(10)	Weighted Trended Base Class Loss Cost [(f)]	15.35
(11)	Credibility (3,093,538 House Years) [(g)]	1.00
(12)	Fixed Expense per Policy [(h)]	3.88
(13)	Base Class Loss Cost with Fixed Expense, (10) + (12)	19.23
(14)	Expected Loss and Fixed Expense Ratio [(i)]	0.760
(15)	Base Class Rate Excluding Comp. for Assess. Risk & Dev., (13) / (14)	25.30
(16)	Compensation for Assessment Risk per Policy [(j)]	0.88
(17)	Base Class Rate Excluding Deviations, (15) + (16)	26.18
(18)	Selected Deviation [(k)]	0.0000
(19)	Deviation Amount per Policy, [(17) / (1.0 - (18))] - (17)	0.00
(20)	Required Base Class Rate per Policy, (17) + (19)	26.18
(21)	Current Average Base Class Rate	26.06
(22)	Indicated Rate Level Change, (20) / (21) - 1	+0.5%
(23)	Filed Rate Level Change [(l)]	0.0%

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF INDICATED STATEWIDE RATE LEVEL CHANGE
FIRE

(a) Incurred losses have been adjusted by the following loss development factors:

Accident Year Ending	Loss Development Factor
12/31/2014	1.000
12/31/2015	1.000
12/31/2016	0.997
12/31/2017	0.994
12/31/2018	0.965

(b) The trended loss adjustment expenses have been calculated to be 9.8% of the incurred losses for Fire. This factor is developed on pages D-24 and D-28.

(c) The development of the Loss Trend Factors is shown on page D-16.

(d) The development of the Premium Trend Factors is shown on page D-18.

(e) The calculation of the Average Rating Factors is shown on pages D-32-41.

(f) The Weighted Trended Base Class Loss Cost is the sum of the products, by year, of the Trended Base Class Loss Costs and the accident year weights.

(g) The standard for full credibility is 500,000 house years for Fire. This review is fully credible. The statewide credibility procedure is based on the "frequency with severity modification" model discussed in "Credibility of the Pure Premium" by Mayerson, Bowers and Jones. The full credibility standard is based on a normal distribution with a 90% probability of meeting the test and a 10% maximum departure from the expected value, translated to house year standards. Partial credibility (Z_p) is calculated as follows:

$Z_p = \sqrt{\frac{Five\text{-}Year\ House\ Years}{Full\ Credibilty\ Standard}}$ (truncated to the nearest tenth)

(h) The development of the Fixed Expense per Policy is shown on page D-28.

(i) The development of the Expected Loss and Fixed Expense Ratio is shown on page D-22.

(j) The Compensation for Assessment Risk loading is 2.9% of premium and is based on an analysis done by P. Anderson. The provision per policy is calculated as (0.029 × Current Average Base Class Rate)/(1-Provisions for Commission & Taxes). The commission and tax provisions are those shown on page D-22 for Fire.

(k) A 0% deviation loading was selected by the North Carolina Rate Bureau.

(l) The filed rate level change is the weighted average of the filed territory rate level changes weighted by latest-year earned premium at present rates. For Fire, no rate level changes are being filed.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF INDICATED STATEWIDE RATE LEVEL CHANGE
EXTENDED COVERAGE

Year	(1) Non-Modeled Adjusted Incurred Losses [a] *	(2) Non-Modeled Adjusted Excess Losses [b]	(3) Losses Including LAE Adjusted for Excess [(1)-(2)] × LAE × Excess Factor [c] [d]	(4) Loss Trend Factor [e]	(5) Earned House Years
2014	43,989,921	0	50,830,530	1.741	594,704
2015	44,270,731	0	51,155,007	1.658	621,671
2016	46,909,533	0	54,204,153	1.579	632,337
2017	54,838,811	0	63,366,465	1.504	632,336
2018	63,284,695	0	73,125,718	1.432	629,169

Year	(6) Premium Trend Factor [f]	(7) Trended Loss Cost [(3)×(4)] / [(5)×(6)]	(8) Average Rating Factor [g]	(9) Trended Base Class Loss Cost (7) / (8)	(10) Accident Year Weights
2014	1.135	131.08	7.224	18.14	0.20
2015	1.108	123.11	7.400	16.64	0.20
2016	1.094	123.71	7.484	16.53	0.20
2017	1.081	139.39	7.551	18.46	0.20
2018	1.066	156.13	7.586	20.58	0.20

(11)	Weighted Trended Non-Hurricane Base Class Loss Cost [h]	18.07
(12)	Credibility (3,110,217 House Years) [i]	1.00
(13)	Trended Modeled Hurricane Base Class Loss Cost [j]	16.16
(14)	Total Base Class Loss Cost (11) + (13)	34.23
(15)	Fixed Expense per Policy [k]	5.52
(16)	Base Class Loss Cost with Fixed Expense, (14) + (15)	39.75
(17)	Expected Loss and Fixed Expense Ratio [l]	0.780
(18)	Base Rate Excluding Comp. for Assess. Risk, Net Reins. & Dev., (16) / (17)	50.96
(19)	Compensation for Assessment Risk per Policy [m]	1.59
(20)	Net Cost of Reinsurance per Policy [n]	24.21
(21)	Base Class Rate Excluding Deviations, (18) + (19) + (20)	76.76
(22)	Selected Deviation [o]	0.000
(23)	Deviation Amount per Policy, [(21) / (1.0 - (22))] - (21)	0.00
(24)	Required Base Class Rate per Policy, (21) + (23)	76.76
(25)	Current Average Base Class Rate	48.55
(26)	Indicated Rate Level Change, (24) / (25) - 1	+58.1%
(27)	Filed Rate Level Change [p]	+24.6%

* Actual Hurricane losses of $3,218,320 were removed from 2014, $3,676,823 were removed from 2015, $64,494,644 were removed from 2016, $264,669 were removed from 2017, and $512,253,927 were removed from 2018.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF INDICATED STATEWIDE RATE LEVEL CHANGE
EXTENDED COVERAGE

(a) Incurred losses excluding hurricanes have been adjusted by the following loss development factors:

Accident Year Ending	Loss Development Factor
12/31/2014	1.000
12/31/2015	1.001
12/31/2016	1.001
12/31/2017	1.005
12/31/2018	1.029

The excluded hurricane losses can be found on pages D-54-58.

(b) Excess losses are calculated on pages D-47-48.

(c) The trended loss adjustment expenses have been calculated to be 8.6% of the non-hurricane incurred losses for Extended Coverage. This factor is developed on pages D-27 and D-28.

(d) The excess factor is calculated on page D-47.

(e) The development of the Loss Trend Factors is shown on page D-16.

(f) The development of the Premium Trend Factors is shown on page D-18.

(g) The calculation of the Average Rating Factors is shown on pages D-63-72.

(h) The Weighted Trended Non-Hurricane Base Class Loss Cost is the sum of the products, by year, of the Trended Base Class Loss Costs and the accident year weights.

(i) The standard for full credibility is 330,000 house years for Extended Coverage. This review is fully credible. The statewide credibility procedure is based on the "frequency with severity modification" model discussed in "Credibility of the Pure Premium" by Mayerson, Bowers and Jones. The full credibility standard is based on a normal distribution with a 90% probability of meeting the test and a 10% maximum departure from the expected value, translated to house year standards. Partial credibility (Z_p) is calculated as follows:

$Z_p = \sqrt{\frac{Five\text{–}Year\ House\ Years}{Full\ Credibilty\ Standard}}$ (truncated to the nearest tenth)

(j) The modeled hurricane base-class loss cost is calculated by dividing modeled losses of $82,224,963 by the product of the trended Average Rating Factor and Earned House Years for the latest year. Using the trended latest-year exposures, Aon developed modeled losses by blending the results of the AIR and RMS hurricane models. The resulting losses were adjusted by Aon to include a loading for LAE of 6.0%. The development of the Modeled Hurricane Base Class Loss Cost is shown on page D-79.

(k) The development of the Fixed Expense per Policy is shown on page D-28.

(l) The development of the Expected Loss and Fixed Expense Ratio is shown on page D-25.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF INDICATED STATEWIDE RATE LEVEL CHANGE
EXTENDED COVERAGE

(m) The Compensation for Assessment Risk loading is 2.9% of premium and is based on an analysis done by P. Anderson. The provision per policy is calculated as (0.029 × Current Average Base Class Rate)/(1-Provisions for Commission & Taxes). The commission and tax provisions are those shown on page D-25 for Extended Coverage.

(n) The derivation of the statewide Net Cost of Reinsurance per Policy provision is provided on page D-80. This loading is based on an analysis done by Aon.

(o) A 0% deviation loading was selected by the North Carolina Rate Bureau.

(p) The filed rate level change is the weighted average of the filed territory rate level changes weighted by latest-year earned premium at present rates. For Extended Coverage, the filed territory rate level changes have been capped at +25.0%.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF INDICATED CLASS RATE LEVEL CHANGES
FIRE

Class	(1) Trended Adjusted Incurred Losses	(2) Five-Year Earned House Years	(3) Trended Average Rating Factor	(4) Base Class Loss Cost (1) / [(2) × (3)]	(5) Credibility	(6) Credibility-Weighted Loss Cost
Buildings	202,414,685	2,014,674	4.952	20.29	1.00	20.29
Contents	14,672,059	1,078,864	2.388	5.69	1.00	5.69
Total	217,086,744	3,093,538	4.601	15.25		15.25

Class	(7) Indicated Base Class Loss Cost [a]	(8) Current Latest-Year Average Base Class Rate	(9) Expected Loss and Fixed Expense Ratio	(10) Indicated Base Class Rate [b]	(11) Compensation for Assessment Risk per Policy	(12) Base Class Rate Excluding Deviations (10) + (11)
Buildings	20.42	34.70	0.760	33.72	1.16	34.88
Contents	5.73	10.31	0.760	9.57	0.34	9.91
Total	15.35	25.88	0.760	25.31	0.88	26.19

Class	(13) Selected Deviation	(14) Deviation Amount per Policy (12) / [1.0 - (13)] - (12)	(15) Required Base Class Rate (12) + (14)	(16) Current Five-Year Average Base Class Rate	(17) Indicated Base Class Rate Change (15) / (16) - 1	(18) Indicated Rate Change Balanced to Statewide Level [c]
Buildings	0.000	0.00	34.88	34.53	+1.0%	+0.8%
Contents	0.000	0.00	9.91	10.22	-3.0%	-3.2%
Total	0.000	0.00		26.06	+0.7%	+0.5%

[a] Column (7) = (6) / Total (6) × Statewide Indication page row (10)
[b] Column (10) = [(7) + (8) × Trended fixed expense ratio] / (9). Trended fixed expense ratio is shown in on page D-28.
[c] Column (18) = [1 + (17)] / [1 + (17) total] × (1 + Statewide indicated rate level change) - 1

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF INDICATED CLASS RATE LEVEL CHANGES
EXTENDED COVERAGE

Class	(1) Trended Adjusted Incurred Non-Modeled Losses	(2) Five-Year Earned House Years	(3) Trended Average Rating Factor	(4) Base Class Loss Cost = (1) / [(2) × (3)]	(5) Credibility	(6) Credibility-Weighted Loss Cost
Buildings	420,068,453	2,047,796	8.425	24.35	1.00	24.35
Contents	11,180,473	1,062,421	4.156	2.53	1.00	2.53
Total	431,248,926	3,110,217	8.166	16.98		16.98

Class	(7) Modeled Base Class Loss Cost	(8) Total Base Class Loss Cost	(9) Indicated Base Class Loss Cost [(a)]	(10) Current Latest-Year Average Base Class Rate	(11) Expected Loss and Fixed Expense Ratio
Buildings	23.47	47.82	49.08	69.37	0.780
Contents	2.46	4.99	5.12	8.51	0.780
Total	16.16	33.35	34.23	47.99	0.780

Class	(12) Indicated Net Base Class Rate [(b)]	(13) Compensation for Assessment Risk per Policy	(14) Net Cost of Reinsurance per Policy	(15) Base Class Rate Excluding Deviations (12)+(13)+(14)	(16) Selected Deviation
Buildings	73.15	2.27	35.16	110.58	0.000
Contents	7.82	0.28	3.67	11.77	0.000
Total	50.96	1.59	24.21	76.76	0.000

Class	(17) Deviation Amount per Policy (15) / [1.0 - (16)] - (15)	(18) Required Base Class Rate (15) + (17)	(19) Current Five-Year Average Base Class Rate	(20) Indicated Base Class Rate Change (18) / (19) - 1	(21) Indicated Rate Change Balanced to Statewide Level [(c)]
Buildings	0.00	110.58	69.25	+59.7%	+58.8%
Contents	0.00	11.77	8.65	+36.1%	+35.4%
Total	0.00		48.55	+59.0%	+58.1%

[(a)] Column (9) = (8) / Total (8) × Statewide Indication page row (14).
[(b)] Column (12) = [(9) + (10) × Trended fixed expense ratio] / (11). Trended fixed expense ratio is shown on page D-28.
[(c)] Column (21) = [1 + (20)] / [1 + (20) total] × (1 + Statewide indicated rate level change) - 1

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF INDICATED TERRITORY RATE LEVEL CHANGES
FIRE

Territory	(1) Latest-Year Aggregate Calculated Earned Premium at Current Level	(2) Current Average Base Class Rate	(3) Five-Year Experience Base Class Loss Cost	(4) Five-Year Earned House Years	(5) Credibility	(6) Credibility-Weighted Base Class Loss Cost [a]	(7) Indicated Relativity (6) / SW (6)	(8) Indicated Base Class Loss Cost (7) × 15.35 [b]	(9) Trended Fixed Expense per Policy [c]	(10) Trended Loss and Fixed Expense (8) + (9)
110	2,370,871	10.80	5.96	112,168	0.40	6.18	0.410	6.29	1.66	7.95
120	2,457,388	10.62	5.76	152,694	0.50	5.99	0.397	6.09	2.12	8.21
130	900,983	22.42	5.87	39,945	0.20	11.67	0.773	11.87	3.46	15.33
140	4,374,115	20.52	9.77	249,440	0.70	10.44	0.692	10.62	4.04	14.66
150	2,765,196	21.73	14.79	148,446	0.50	13.75	0.911	13.98	4.13	18.11
160	2,975,008	24.41	13.80	139,472	0.50	14.04	0.930	14.28	3.93	18.21
170	430,955	32.23	24.06	16,711	0.10	19.38	1.284	19.71	4.65	24.36
180	3,541,000	33.80	20.02	141,196	0.50	19.90	1.319	20.25	4.86	25.11
190	1,326,659	34.60	25.43	58,580	0.30	21.80	1.445	22.18	5.54	27.72
200	1,072,413	42.84	28.28	37,716	0.20	25.71	1.704	26.16	5.25	31.41
210	919,298	31.91	24.06	43,982	0.20	19.75	1.309	20.09	5.64	25.73
220	5,932,504	31.19	17.79	157,461	0.50	18.02	1.194	18.33	2.91	21.24
230	2,270,329	45.79	32.22	98,394	0.40	28.97	1.920	29.47	6.80	36.27
240	2,970,519	32.49	23.23	131,449	0.50	21.12	1.400	21.49	5.13	26.62
250	2,349,157	29.25	19.80	80,653	0.40	18.19	1.205	18.50	3.54	22.04
260	1,590,192	36.82	24.61	58,379	0.30	22.47	1.489	22.86	4.88	27.74
270	4,696,378	23.08	11.68	166,021	0.50	12.59	0.834	12.80	2.86	15.66
280	833,562	21.19	11.62	35,827	0.20	12.24	0.811	12.45	3.18	15.63
290	1,243,323	26.77	12.29	44,996	0.20	14.99	0.993	15.24	3.35	18.59
300	1,110,927	36.00	29.04	52,533	0.30	23.46	1.555	23.87	5.76	29.63
310	6,573,234	28.09	14.97	281,117	0.70	15.41	1.021	15.67	4.05	19.72
320	3,064,099	28.00	19.17	132,909	0.50	17.78	1.178	18.08	4.12	22.20
330	230,299	28.17	20.96	12,387	0.10	16.93	1.122	17.22	5.03	22.25
340	6,152,766	24.13	12.84	247,244	0.70	13.22	0.876	13.45	3.21	16.66
350	2,679,841	29.07	19.77	120,706	0.40	18.11	1.200	18.42	4.39	22.81
360	4,523,349	22.26	11.64	235,447	0.60	12.19	0.808	12.40	3.81	16.21
370	314,447	23.67	14.58	15,495	0.10	13.92	0.922	14.15	3.83	17.98
380	917,581	22.05	13.09	41,330	0.20	12.94	0.858	13.17	3.32	16.49
390	969,081	22.72	13.83	40,840	0.20	13.40	0.888	13.63	3.22	16.85
Statewide	71,555,474	26.06	15.25	3,093,538	1.00	15.09	1.000	15.35	3.88	19.23

[a] Column (6) = (5) × (3) + [1.00 - (5)] × Statewide (3) × (2) / Statewide (2)
[b] Column (8) = (7) × Indicated Statewide Base Class Loss Cost
[c] The derivation of the territory Trended Fixed Expense per Policy is on page D-29.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF INDICATED TERRITORY RATE LEVEL CHANGES
FIRE

Territory	(11) Expected Loss and Fixed Expense Ratio	(12) Indicated Net Base Class Rate (10) / (11)	(13) Compensation for Assessment Risk Cost per Policy	(14) Base Class Rate Excluding Deviations (12) + (13)	(15) Selected Deviation	(16) Deviation Amount per Policy (14) / (1.0 - (15)) - (14)	(17) Indicated Required Base Class Rate (14) + (16)	(18) Indicated Rate Level Change (17) / (2) - 1	(19) Indicated Rate Level Change Balanced to Statewide Indicated Level [d]	(20) Indicated Buildings Rate Level Change [e]	(21) Indicated Contents Rate Level Change [f]
110	0.760	10.46	0.36	10.82	0.000	0.00	10.82	+0.2%	+0.2%	+0.5%	-3.5%
120	0.760	10.80	0.36	11.16	0.000	0.00	11.16	+5.1%	+5.1%	+5.4%	+1.2%
130	0.760	20.17	0.76	20.93	0.000	0.00	20.93	-6.6%	-6.6%	-6.3%	-10.0%
140	0.760	19.29	0.69	19.98	0.000	0.00	19.98	-2.6%	-2.6%	-2.3%	-6.2%
150	0.760	23.83	0.73	24.56	0.000	0.00	24.56	+13.0%	+13.0%	+13.3%	+8.8%
160	0.760	23.96	0.82	24.78	0.000	0.00	24.78	+1.5%	+1.5%	+1.8%	-2.2%
170	0.760	32.05	1.09	33.14	0.000	0.00	33.14	+2.8%	+2.8%	+3.1%	-1.0%
180	0.760	33.04	1.14	34.18	0.000	0.00	34.18	+1.1%	+1.1%	+1.4%	-2.6%
190	0.760	36.47	1.17	37.64	0.000	0.00	37.64	+8.8%	+8.8%	+9.1%	+4.8%
200	0.760	41.33	1.44	42.77	0.000	0.00	42.77	-0.2%	-0.2%	+0.1%	-3.9%
210	0.760	33.86	1.08	34.94	0.000	0.00	34.94	+9.5%	+9.5%	+9.8%	+5.5%
220	0.760	27.95	1.05	29.00	0.000	0.00	29.00	-7.0%	-7.0%	-6.7%	-10.4%
230	0.760	47.72	1.54	49.26	0.000	0.00	49.26	+7.6%	+7.6%	+7.9%	+3.6%
240	0.760	35.03	1.10	36.13	0.000	0.00	36.13	+11.2%	+11.2%	+11.5%	+7.1%
250	0.760	29.00	0.99	29.99	0.000	0.00	29.99	+2.5%	+2.5%	+2.8%	-1.3%
260	0.760	36.50	1.24	37.74	0.000	0.00	37.74	+2.5%	+2.5%	+2.8%	-1.3%
270	0.760	20.61	0.78	21.39	0.000	0.00	21.39	-7.3%	-7.3%	-7.0%	-10.7%
280	0.760	20.57	0.71	21.28	0.000	0.00	21.28	+0.4%	+0.4%	+0.7%	-3.3%
290	0.760	24.46	0.90	25.36	0.000	0.00	25.36	-5.3%	-5.3%	-5.0%	-8.8%
300	0.760	38.99	1.21	40.20	0.000	0.00	40.20	+11.7%	+11.7%	+12.0%	+7.6%
310	0.760	25.95	0.95	26.90	0.000	0.00	26.90	-4.2%	-4.2%	-3.9%	-7.7%
320	0.760	29.21	0.94	30.15	0.000	0.00	30.15	+7.7%	+7.7%	+8.0%	+3.7%
330	0.760	29.28	0.95	30.23	0.000	0.00	30.23	+7.3%	+7.3%	+7.6%	+3.3%
340	0.760	21.92	0.81	22.73	0.000	0.00	22.73	-5.8%	-5.8%	-5.5%	-9.3%
350	0.760	30.01	0.98	30.99	0.000	0.00	30.99	+6.6%	+6.6%	+6.9%	+2.7%
360	0.760	21.33	0.75	22.08	0.000	0.00	22.08	-0.8%	-0.8%	-0.5%	-4.5%
370	0.760	23.66	0.80	24.46	0.000	0.00	24.46	+3.3%	+3.3%	+3.6%	-0.5%
380	0.760	21.70	0.74	22.44	0.000	0.00	22.44	+1.8%	+1.8%	+2.1%	-1.9%
390	0.760	22.17	0.77	22.94	0.000	0.00	22.94	+1.0%	+1.0%	+1.3%	-2.7%
Statewide	0.760	25.30	0.88	26.18	0.000	0.00	26.18	+0.5%	+0.5%	+0.8%	-3.2%

[d] Column (19) = [1 + (18)] / [1 + Statewide (18)] × (1 + Statewide indicated rate level change) - 1
[e] Column (20) = [1 + (19)] × [1 + Class page Buildings (18)] / [1 + Class page Total (18)] - 1
[f] Column (21) = [1 + (19)] × [1 + Class page Contents (18)] / [1 + Class page Total (18)] - 1

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF INDICATED TERRITORY RATE LEVEL CHANGES
EXTENDED COVERAGE

Territory	(1) Latest-Year Aggregate Calculated Earned Premium at Current Level	(2) Current Average Base Class Rate	(3) Five-Year Non-Hurricane Experience Base Class Loss Cost	(4) Five-Year Earned House Years	(5) Credibility	(6) Credibility-Weighted Base Class Loss Cost [a]	(7) Modeled Hurricane Base Class Loss Cost	(8) Total Base Class Loss Cost (6) + (7)	(9) Indicated Relativity (8) / SW (8)	(10) Indicated Base Class Loss Cost (9) × 34.23 [b]	(11) Trended Fixed Expense per Policy [c]	(12) Trended Loss and Fixed Expense (10) + (11)
110	29,727,831	102.39	11.39	112,473	0.50	13.09	61.67	74.76	2.392	81.88	3.08	84.96
120	36,272,371	116.00	9.83	161,126	0.60	11.81	58.02	69.83	2.234	76.47	4.17	80.64
130	4,372,443	92.69	13.39	39,850	0.30	14.37	42.06	56.43	1.805	61.79	7.23	69.02
140	31,131,544	99.77	12.93	256,923	0.80	13.30	51.16	64.46	2.062	70.58	6.97	77.55
150	13,945,904	83.98	19.02	147,234	0.60	17.33	21.90	39.23	1.255	42.96	7.69	50.65
160	15,042,506	88.25	14.85	141,539	0.60	14.83	24.54	39.37	1.259	43.10	6.94	50.04
170	726,326	40.37	14.61	16,739	0.20	14.75	8.25	23.00	0.736	25.19	8.42	33.61
180	8,116,919	45.77	13.39	142,527	0.60	13.95	11.96	25.91	0.829	28.38	7.06	35.44
190	2,820,349	47.99	14.78	58,719	0.40	14.79	18.53	33.32	1.066	36.49	8.84	45.33
200	1,758,350	55.91	15.46	37,589	0.30	14.99	23.50	38.49	1.231	42.14	10.26	52.40
210	1,903,814	39.85	12.95	44,312	0.30	14.24	9.61	23.85	0.763	26.12	8.37	34.49
220	11,362,531	35.46	21.54	151,588	0.60	18.84	6.40	25.24	0.807	27.62	4.06	31.68
230	3,613,834	52.56	13.28	98,500	0.50	14.04	16.74	30.78	0.985	33.72	11.92	45.64
240	5,210,675	35.35	19.31	132,767	0.60	17.50	7.21	24.71	0.790	27.04	7.74	34.78
250	5,210,957	35.59	18.57	81,471	0.40	16.30	5.26	21.56	0.690	23.62	4.72	28.34
260	2,158,384	35.64	15.84	58,001	0.40	15.21	4.36	19.57	0.626	21.43	8.38	29.81
270	10,707,901	25.35	16.72	165,571	0.70	16.14	3.04	19.18	0.614	21.02	3.36	24.38
280	1,795,648	24.77	12.59	35,697	0.30	14.13	2.67	16.80	0.537	18.38	4.21	22.59
290	2,752,769	30.94	16.78	45,009	0.30	15.39	3.70	19.09	0.611	20.92	4.27	25.19
300	1,336,171	29.62	15.16	52,752	0.30	14.90	4.97	19.87	0.636	21.77	9.63	31.40
310	9,684,507	22.59	14.65	280,420	0.90	14.66	1.91	16.57	0.530	18.14	5.41	23.55
320	5,127,602	25.51	16.33	132,364	0.60	15.71	2.22	17.93	0.574	19.65	5.42	25.07
330	291,852	25.38	13.61	12,482	0.10	14.67	1.83	16.50	0.528	18.07	8.63	26.70
340	10,628,472	20.63	12.73	248,549	0.80	13.14	1.77	14.91	0.477	16.33	3.94	20.27
350	3,660,914	23.00	15.05	122,372	0.60	14.95	1.56	16.51	0.528	18.07	6.16	24.23
360	6,977,800	20.05	13.35	236,099	0.80	13.64	0.80	14.44	0.462	15.81	5.39	21.20
370	396,857	20.15	11.74	15,713	0.20	14.18	0.64	14.82	0.474	16.23	6.32	22.55
380	1,154,929	18.03	13.44	41,107	0.30	14.39	0.48	14.87	0.476	16.29	5.23	21.52
390	1,171,279	17.59	12.07	40,724	0.30	13.97	0.42	14.39	0.460	15.75	4.97	20.72
Statewide	229,061,439	48.55	14.79	3,110,217	1.00	14.80	16.16	31.26	1.000	34.23	5.52	39.75

[a] Column (6) = (5) × (3) + [1.00 - (5)] × Statewide (3)
[b] Column (10) = (9) × Indicated Statewide Base Loss Cost
[c] The derivation of the territory Trended Fixed Expense per Policy is on page D-30.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF INDICATED TERRITORY RATE LEVEL CHANGES
EXTENDED COVERAGE

Territory	(13) Expected Loss and Fixed Expense Ratio	(14) Indicated Net Base Class Rate (12) / (13)	(15) Compensation for Assessment Risk Cost per Policy	(16) Net Cost of Reinsurance per Policy	(17) Base Class Rate Excluding Deviations (14) + (15) + (16)	(18) Selected Deviation	(19) Deviation Amount per Policy (17) / (1.0 - (18)) - (17)	(20) Indicated Required Base Class Rate (17) + (19)	(21) Indicated Rate Level Change (20) / (2) - 1	(22) Indicated Rate Level Change Balanced to Statewide Indicated Level [d]	(23) Indicated Buildings Rate Level Change [e]	(24) Indicated Contents Rate Level Change [f]
110	0.780	108.92	3.36	75.55	187.83	0.000	0.00	187.83	+83.4%	+83.3%	+84.1%	+57.0%
120	0.780	103.38	3.81	90.79	197.98	0.000	0.00	197.98	+70.7%	+70.6%	+71.4%	+46.1%
130	0.780	88.49	3.04	57.15	148.68	0.000	0.00	148.68	+60.4%	+60.3%	+61.0%	+37.3%
140	0.780	99.42	3.28	78.98	181.68	0.000	0.00	181.68	+82.1%	+82.0%	+82.8%	+55.9%
150	0.780	64.94	2.76	33.33	101.03	0.000	0.00	101.03	+20.3%	+20.2%	+20.7%	+2.9%
160	0.780	64.15	2.90	42.25	109.30	0.000	0.00	109.30	+23.9%	+23.8%	+24.3%	+6.0%
170	0.780	43.09	1.33	11.91	56.33	0.000	0.00	56.33	+39.5%	+39.4%	+40.0%	+19.4%
180	0.780	45.44	1.50	20.12	67.06	0.000	0.00	67.06	+46.5%	+46.4%	+47.0%	+25.4%
190	0.780	58.12	1.58	32.17	91.87	0.000	0.00	91.87	+91.4%	+91.3%	+92.1%	+63.8%
200	0.780	67.18	1.84	39.05	108.07	0.000	0.00	108.07	+93.3%	+93.2%	+94.1%	+65.5%
210	0.780	44.22	1.31	16.25	61.78	0.000	0.00	61.78	+55.0%	+54.9%	+55.6%	+32.7%
220	0.780	40.62	1.16	11.41	53.19	0.000	0.00	53.19	+50.0%	+49.9%	+50.6%	+28.4%
230	0.780	58.51	1.73	27.48	87.72	0.000	0.00	87.72	+66.9%	+66.8%	+67.5%	+42.9%
240	0.780	44.59	1.16	12.18	57.93	0.000	0.00	57.93	+63.9%	+63.8%	+64.5%	+40.3%
250	0.780	36.33	1.17	9.06	46.56	0.000	0.00	46.56	+30.8%	+30.7%	+31.3%	+11.9%
260	0.780	38.22	1.17	7.21	46.60	0.000	0.00	46.60	+30.8%	+30.7%	+31.3%	+11.9%
270	0.780	31.26	0.83	5.33	37.42	0.000	0.00	37.42	+47.6%	+47.5%	+48.2%	+26.3%
280	0.780	28.96	0.81	4.59	34.36	0.000	0.00	34.36	+38.7%	+38.6%	+39.2%	+18.7%
290	0.780	32.29	1.02	6.36	39.67	0.000	0.00	39.67	+28.2%	+28.1%	+28.7%	+9.7%
300	0.780	40.26	0.97	7.61	48.84	0.000	0.00	48.84	+64.9%	+64.8%	+65.5%	+41.1%
310	0.780	30.19	0.74	3.20	34.13	0.000	0.00	34.13	+51.1%	+51.0%	+51.7%	+29.3%
320	0.780	32.14	0.84	3.43	36.41	0.000	0.00	36.41	+42.7%	+42.6%	+43.2%	+22.1%
330	0.780	34.23	0.83	2.70	37.76	0.000	0.00	37.76	+48.8%	+48.7%	+49.4%	+27.3%
340	0.780	25.99	0.68	2.35	29.02	0.000	0.00	29.02	+40.7%	+40.6%	+41.2%	+20.4%
350	0.780	31.06	0.76	1.66	33.48	0.000	0.00	33.48	+45.6%	+45.5%	+46.1%	+24.6%
360	0.780	27.18	0.66	0.77	28.61	0.000	0.00	28.61	+42.7%	+42.6%	+43.2%	+22.1%
370	0.780	28.91	0.66	0.63	30.20	0.000	0.00	30.20	+49.9%	+49.8%	+50.5%	+28.3%
380	0.780	27.59	0.59	0.25	28.43	0.000	0.00	28.43	+57.7%	+57.6%	+58.3%	+35.0%
390	0.780	26.56	0.58	0.15	27.29	0.000	0.00	27.29	+55.1%	+55.0%	+55.7%	+32.7%
Statewide	0.780	50.96	1.59	24.21	76.76	0.000	0.00	76.76	+58.2%	+58.1%	+58.8%	+35.4%

[d] Column (22) = [1 + (21)] / [1 + Statewide (21)] × (1 + Statewide indicated rate level change) - 1
[e] Column (23) = [1 + (22)] × [1 + Class page Buildings (21)] / [1 + Class page Total (21)] - 1
[f] Column (24) = [1 + (22)] × [1 + Class page Contents (21)] / [1 + Class page Total (21)] - 1

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF FILED TERRITORY BASE CLASS RATES

In order to mitigate the effects of large rate changes on policyholders, the Governing Committee selected maximum Fire and Extended Coverage rate level changes for each class in each territory as follows:

- For Fire, no rate level changes are being filed.
- For each territory, the Extended Coverage rate level change was capped at +25.0%.

In addition to the filed rate level changes, the filed Buildings base class rates are being off-balanced to implement the new Age of Construction rating factors on a revenue-neutral basis.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF FILED TERRITORY BASE CLASS RATES
BUILDINGS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Fire						Extended Coverage						Combined
Territory	Latest-Year Aggregate Calculated Earned Premium at Current Level	Current Base Class Rate	Off-Balance Factor [a]	Indicated Buildings Rate Level Change	Selected Rate Level Change	Filed Base Class Rate	Latest-Year Aggregate Calculated Earned Premium at Current Level	Current Base Class Rate	Off-Balance Factor [a]	Indicated Buildings Rate Level Change	**Capped at: +25.0%** Selected Rate Level Change	Filed Base Class Rate	Filed Rate Level Change [b]
110	2,370,871	$17	0.990	+0.5%	0.0%	$17	29,727,831	$172	0.990	+84.1%	+25.0%	$217	+23.2%
120	2,457,388	$17	0.985	+5.4%	0.0%	$17	36,272,371	$192	0.985	+71.4%	+25.0%	$244	+23.4%
130	900,983	$31	0.984	-6.3%	0.0%	$32	4,372,443	$138	0.984	+61.0%	+25.0%	$175	+20.7%
140	4,374,115	$28	0.982	-2.3%	0.0%	$29	31,131,544	$149	0.982	+82.8%	+25.0%	$190	+21.9%
150	2,765,196	$29	0.989	+13.3%	0.0%	$29	13,945,904	$126	0.989	+20.7%	+20.7%	$154	+17.3%
160	2,975,008	$32	0.982	+1.8%	0.0%	$33	15,042,506	$130	0.983	+24.3%	+24.3%	$164	+20.3%
170	430,955	$44	0.995	+3.1%	0.0%	$44	726,326	$62	0.995	+40.0%	+25.0%	$78	+15.7%
180	3,541,000	$45	0.991	+1.4%	0.0%	$45	8,116,919	$68	0.991	+47.0%	+25.0%	$86	+17.4%
190	1,326,659	$46	0.995	+9.1%	0.0%	$46	2,820,349	$70	0.995	+92.1%	+25.0%	$88	+17.0%
200	1,072,413	$62	0.996	+0.1%	0.0%	$62	1,758,350	$88	0.995	+94.1%	+25.0%	$111	+15.5%
210	919,298	$41	0.995	+9.8%	0.0%	$41	1,903,814	$57	0.995	+55.6%	+25.0%	$72	+16.9%
220	5,932,504	$41	0.989	-6.7%	0.0%	$41	11,362,531	$50	0.988	+50.6%	+25.0%	$63	+16.4%
230	2,270,329	$64	0.994	+7.9%	0.0%	$64	3,613,834	$80	0.994	+67.5%	+25.0%	$101	+15.4%
240	2,970,519	$42	0.992	+11.5%	0.0%	$42	5,210,675	$51	0.992	+64.5%	+25.0%	$64	+15.9%
250	2,349,157	$38	0.971	+2.8%	0.0%	$39	5,210,957	$52	0.969	+31.3%	+25.0%	$67	+17.2%
260	1,590,192	$47	0.996	+2.8%	0.0%	$47	2,158,384	$50	0.996	+31.3%	+25.0%	$63	+14.4%
270	4,696,378	$30	0.979	-7.0%	0.0%	$31	10,707,901	$37	0.979	+48.2%	+25.0%	$47	+17.4%
280	833,562	$28	0.989	+0.7%	0.0%	$28	1,795,648	$37	0.989	+39.2%	+25.0%	$47	+17.1%
290	1,243,323	$35	0.979	-5.0%	0.0%	$36	2,752,769	$46	0.978	+28.7%	+25.0%	$59	+17.2%
300	1,110,927	$47	0.997	+12.0%	0.0%	$47	1,336,171	$43	0.997	+65.5%	+25.0%	$54	+13.7%
310	6,573,234	$35	0.995	-3.9%	0.0%	$35	9,684,507	$31	0.995	+51.7%	+25.0%	$39	+14.9%
320	3,064,099	$34	0.994	+8.0%	0.0%	$34	5,127,602	$34	0.993	+43.2%	+25.0%	$43	+15.6%
330	230,299	$36	0.997	+7.6%	0.0%	$36	291,852	$37	0.998	+49.4%	+25.0%	$46	+14.0%
340	6,152,766	$31	0.990	-5.5%	0.0%	$31	10,628,472	$29	0.990	+41.2%	+25.0%	$37	+15.8%
350	2,679,841	$35	0.993	+6.9%	0.0%	$35	3,660,914	$30	0.993	+46.1%	+25.0%	$38	+14.4%
360	4,523,349	$29	0.992	-0.5%	0.0%	$29	6,977,800	$29	0.992	+43.2%	+25.0%	$37	+15.2%
370	314,447	$32	0.993	+3.6%	0.0%	$32	396,857	$31	0.992	+50.5%	+25.0%	$39	+13.9%
380	917,581	$29	0.988	+2.1%	0.0%	$29	1,154,929	$27	0.989	+58.3%	+25.0%	$34	+13.9%
390	969,081	$30	0.992	+1.3%	0.0%	$30	1,171,279	$27	0.992	+55.7%	+25.0%	$34	+13.7%
Statewide	71,555,474	$34.53	0.989	+0.8%	0.0%	$34.91	229,061,439	$69.25	0.987	+58.8%	+24.7%	$87.49	+18.8%

[a] The off-balance factors are applied to implement the proposed Age of Construction relativities on a revenue-neutral basis.
[b] Column (13) = [(1) × (5) + (7) × (11)] / [(1) + (7)]

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF FILED TERRITORY BASE CLASS RATES
CONTENTS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Fire					Extended Coverage					Combined
Territory	Latest-Year Aggregate Calculated Earned Premium at Current Level	Current Base Class Rate	Indicated Contents Rate Level Change	Selected Rate Level Change	Filed Base Class Rate	Latest-Year Aggregate Calculated Earned Premium at Current Level	Current Base Class Rate	Indicated Contents Rate Level Change	**Capped at: +25.0%** Selected Rate Level Change	Filed Base Class Rate	Filed Rate Level Change [a]
110	2,370,871	$4	-3.5%	0.0%	$4	29,727,831	$24	+57.0%	+25.0%	$30	+23.2%
120	2,457,388	$4	+1.2%	0.0%	$4	36,272,371	$28	+46.1%	+25.0%	$35	+23.4%
130	900,983	$9	-10.0%	0.0%	$9	4,372,443	$21	+37.3%	+25.0%	$26	+20.7%
140	4,374,115	$9	-6.2%	0.0%	$9	31,131,544	$21	+55.9%	+25.0%	$26	+21.9%
150	2,765,196	$9	+8.8%	0.0%	$9	13,945,904	$11	+2.9%	+2.9%	$11	+2.4%
160	2,975,008	$11	-2.2%	0.0%	$11	15,042,506	$14	+6.0%	+6.0%	$15	+5.0%
170	430,955	$13	-1.0%	0.0%	$13	726,326	$5	+19.4%	+19.4%	$6	+12.2%
180	3,541,000	$14	-2.6%	0.0%	$14	8,116,919	$6	+25.4%	+25.0%	$8	+17.4%
190	1,326,659	$14	+4.8%	0.0%	$14	2,820,349	$8	+63.8%	+25.0%	$10	+17.0%
200	1,072,413	$16	-3.9%	0.0%	$16	1,758,350	$11	+65.5%	+25.0%	$14	+15.5%
210	919,298	$13	+5.5%	0.0%	$13	1,903,814	$4	+32.7%	+25.0%	$5	+16.9%
220	5,932,504	$12	-10.4%	0.0%	$12	11,362,531	$3	+28.4%	+25.0%	$4	+16.4%
230	2,270,329	$17	+3.6%	0.0%	$17	3,613,834	$9	+42.9%	+25.0%	$11	+15.4%
240	2,970,519	$13	+7.1%	0.0%	$13	5,210,675	$3	+40.3%	+25.0%	$4	+15.9%
250	2,349,157	$12	-1.3%	0.0%	$12	5,210,957	$3	+11.9%	+11.9%	$3	+8.2%
260	1,590,192	$13	-1.3%	0.0%	$13	2,158,384	$2	+11.9%	+11.9%	$2	+6.9%
270	4,696,378	$10	-10.7%	0.0%	$10	10,707,901	$2	+26.3%	+25.0%	$3	+17.4%
280	833,562	$9	-3.3%	0.0%	$9	1,795,648	$2	+18.7%	+18.7%	$2	+12.8%
290	1,243,323	$11	-8.8%	0.0%	$11	2,752,769	$2	+9.7%	+9.7%	$2	+6.7%
300	1,110,927	$15	+7.6%	0.0%	$15	1,336,171	$4	+41.1%	+25.0%	$5	+13.7%
310	6,573,234	$11	-7.7%	0.0%	$11	9,684,507	$1	+29.3%	+25.0%	$1	+14.9%
320	3,064,099	$11	+3.7%	0.0%	$11	5,127,602	$1	+22.1%	+22.1%	$1	+13.8%
330	230,299	$12	+3.3%	0.0%	$12	291,852	$1	+27.3%	+25.0%	$1	+14.0%
340	6,152,766	$9	-9.3%	0.0%	$9	10,628,472	$1	+20.4%	+20.4%	$1	+12.9%
350	2,679,841	$11	+2.7%	0.0%	$11	3,660,914	$1	+24.6%	+24.6%	$1	+14.2%
360	4,523,349	$9	-4.5%	0.0%	$9	6,977,800	$2	+22.1%	+22.1%	$2	+13.4%
370	314,447	$10	-0.5%	0.0%	$10	396,857	$2	+28.3%	+25.0%	$3	+13.9%
380	917,581	$9	-1.9%	0.0%	$9	1,154,929	$1	+35.0%	+25.0%	$1	+13.9%
390	969,081	$10	-2.7%	0.0%	$10	1,171,279	$1	+32.7%	+25.0%	$1	+13.7%
Statewide	71,555,474	$10.22	-3.2%	0.0%	$10.22	229,061,439	$8.65	+35.4%	+21.4%	$10.50	+16.3%

[a] Column (11) = [(1) × (4) + (6) × (9)] / [(1) + (6)]

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DERIVATION OF WIND EXCLUSION CREDITS

The filed wind exclusion credits on page B-4 are based on the following formula:

$$C_X = \left[I - \frac{\frac{Ldi' + Fi}{(1-V)} + d'R + dB}{(1-D)} \right] * r_x$$

C_X = Indicated credit for construction type x (Frame, Masonry or Mobile Home)

I = Indicated rate

F = Provision in filed rates for fixed expenses (territory trended fixed expense ratio divided by the filed territory buildings or contents rate level change)

V = Provision in filed rates for variable expenses

L = Provision in filed rates for losses and loss adjustment expenses = 1.0-V-F

d = Percentage of losses remaining after wind losses are excluded

i = Indicated rate excluding compensation for assessment risk and deviations

i' = Indicated rate excluding compensation for assessment risk, deviations and the net cost of reinsurance

B = Compensation for assessment risk

D = Deviation loading

d' = The portion of the net cost of reinsurance attributable to non-wind related perils

R = Net cost of reinsurance provision

r_x = The construction relativity (Frame = 1.00, Masonry = 0.95, Mobile Homes = 1.25)

The d value is calculated as:

$$\frac{N}{N + X + Y}$$

Where N = 5-year average annual non-wind losses; X = latest-year modeled hurricane losses and Y = 5-year average annual non-hurricane wind losses.

The d' value is calculated as:

$$\frac{W}{W + O + H}$$

Where each variable represents the net cost of reinsurance attributable to a particular peril (W = Winter Storm, O = Other Wind, and H = Hurricane Wind).

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DERIVATION OF WIND EXCLUSION CREDITS FOR EXTENDED COVERAGE

The following displays the variables described above and the indicated credit, C:

	Territory 110		Territory 120		Territory 130		Territory 140		Territory 150		Territory 160	
	Buildings	Contents	Buildings	Contents	Buildings	Contents	Buildings	Contents	Buildings	Contents	Buildings	Contents
C	$280.93	$29.98	$297.56	$35.14	$183.85	$25.82	$235.18	$27.08	$121.12	$8.43	$128.44	$10.97
I	$317	$38	$329	$41	$222	$29	$272	$33	$152	$11	$162	$15
F	0.024	0.024	0.029	0.029	0.063	0.063	0.057	0.057	0.077	0.090	0.064	0.075
V	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220
L	0.756	0.756	0.751	0.751	0.717	0.717	0.723	0.723	0.703	0.690	0.716	0.705
d	0.144	0.311	0.113	0.207	0.162	0.056	0.121	0.206	0.176	0.199	0.226	0.312
i	$311.00	$37.00	$323.00	$40.00	$218.00	$28.00	$267.00	$32.00	$148.00	$11.00	$157.00	$14.00
i'	$184.00	$22.00	$172.00	$21.00	$133.00	$17.00	$149.00	$18.00	$98.00	$7.00	$95.00	$9.00
B	$5.65	$0.79	$6.31	$0.92	$4.53	$0.69	$4.89	$0.69	$4.14	$0.36	$4.27	$0.46
D	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
d'	0.000013	0.000012	0.000005	0.000005	0.000012	0.000016	0.000006	0.000007	0.000014	0.000016	0.000010	0.000012
R	$127.00	$15.00	$151.00	$19.00	$85.00	$11.00	$118.00	$14.00	$50.00	$4.00	$62.00	$5.00
N	3,171,366	239,914	2,490,422	181,321	438,395	3,819	2,517,861	138,605	1,239,573	34,824	1,591,169	41,567
X	18,547,739	530,608	18,716,807	685,579	2,083,092	62,195	16,769,366	526,738	3,847,479	87,573	4,453,823	82,925
Y	269,270	1,045	780,982	7,280	190,949	2,207	1,497,750	6,737	1,960,382	52,609	981,524	8,730
W	224	6	111	3	26	1	130	4	64	2	59	2
O	31,955	889	26,400	735	251	7	14,362	400	7,444	207	22,013	613
H	17,705,102	492,788	23,014,067	640,553	2,212,041	61,568	20,247,382	563,548	4,536,274	126,259	5,905,117	164,358

In order to derive the filed dollar credit, the indicated percentage credit is applied to the filed base rate.

	Territory 110		Territory 120		Territory 130		Territory 140		Territory 150		Territory 160	
	Buildings	Contents	Buildings	Contents	Buildings	Contents	Buildings	Contents	Buildings	Contents	Buildings	Contents
(1) Indicated Frame Credit	$281	$30	$298	$35	$184	$26	$235	$27	$121	$8	$128	$11
(2) Indicated Frame Base Rate	$317	$38	$329	$41	$222	$29	$272	$33	$152	$11	$162	$15
(3) Indicated Non-Wind Frame Base Rate = (2) - (1)	$36	$8	$31	$6	$38	$3	$37	$6	$31	$3	$34	$4
(4) Off-Balance Factor	0.990	1.000	0.985	1.000	0.984	1.000	0.982	1.000	0.989	1.000	0.983	1.000
(5) Indicated Off-Balanced Non-Wind Frame Base Rate = (3) / (4)	$36	$8	$32	$6	$39	$3	$37	$6	$31	$3	$34	$4
(6) Filed Frame Base Rate	$217	$30	$244	$35	$175	$26	$190	$26	$154	$11	$164	$15
(7) Filed Frame Credit = (6) - (5)	$181	$22	$212	$29	$136	$23	$153	$20	$123	$8	$130	$11
(8) Filed Masonry Credit = (7) * 0.95	$172	$21	$201	$28	$129	$22	$145	$19	$117	$8	$124	$10
(9) Filed Mobile Home Credit = (7) * 1.25	$226	$28	$265	$36	$170	$29	$191	$25	$154	$10	$163	$14

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DWELLING PROPERTY INSURANCE

DERIVATION OF WINDSTORM LOSS MITIGATION CREDITS
BUILDINGS

	Territory					
	110	120	130	140	150	160
(1) Current Wind Exclusion Credit	148	167	102	111	100	105
(2) Filed Wind Exclusion Credit	181	212	136	153	123	130
(3) Ratio of Filed and Current Wind Credits = (2)/(1) [(a)]	1.223	1.269	1.333	1.378	1.230	1.238
(4) **Current Windstorm Loss Mitigation Credits - Frame**						
Total Hip Roof	8	8	5	5	5	4
Opening Protection	8	8	5	5	5	4
Total Hip Roof and Opening Protection	16	17	10	10	10	10
IBHS Designation:						
FORTIFIED for Safer Living®	26	30	11	19	13	17
FORTIFIED Roof - Hurricane - Existing Roof	6	6	3	3	4	3
FORTIFIED Roof - Hurricane - New Roof	10	10	5	7	5	6
FORTIFIED Home - Hurricane - Silver - Existing Roof	16	19	7	12	6	11
FORTIFIED Home - Hurricane - Silver - New Roof	20	22	8	14	8	13
FORTIFIED Home - Hurricane - Gold - Existing Roof	20	22	10	14	10	13
FORTIFIED Home - Hurricane - Gold - New Roof	22	26	11	18	11	16
(5) **Revised Windstorm Loss Mitigation Credits - Frame = (4)×(3)**						
Total Hip Roof	10	10	7	7	6	5
Opening Protection	10	10	7	7	6	5
Total Hip Roof and Opening Protection	20	22	13	14	12	12
IBHS Designation:						
FORTIFIED for Safer Living®	32	38	15	26	16	21
FORTIFIED Roof - Hurricane - Existing Roof	7	8	4	4	5	4
FORTIFIED Roof - Hurricane - New Roof	12	13	7	10	6	7
FORTIFIED Home - Hurricane - Silver - Existing Roof	20	24	9	17	7	14
FORTIFIED Home - Hurricane - Silver - New Roof	24	28	11	19	10	16
FORTIFIED Home - Hurricane - Gold - Existing Roof	24	28	13	19	12	16
FORTIFIED Home - Hurricane - Gold - New Roof	27	33	15	25	14	20
(6) **New Windstorm Loss Mitigation Credits - Masonry = (5)×0.95**						
Total Hip Roof	10	10	7	7	6	5
Opening Protection	10	10	7	7	6	5
Total Hip Roof and Opening Protection	19	21	12	13	11	11
IBHS Designation:						
FORTIFIED for Safer Living®	30	36	14	25	15	20
FORTIFIED Roof - Hurricane - Existing Roof	7	8	4	4	5	4
FORTIFIED Roof - Hurricane - New Roof	11	12	7	10	6	7
FORTIFIED Home - Hurricane - Silver - Existing Roof	19	23	9	16	7	13
FORTIFIED Home - Hurricane - Silver - New Roof	23	27	10	18	10	15
FORTIFIED Home - Hurricane - Gold - Existing Roof	23	27	12	18	11	15
FORTIFIED Home - Hurricane - Gold - New Roof	26	31	14	24	13	19

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DWELLING PROPERTY INSURANCE

DERIVATION OF WINDSTORM LOSS MITIGATION CREDITS
CONTENTS

	Territory					
	110	120	130	140	150	160
(1) Current Wind Exclusion Credit	19	22	13	13	10	12
(2) Filed Wind Exclusion Credit	22	29	23	20	8	11
(3) Ratio of Filed and Current Wind Credits = (2)/(1)	1.158	1.318	1.769	1.538	0.800	0.917
(4) **Current Windstorm Loss Mitigation Credits - Frame**						
Total Hip Roof	1	2	1	1	1	1
Opening Protection	1	2	1	1	1	1
Total Hip Roof and Opening Protection	1	3	1	1	1	1
IBHS Designation:						
FORTIFIED for Safer Living®	4	5	2	3	2	3
FORTIFIED Roof - Hurricane - Existing Roof	1	2	1	1	1	1
FORTIFIED Roof - Hurricane - New Roof	1	3	1	1	1	1
FORTIFIED Home - Hurricane - Silver - Existing Roof	2	3	1	2	1	2
FORTIFIED Home - Hurricane - Silver - New Roof	2	4	1	2	1	2
FORTIFIED Home - Hurricane - Gold - Existing Roof	3	4	1	2	1	2
FORTIFIED Home - Hurricane - Gold - New Roof	3	4	2	2	2	2
(5) **Revised Windstorm Loss Mitigation Credits - Frame = (4)×(3)**						
Total Hip Roof	1	3	2	2	1	1
Opening Protection	1	3	2	2	1	1
Total Hip Roof and Opening Protection	1	4	2	2	1	1
IBHS Designation:						
FORTIFIED for Safer Living®	5	7	4	5	2	3
FORTIFIED Roof - Hurricane - Existing Roof	1	3	2	2	1	1
FORTIFIED Roof - Hurricane - New Roof	1	4	2	2	1	1
FORTIFIED Home - Hurricane - Silver - Existing Roof	2	4	2	3	1	2
FORTIFIED Home - Hurricane - Silver - New Roof	2	5	2	3	1	2
FORTIFIED Home - Hurricane - Gold - Existing Roof	3	5	2	3	1	2
FORTIFIED Home - Hurricane - Gold - New Roof	3	5	4	3	2	2
(6) **New Windstorm Loss Mitigation Credits - Masonry = (5)×0.95**						
Total Hip Roof	1	3	2	2	1	1
Opening Protection	1	3	2	2	1	1
Total Hip Roof and Opening Protection	1	4	2	2	1	1
IBHS Designation:						
FORTIFIED for Safer Living®	5	7	4	5	2	3
FORTIFIED Roof - Hurricane - Existing Roof	1	3	2	2	1	1
FORTIFIED Roof - Hurricane - New Roof	1	4	2	2	1	1
FORTIFIED Home - Hurricane - Silver - Existing Roof	2	4	2	3	1	2
FORTIFIED Home - Hurricane - Silver - New Roof	2	5	2	3	1	2
FORTIFIED Home - Hurricane - Gold - Existing Roof	3	5	2	3	1	2
FORTIFIED Home - Hurricane - Gold - New Roof	3	5	4	3	2	2

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DWELLING PROPERTY INSURANCE

DERIVATION OF WINDSTORM LOSS MITIGATION CREDITS

The filed credits displayed on pages C-18 and C-19 apply to the current IBHS designations effective on or after March 31, 2019. The same filed credits apply to the previous IBHS designations according to the following mappings:

Current IBHS Designation:	Previous IBHS Designation:
FORTIFIED for Safer Living®	Hurricane Fortified for Safer Living®
FORTIFIED Roof - Hurricane - Existing Roof	Hurricane Fortified for Existing Homes® Bronze Option 1
FORTIFIED Roof - Hurricane - New Roof	Hurricane Fortified for Existing Homes® Bronze Option 2
FORTIFIED Home - Hurricane - Silver - Existing Roof	Hurricane Fortified for Existing Homes® Silver Option 1
FORTIFIED Home - Hurricane - Silver - New Roof	Hurricane Fortified for Existing Homes® Silver Option 2
FORTIFIED Home - Hurricane - Gold - Existing Roof	Hurricane Fortified for Existing Homes® Gold Option 1
FORTIFIED Home - Hurricane - Gold - New Roof	Hurricane Fortified for Existing Homes® Gold Option 2

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SECTION D - EXPLANATORY MATERIAL

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

EXPLANATORY MEMORANDUM

This memorandum supplements the filing letter and supporting exhibits setting forth a revision of dwelling insurance rates in the State of North Carolina. It is the purpose of this memorandum to describe the source data used and to set forth in detail the insurance ratemaking procedures reflected in the filing. Certain pages in the filing and accompanying material contain a notation "all carriers" or other similar wording. This indicates that the data are combined ISO and ISS data. Data for certain companies are not included, as noted in Section E.

Premium and Loss Experience

This revision is based upon the combined premium and loss experience of all licensed companies writing residential dwelling insurance in this State, except as noted in Section E. In order to have this experience available in all detail necessary for rate review and ratemaking in accordance with accepted standards, all such companies are required to file each year their total dwelling insurance experience with the official statistical agents. Experience is recorded pursuant to the officially approved statistical plans and reported by the companies in accordance with instructions issued by the statistical agents under the Official Calls for Experience.

The Commissioner appointed the following statistical agents for the collection of dwelling insurance experience in North Carolina: Insurance Services Office (ISO), Independent Statistical Service, Inc. (ISS), American Association of Insurance Services, Inc. (AAIS), and National Independent Statistical Service (NISS).

Experience utilized in the filing was collected under the Personal Lines Statistical Plan (Other Than Automobile), Personal Lines Statistical Agent Plan (Other Than Automobile) and the 2018 Official Statistical Programs of ISO, and the Personal Lines Statistical Plan and the 2018 Statistical Programs of ISS. In substance, the statistical plans of all statistical agents are similar in North Carolina and provide for the recording and reporting of the experience in the detail required for ratemaking and in such form that the experience of all companies can be combined. The experience collected by AAIS and in the ISO Statistical Agent Plan is collected in lesser detail and has not been used in this review.

The licensing of an organization and its appointment as a statistical agent in North Carolina are predicated upon demonstration by the organization of its ability to perform this function. Moreover, the performance of the statistical agents is reviewed periodically through examination by personnel of state insurance departments under the convention examinations of the National Association of Insurance Commissioners. From time to time, such organizations are called upon by Insurance Department examiners to verify, and do verify, the data they consolidate as statistical agents.

The insurance companies likewise are subject to a variety of checks and controls. Effective controls are maintained within the company over the activities of company employees connected with the company's statistics. Companies are required by statute to submit directly to the Insurance Department statistical and accounting information to be found in the Annual Statement and the Insurance Expense Exhibit. These documents are scrutinized by experienced Insurance Department personnel throughout the country. The insurance companies are also subject to examination by the Insurance Department, which examinations include the statistical records of the companies.

Tabulations of experience reported to the ISS and NISS are provided to ISO. ISO combines the experience and develops the analysis included in this filing. This work is performed at the direction of the North Carolina Rate Bureau.

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DWELLING PROPERTY INSURANCE

EXPLANATORY MEMORANDUM

Statewide Rate Level Exhibits (pages C-2-6)

1. Experience

   Dwelling insurance experience was compiled on a calendar accident year basis for the years ended December 31, 2018, 2017, 2016, 2015, and 2014. For any twelve-month period, the accident year experience compiles the losses resulting from accidents occurring during that period with the premiums and number of dwellings "earned" during the same period. Since this filing utilizes catastrophe models to estimate the average annual losses attributable to hurricanes, actual hurricane losses have been removed from the ratemaking experience.

2. Average Rating Factors

   The earned premiums at present manual rates for the dwelling insurance coverages are calculated by multiplying the number of insured exposures earned during the experience period by the base rates and rating factors in effect at the time of review. The earned premiums at present rates are then used to determine average rating factors. The average rating factor is the ratio of the average rate (earned premium at manual level divided by corresponding house-years) and the current manual base rate. The average rating factor is used to convert the pure-premiums incurred during the experience period to the base-class level. This calculation is shown on pages D-32-41 for Fire and pages D-63-72 for Extended Coverage.

3. Losses

   Losses compiled for any accident year include paid losses as well as loss reserves. The amounts that will ultimately be required as payments of claims on open cases are carefully determined by the claim departments of the companies, and experience has shown that these determinations are highly accurate in the aggregate. Since, however, there are differences between the total incurred losses so determined and the amounts ultimately paid, the ratemaking procedure provides for a "development" of the incurred losses to a basis which, for all practical purposes, can be considered as the ultimate basis. This development is accomplished as follows:

   Each year the experience is compiled for the latest five years, all valued as of three months after the close of the latest accident year period. Thus, the experience is reported for the latest year as of 15 months, the preceding year as of 27 months, the next preceding year as of 39 months, the third preceding year as of 51 months and the fourth preceding year as of 63 months all measured from the beginning of each accident year respectively.

   From reports of prior years, similarly aged experience was obtained so that there are available five successive reports for the earliest year, four successive reports for the next earliest year, three successive reports for the middle year and two successive reports for the second most recent year.

Dwelling claims generally are settled, and are therefore sufficiently matured, as of 87 months, by which time nearly all incurred losses have been paid. From a comparison of the incurred losses for each year at successive valuation dates, it is determined what the rate of development has been in the past in order to calculate the development of less mature losses. This development is reflected in the incurred losses for the less mature years by the application of loss development factors. In this filing, loss development factors have been calculated based on the statewide experience of companies reporting to ISO, and are as follows:

	Factor to Develop to 87 Months	
Accident Year Ending	Fire	Extended Coverage
December 31, 2014	1.000	1.000
December 31, 2015	1.000	1.001
December 31, 2016	0.997	1.001
December 31, 2017	0.994	1.005
December 31, 2018	0.965	1.029

The derivation of the factors shown above is shown on pages D-12 and D-13. By applying these factors, the reported incurred losses have been adjusted to the amounts at which it is believed they will ultimately be settled.

In order to increase stability in rate levels while maintaining adequacy in the event of wide swings in hurricane and other losses, an excess procedure and hurricane loss models have been utilized for Extended Coverage. Hence, inordinate shifts in rate level (both upward and downward), which might result from reflecting large hurricane and other losses only in the year in which they occur will be reduced. The incurred non-modeled excess losses are those losses which result from unusually severe loss activity (other than hurricane). They are removed from the experience used in developing rates. In order to reflect the impact of excess losses (that are not related to hurricanes and not accounted for in the hurricane models) on a long-term basis, the non-modeled losses are multiplied by an excess factor of 1.064. The derivation of the excess factor is shown on page D-47. The derivation of the excess non-modeled losses is shown on page D-48. The modeled losses used in this filing are based on analysis performed by Aon on behalf of the North Carolina Rate Bureau and are displayed on page D-79.

4. Loss Adjustment Expense

The dwelling loss adjustment expenses, prior to trend considerations, are determined as an average percentage of the North Carolina incurred losses for calendar accident years 2015-2019 for Fire and Extended Coverage, based on a North Carolina expense call. The high and low years are excluded from the average. See pages D-24 and D-27.

A separate Loss Adjustment Expense factor was used for modeled hurricane losses. (See testimony of S. Fiete.)

5. Fixed Expense

The fixed expense (general expenses and other acquisition expenses) loading is determined as an average percentage of North Carolina earned premiums for calendar accident years 2017-2019, based on a North Carolina expense call. See pages D-22 and D-25. The development of fixed expense per policy is shown on page D-28.

6. Loss Trend

Loss trends are selected using the information provided by the observed growth in frequencies, severities, and pure premiums that occurred during the historical experience period. This procedure is displayed on pages D-14-16.

First, the frequencies, severities, and pure premiums are calculated by subline group, cause-of-loss group (i.e., wind-related, water-related, etc.), and year. Hurricane losses are excluded from the loss experience. Then average annual rates of change are calculated by fitting exponential curves to the data for three time periods: the latest five years, the latest four years, and the latest three years. Based on these average annual rates of change, historical annual rates of change are selected to trend the historical loss experience to the average occurrence date of the latest year (July 1, 2018) and prospective annual rates of change are selected to trend the losses from the latest year to one year beyond the assumed effective date (September 1, 2022). The historical and prospective annual rates of change that are selected for the pure premiums are used to trend the losses and are based on the selections for frequency and severity. The selected historical annual pure premium changes are -1.0% for Fire and +5.0% for Extended Coverage. The selected prospective annual pure premium changes are 0.0% for Fire and +9.0% for Extended Coverage.

7. Premium Trend

The premium trend procedure is based on the observed growth in yearly average policy amount relativities. This procedure is displayed on pages D-17-18.

First, the Current Amount Factors are calculated by subline group, class and year. The Current Amount Factor trends the average policy amount relativity (and, therefore, the Average Rating Factor used in the derivation of the statewide, class and territory rate level indications) from a given historical year to the average date of writing for the latest year of the review (January 1, 2018). Then, a least-squares fitted annual change is calculated for the historical average relativities. Based on the calculated value, a selection for the annual change is made. (The selected annual changes reflect consideration of the calculated value and the overall pattern in average relativity growth observed during the experience period.) The selected annual changes are used to trend the average policy size relativity from the latest year to six months beyond the assumed effective date (March 1, 2022). The selected annual changes are:

	Fire	Extended Coverage
Buildings	+1.1%	+1.5%
Contents	+2.0%	+2.9%

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8. Exposure Trend

The exposure trend procedure is based on the observed growth in yearly average policy amounts for Extended Coverage. This procedure is displayed on page D-19.

First, the average policy amounts are calculated by class and year. Then average annual rates of change are calculated by fitting exponential curves to the data for three time periods: the latest five years, the latest four years, and the latest three years. Based on these average annual rates of change, annual rates of change are selected to trend the latest-year exposures used to calculate the modeled hurricane losses to six months beyond the assumed effective date (March 1, 2022). The selected annual changes are +1.2% for Buildings and +2.2% for Contents.

9. Expense Trend

The selected annual change to be applied to general expense, other acquisition expense and loss adjustment expense costs is based on the observed growth in the All Items Consumer Price Index and the Compensation Cost Index. The selected annual change is +2.2% based on analysis and review of the index data, which are displayed on pages D-20-21.

10. Trend Periods

The effective date assumed in this filing is September 1, 2021[1] for new and renewal policies. Given this effective date, the trend periods for premiums, losses and expenses are as follows:

- premiums are trended from January 1 of the given year to March 1, 2022.
- losses are trended from July 1 of the given year to September 1, 2022.
- general expense and other acquisition expense percentages, since they are based on 2017-2019 data, are trended from July 1, 2018 to March 1, 2022.
- loss adjustment expense percentages, since they are based on 2015-2019 data, are trended from July 1, 2017 to September 1, 2022.

11. Expected Loss and Fixed Expense Ratio

These quantities represent the portion of the premium income available for losses, loss adjustment expenses, general expenses and other acquisition expenses. They are determined from special calls for North Carolina expense experience and reflect the 2017, 2018, and 2019 results as reported by all companies licensed in North Carolina during those years. The breakdown of the expected loss and fixed expense ratios is set forth on page D-22 for Fire and page D-25 for Extended Coverage.

[1] The effective date of implementation of these rates may differ from the trend effective date.

12. Net Cost of Reinsurance per Policy

The provision for the net cost of reinsurance is based on an analysis provided by Aon. This analysis generates the total dollars required by territory based on latest-year house years. The conversion to the required base-class level is shown on page D-80. (See testimony of S. Fiete.)

Class Rate Level Exhibits - Fire and Extended Coverage (pages C-7 and C-8)

1. Trended Adjusted Incurred Losses (column 1)

Incurred losses for the latest five years, trended and loaded for LAE. For Extended Coverage, the excess loss procedure is incorporated into the indication through column (21).

2. Trended Average Rating Factor (column 3)

The calculation of the Trended Average Rating Factors is shown on pages D-32-41 for Fire and D-63-72 for Extended Coverage.

3. Credibility (column 5)

The five-year loss cost by class is assigned a credibility value based on the number of house years underlying this loss cost. The standard for full credibility is 500,000 house years for Fire and 330,000 house years for Extended Coverage, with partial credibility equal to

$$\sqrt{\text{five year house years / full credibility standard}}$$

truncated to the nearest tenth. The complement of credibility is assigned to the statewide five-year base loss cost adjusted by the ratio of the class' current base rate and the statewide average current base rate.

4. Modeled Base Class Loss Cost (column 7 - Extended Coverage)

The modeled hurricane base-class loss cost is derived by dividing the modeled hurricane losses by the product of the latest-year trended average rating factor and latest-year house-years.

5. Indicated Base Class Loss Cost (column 7 - Fire, column 9 - Extended Coverage)

The indicated base-class loss cost by class is the statewide base-class loss cost (computed on the statewide indications pages) adjusted by the class relativity indicated by the credibility-weighted loss cost (ratio of class to statewide of column 6 for Fire or column 8 for Extended Coverage).

6. Indicated Net Base Class Rate (column 10 - Fire, column 12 - Extended Coverage)

The indicated net base-class rate is the sum of the loss cost and fixed expense divided by the expected loss and fixed expense ratio derived on page D-22 for Fire and page D-25 for Extended Coverage. The fixed expense is calculated as the average current base-class rate multiplied by the fixed expense ratio developed on page D-28.

7. Compensation for Assessment Risk per Policy (column 11 - Fire, column 13 - Extended Coverage)

   The compensation for assessment risk is reflected as a percentage of the base-class rate by class and is loaded for the effects of taxes and commission. (See testimony of P. Anderson.)

8. Net Cost of Reinsurance per Policy (column 14 - Extended Coverage)

   The net cost of reinsurance was allocated to class in proportion to modeled hurricane losses.

9. Indicated Base Class Rate Change (column 17 - Fire, column 20 - Extended Coverage)

   The indicated base-class rate level change is the ratio of required base-class rate and current base-class rate, minus 1.

10. Indicated Rate Change Balanced to Statewide (column 18 - Fire, column 21 - Extended Coverage)

    These are indicated base-class rate level changes adjusted to balance to the statewide indicated change.

Territory Rate Level Exhibits - Fire (pages C-9-10)

1. Latest-Year Earned Premium at Current Level (column 1)

   Earned premium for the latest year (2018), adjusted to the manual rate level currently in effect.

2. Five-Year Experience Base Class Loss Cost (column 3)

   A five-year experience base-class loss cost by territory is derived by dividing five-year trended territory losses by the product of the five-year trended average rating factor and five-year house years. The experience base-class loss costs are then loaded for LAE. This calculation is shown on pages D-42-46.

3. Credibility (column 5)

   The five-year loss cost is assigned a credibility value based upon the number of house years underlying this loss cost. The standard for full credibility is 500,000 house years, with partial credibility equal to

   $$\sqrt{\text{five year house years / full credibility standard}}$$

   truncated to the nearest tenth. The complement of credibility is assigned to the statewide five-year experience base-class loss cost adjusted by the ratio of the territory's current base-class rate and the statewide average current base-class rate.

4. Indicated Base Class Loss Cost (column 8)

   The Indicated Base Class loss cost for each territory is the indicated statewide base-class loss cost (row 9 from the statewide indication) multiplied by each territory's indicated relativity (column 7).

5. Trended Fixed Expense per Policy (column 9)

   The trended fixed expense per policy by territory is calculated by first distributing the statewide trended fixed expense ratio to territory. This is accomplished by multiplying the statewide trended fixed expense ratio by the ratio of the statewide latest-year average rate to the territory latest-year average rate. Finally, the trended fixed expense per policy by territory is calculated as the product of the territory trended fixed expense ratio and the latest-year average territory base rate. This calculation can be found on page D-29.

6. Expected Loss and Fixed Expense Ratio (column 11)

   These quantities represent the portion of the premium income available for losses, loss adjustment expenses, general expenses and other acquisition expenses.

7. Compensation for Assessment Risk Cost per Policy (column 13)

   The compensation for assessment risk is reflected as a percentage of the base-class rate by class and is loaded for the effects of taxes and commission. (See testimony of P. Anderson.)

8. Indicated Rate Level Change (column 18)

   The indicated rate level change is the ratio of required base-class rate and current base-class rate, minus 1.

9. Indicated Rate Level Change Balanced to Statewide (column 19)

   These are indicated base-class rate level changes adjusted to balance to the statewide indicated change.

10. Indicated Buildings Rate Level Change (column 20)

    The indicated buildings rate level change is the product of the indicated rate level change balanced to statewide and the class relativity embedded in the indicated buildings base rate change balanced to statewide (column 18) on the class indications page.

11. Indicated Contents Rate Level Change (column 21)

    The indicated contents rate level change is the product of the indicated rate level change balanced to statewide and the class relativity embedded in the indicated contents base rate change balanced to statewide (column 18) on the class indications page.

Territory Rate Level Exhibits - Extended Coverage (pages C-11-12)

1. Latest-Year Earned Premium at Current Level (column 1)

   Earned premium for the latest year (2018), adjusted to the manual rate level currently in effect.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

EXPLANATORY MEMORANDUM

2. Five-Year Non-Hurricane Experience Base Class Loss Cost (column 3)

   A five-year experience base-class loss cost by territory is derived by dividing five-year trended territory losses by the product of the five-year trended average rating factor and five-year house years. The territory losses exclude hurricane losses and include an excess loss provision. The experience base-class loss costs are then loaded for LAE. This calculation is shown on pages D-73-78.

3. Credibility (column 5)

   The five-year loss cost is assigned a credibility value based upon the number of house years underlying this loss cost. The standard for full credibility is 330,000 house years, with partial credibility equal to

   $$\sqrt{\text{five year house years / full credibility standard}}$$

   truncated to the nearest tenth. The complement of credibility is assigned to the statewide five-year non-modeled experience base-class loss cost.

4. Modeled Hurricane Base Class Loss Cost (column 7)

   The modeled hurricane base-class loss cost is derived by dividing modeled hurricane territory losses by the product of the trended average rating factor and house years for the latest year. The development of these costs is presented on page D-79.

5. Indicated Base Class Loss Cost (column 10)

   The Indicated Base Class loss cost for each territory is the indicated statewide base-class loss cost (row 13 from the statewide indication) multiplied by each territory's indicated relativity (column 9).

6. Trended Fixed Expense per Policy (column 11)

   The trended fixed expense per policy by territory is calculated by first distributing the statewide trended fixed expense ratio to territory. This is accomplished by multiplying the statewide trended fixed expense ratio by the ratio of the statewide latest-year average rate to the territory latest-year average rate. Finally, the trended fixed expense per policy by territory is calculated as the product of the territory trended fixed expense ratio and the latest-year average territory base rate. This calculation can be found on page D-30.

7. Expected Loss and Fixed Expense Ratio (column 13)

   These quantities represent the portion of the premium income available for losses, loss adjustment expenses, general expenses and other acquisition expenses.

8. Compensation for Assessment Risk Cost per Policy (column 15)

   The compensation for assessment risk is reflected as a percentage of the base-class rate by class and is loaded for the effects of taxes and commission. (See testimony of P. Anderson.)

9. Net Cost of Reinsurance per Policy (column 16)

   The provisions for the net cost of reinsurance are based on analysis provided by Aon. This analysis generates the total dollars required by policy form to cover the cost of the expense and profit components of the reinsurance premium paid by the primary insurers. The development of these provisions is presented on page D-80. (See testimony of S. Fiete.)

10. Indicated Rate Level Change (column 21)

    The indicated rate level change is the ratio of required base-class rate and current base-class rate, minus 1.

11. Indicated Rate Level Change Balanced to Statewide (column 22)

    These are indicated base-class rate level changes adjusted to balance to the statewide indicated change.

12. Indicated Buildings Rate Level Change (column 23)

    The indicated buildings rate level change is the product of the indicated rate level change balanced to statewide and the class relativity embedded in the indicated buildings base rate change balanced to statewide (column 21) on the class indications page.

13. Indicated Contents Rate Level Change (column 24)

    The indicated contents rate level change is the product of the indicated rate level change balanced to statewide and the class relativity embedded in the indicated contents base rate change balanced to statewide (column 21) on the class indications page.

Credibility Factor Determination

Credibility considerations enter into the dwelling insurance ratemaking formulas.

The credibility procedure is based on the 'frequency with severity modification' model discussed in "Credibility of the Pure Premium" by Mayerson, Bowers and Jones. The full credibility standard is based on a normal distribution with a 90% probability of meeting the test and a 10% maximum departure from the expected value, translated to house year standards. Partial credibility (Z_p) is calculated as follows:

$$Z_p = \sqrt{\text{five year house years / full credibility standard}}$$ (truncated to the nearest tenth)

The full credibility standards are 500,000 house years for Fire and 330,000 house years for Extended Coverage.

On a statewide and class basis, both Fire and Extended Coverage are fully credible. On a territory basis, partial credibility may be employed. In that case, the calculation of the rate level indication incorporates credibility as follows: credibility is applied to the five-year (non-hurricane for Extended Coverage) territory loss costs and (1 - credibility) to the complement of credibility.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSS DEVELOPMENT
FIRE

Incurred Losses as of:

Accident Year	15 Months	27 Months	39 Months	51 Months	63 Months	75 Months	87 Months
2007	9,603,370	9,405,033	9,376,609	9,325,026	9,325,026	9,324,962	9,324,882
2008	11,186,111	11,143,883	11,087,871	11,054,090	11,051,547	11,051,822	11,051,613
2009	9,419,535	9,061,401	9,016,364	8,991,440	8,991,440	8,991,440	8,991,440
2010	10,420,030	10,153,918	10,237,813	10,241,149	10,239,999	10,239,999	10,240,019
2011	9,620,090	9,375,148	9,370,232	9,404,063	9,404,063	9,404,063	9,404,063
2012	10,243,577	9,858,584	9,630,358	9,629,068	9,629,067	9,629,067	9,629,067
2013	9,609,120	9,287,968	9,335,943	9,308,667	9,322,871	9,322,871	
2014	8,089,647	7,908,076	7,900,208	7,902,976	7,902,976		
2015	8,601,845	8,353,236	8,394,173	8,250,551			
2016	11,369,713	11,126,313	11,019,047				
2017	9,824,122	9,174,580					
2018	9,667,847						

Link Ratios

Accident Year	27:15	39:27	51:39	63:51	75:63	87:75
2007	0.979	0.997	0.994	1.000	1.000	1.000
2008	0.996	0.995	0.997	1.000	1.000	1.000
2009	0.962	0.995	0.997	1.000	1.000	1.000
2010	0.974	1.008	1.000	1.000	1.000	1.000
2011	0.975	0.999	1.004	1.000	1.000	1.000
2012	0.962	0.977	1.000	1.000	1.000	1.000
2013	0.967	1.005	0.997	1.002	1.000	
2014	0.978	0.999	1.000	1.000		
2015	0.971	1.005	0.983			
2016	0.979	0.990				
2017	0.934					
	27:15	39:27	51:39	63:51	75:63	87:75
Average	0.971	0.997	0.997	1.000	1.000	1.000
Selected Link Ratio	0.971	0.997	0.997	1.000	1.000	1.000

Selected Loss Development Factors

Fire	2014	2015	2016	2017	2018
	1.000	1.000	0.997	0.994	0.965

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSS DEVELOPMENT
EXTENDED COVERAGE

Accident Year	Incurred Losses as of: 15 Months	27 Months	39 Months	51 Months	63 Months	75 Months	87 Months
2007	5,542,190	5,578,997	5,580,859	5,584,553	5,584,553	5,580,798	5,581,417
2008	9,936,797	10,247,436	10,311,726	10,314,285	10,351,484	10,350,401	10,350,401
2009	9,860,426	10,053,769	9,992,757	9,969,052	9,973,115	9,973,305	9,973,305
2010	12,239,859	12,291,029	12,384,093	12,386,590	12,381,180	12,378,680	12,381,601
2011	43,536,177	43,636,842	43,637,532	43,676,294	43,676,341	43,676,341	43,680,178
2012	15,664,787	16,589,119	16,742,307	16,779,445	16,782,538	16,786,166	16,786,166
2013	13,993,956	14,220,315	14,281,750	14,302,074	14,316,431	14,316,431	
2014	17,775,294	18,171,326	18,301,840	18,312,227	18,312,788		
2015	18,015,460	18,326,174	18,396,478	18,394,540			
2016	27,659,788	29,199,593	29,357,310				
2017	20,703,412	21,383,477					
2018	56,965,392						

Accident Year	Link Ratios 27:15	39:27	51:39	63:51	75:63	87:75
2007	1.007	1.000	1.001	1.000	0.999	1.000
2008	1.031	1.006	1.000	1.004	1.000	1.000
2009	1.020	0.994	0.998	1.000	1.000	1.000
2010	1.004	1.008	1.000	1.000	1.000	1.000
2011	1.002	1.000	1.001	1.000	1.000	1.000
2012	1.059	1.009	1.002	1.000	1.000	1.000
2013	1.016	1.004	1.001	1.001	1.000	
2014	1.022	1.007	1.001	1.000		
2015	1.017	1.004	1.000			
2016	1.056	1.005				
2017	1.033					
	27:15	39:27	51:39	63:51	75:63	87:75
Average	1.024	1.004	1.000	1.001	1.000	1.000
Selected Link Ratio	1.024	1.004	1.000	1.001	1.000	1.000

EC	Selected Loss Development Factors 2014	2015	2016	2017	2018
	1.000	1.001	1.001	1.005	1.029

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

FREQUENCY, SEVERITY, AND PURE PREMIUM RATES OF CHANGE
FIRE

Year	Frequency	Severity	Pure Premium
2014	0.33%	19,432	63.92
2015	0.33%	19,070	62.84
2016	0.33%	21,987	73.38
2017	0.31%	19,507	59.74
2018	0.30%	21,785	65.94
Annual Rate of Change			
5-Year Average (2014 - 2018)	-2.4%	+2.5%	+0.1%
4-Year Average (2015 - 2018)	-3.3%	+2.8%	-0.6%
3-Year Average (2016 - 2018)	-4.8%	-0.5%	-5.2%
Selected Annual Rate of Change			
Historical Time Period	**-3.0%**	**+2.0%**	**-1.0%**
Prospective Time Period	**0.0%**	**0.0%**	**0.0%**

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

FREQUENCY, SEVERITY, AND PURE PREMIUM RATES OF CHANGE
EXTENDED COVERAGE

FREQUENCY

Year	Wind	Water	Other Physical Damage	V&MM	Non-Wind	Total
2014	0.63%	0.34%	0.29%	0.04%	0.68%	1.31%
2015	0.56%	0.37%	0.21%	0.05%	0.63%	1.20%
2016	0.82%	0.29%	0.23%	0.03%	0.55%	1.36%
2017	0.76%	0.31%	0.21%	0.03%	0.55%	1.31%
2018	0.71%	0.37%	0.23%	0.03%	0.63%	1.35%
Annual Rate of Change						
5-Year Average (2014 - 2018)	+5.6%	-0.4%	-4.2%	-12.2%	-2.7%	+1.5%
4-Year Average (2015 - 2018)	+6.5%	+0.6%	+2.2%	-13.2%	+0.2%	+3.2%
3-Year Average (2016 - 2018)	-6.7%	+12.6%	+1.5%	+2.9%	+7.6%	-0.7%
Selected Annual Rate of Change						
Historical Time Period						**0.0%**
Prospective Time Period						**+2.0%**

SEVERITY

Year	Wind	Water	Other Physical Damage	V&MM	Non-Wind	Total
2014	4,668	7,709	5,465	4,771	6,558	5,648
2015	4,727	8,050	5,760	5,241	7,058	5,958
2016	4,773	7,408	5,320	5,489	6,437	5,440
2017	5,730	8,983	6,455	4,776	7,797	6,598
2018	6,434	9,982	6,923	5,892	8,649	7,477
Annual Rate of Change						
5-Year Average (2014 - 2018)	+8.7%	+6.5%	+6.0%	+3.3%	+6.7%	+6.9%
4-Year Average (2015 - 2018)	+11.7%	+8.7%	+7.7%	+2.1%	+8.3%	+9.1%
3-Year Average (2016 - 2018)	+16.1%	+16.1%	+14.1%	+3.6%	+15.9%	+17.2%
Selected Annual Rate of Change						
Historical Time Period						**+5.0%**
Prospective Time Period						**+7.0%**

PURE PREMIUM

Year	Wind	Water	Other Physical Damage	V&MM	Non-Wind	Total
2014	29.45	26.55	15.85	2.12	44.52	73.97
2015	26.68	29.67	12.32	2.54	44.53	71.21
2016	39.00	21.48	12.08	1.61	35.18	74.18
2017	43.70	27.90	13.84	1.28	43.02	86.72
2018	45.82	36.73	16.21	1.84	54.77	100.58
Annual Rate of Change						
5-Year Average (2014 - 2018)	+14.8%	+6.1%	+1.6%	-9.3%	+3.9%	+8.5%
4-Year Average (2015 - 2018)	+19.0%	+9.4%	+10.1%	-11.4%	+8.6%	+12.7%
3-Year Average (2016 - 2018)	+8.4%	+30.7%	+15.8%	+6.6%	+24.8%	+16.4%
Selected Annual Rate of Change						
Historical Time Period						**+5.0%**
Prospective Time Period						**+9.0%**

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF LOSS TREND FACTORS

FIRE

(1) Year	(2) Average Date of Occurrence [a]	(3) Number of Years of Historical Loss Trend [b]	(4) Historical Annual Loss Trend	(5) Number of Years of Prospective Loss Trend [c]	(6) Prospective Annual Loss Trend	(7) Loss Trend Factors [d]
2014	7/1/2014	4.00	-1.0%	4.17	0.0%	0.961
2015	7/1/2015	3.00	-1.0%	4.17	0.0%	0.970
2016	7/1/2016	2.00	-1.0%	4.17	0.0%	0.980
2017	7/1/2017	1.00	-1.0%	4.17	0.0%	0.990
2018	7/1/2018	0.00	-1.0%	4.17	0.0%	1.000

EXTENDED COVERAGE

(1) Year	(2) Average Date of Occurrence [a]	(3) Number of Years of Historical Loss Trend [b]	(4) Historical Annual Loss Trend	(5) Number of Years of Prospective Loss Trend [c]	(6) Prospective Annual Loss Trend	(7) Loss Trend Factors [d]
2014	7/1/2014	4.00	+5.0%	4.17	+9.0%	1.741
2015	7/1/2015	3.00	+5.0%	4.17	+9.0%	1.658
2016	7/1/2016	2.00	+5.0%	4.17	+9.0%	1.579
2017	7/1/2017	1.00	+5.0%	4.17	+9.0%	1.504
2018	7/1/2018	0.00	+5.0%	4.17	+9.0%	1.432

[a] Average date of occurrence for the accident year shown in Column (1).
[b] Number of years between Column (2) and 7/1/2018, the average date of occurrence for the latest year.
[c] Number of years between 7/1/2018 and 9/1/2022, one year beyond the assumed effective date of 9/1/2021.
[d] Column (7) = [1 + (4)]^(3) × [1 + (6)]^(5)

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

AVERAGE POLICY SIZE RELATIVITY ANNUAL RATE OF CHANGE

FIRE

	Average Policy Size Relativity	
Year	Buildings	Contents
2014	4.968	2.123
2015	5.071	2.204
2016	5.109	2.236
2017	5.154	2.268
2018	5.209	2.306
Fitted Annual Rate of Change	+1.1%	+2.0%
Selected Annual Rate of Change	+1.1%	+2.0%

EXTENDED COVERAGE

	Average Policy Size Relativity	
Year	Buildings	Contents
2014	5.877	2.453
2015	6.017	2.561
2016	6.084	2.637
2017	6.159	2.694
2018	6.245	2.753
Fitted Annual Rate of Change	+1.5%	+2.9%
Selected Annual Rate of Change	+1.5%	+2.9%

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF PREMIUM TREND FACTORS

FIRE

(1) Year	(2) Average Policy Size Relativity	(3) Current Amount Factor [a]	(4) Number of Years of Prospective Premium Trend [b]	(5) Prospective Annual Premium Trend	(6) Premium Trend Factors [c][d]	(7) Latest-Year Premium Distribution
Buildings						
2014	4.968	1.049	4.17	+1.1%	1.098	0.9280
2015	5.071	1.027	4.17	+1.1%	1.075	0.9280
2016	5.109	1.020	4.17	+1.1%	1.068	0.9280
2017	5.154	1.011	4.17	+1.1%	1.058	0.9280
2018	5.209	1.000	4.17	+1.1%	1.047	0.9280
Contents						
2014	2.123	1.086	4.17	+2.0%	1.179	0.0720
2015	2.204	1.046	4.17	+2.0%	1.136	0.0720
2016	2.236	1.031	4.17	+2.0%	1.120	0.0720
2017	2.268	1.017	4.17	+2.0%	1.104	0.0720
2018	2.306	1.000	4.17	+2.0%	1.086	0.0720
Total						
2014					1.104	
2015					1.079	
2016					1.071	
2017					1.061	
2018					1.049	

EXTENDED COVERAGE

(1) Year	(2) Average Policy Size Relativity	(3) Current Amount Factor [a]	(4) Number of Years of Prospective Premium Trend [b]	(5) Prospective Annual Premium Trend	(6) Premium Trend Factors [c][d]	(7) Latest-Year Premium Distribution
Buildings						
2014	5.877	1.063	4.17	+1.5%	1.131	0.9702
2015	6.017	1.038	4.17	+1.5%	1.104	0.9702
2016	6.084	1.026	4.17	+1.5%	1.092	0.9702
2017	6.159	1.014	4.17	+1.5%	1.079	0.9702
2018	6.245	1.000	4.17	+1.5%	1.064	0.9702
Contents						
2014	2.453	1.122	4.17	+2.9%	1.264	0.0298
2015	2.561	1.075	4.17	+2.9%	1.211	0.0298
2016	2.637	1.044	4.17	+2.9%	1.176	0.0298
2017	2.694	1.022	4.17	+2.9%	1.151	0.0298
2018	2.753	1.000	4.17	+2.9%	1.126	0.0298
Total						
2014					1.135	
2015					1.108	
2016					1.094	
2017					1.081	
2018					1.066	

[a] Column (3) = Latest Year Column (2) / Column (2)

[b] Number of years between 1/1/2018 and 3/1/2022, six months beyond the assumed effective date of 9/1/2021.

[c] Column (6) = (3) × [1 + (5)]^(4)

[d] Total Column (6) = [Buildings (6) × Buildings (7)] + [Contents (6) × Contents (7)]

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF EXPOSURE TREND
EXTENDED COVERAGE

	Average Exposure Per Policy	
Year	Buildings (Coverage A)	Contents (Coverage C)
2014	112,022	14,675
2015	114,780	15,293
2016	116,099	15,757
2017	117,564	16,080
2018	119,272	16,422
Annual Rate of Change		
5-Year Average (2014 - 2018)	+1.5%	+2.8%
4-Year Average (2015 - 2018)	+1.3%	+2.4%
3-Year Average (2016 - 2018)	+1.4%	+2.1%
Selected Annual Rate of Change	**+1.2%**	**+2.2%**

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DETERMINATION OF TREND FOR EXPENSES

Month	All Items CPI Index [a]	All Items (Less Energy) CPI Index [b]	Compensation Cost Index [c]
Jan-16	236.9	244.5	
Feb-16	237.1	245.5	126.9
Mar-16	238.1	245.9	
Apr-16	239.3	246.5	
May-16	240.2	246.9	128.2
Jun-16	241.0	247.1	
Jul-16	240.6	247.0	
Aug-16	240.8	247.5	129.5
Sep-16	241.4	247.9	
Oct-16	241.7	248.4	
Nov-16	241.4	248.3	129.5
Dec-16	241.4	248.2	
Jan-17	242.8	249.1	
Feb-17	243.6	250.1	130.8
Mar-17	243.8	250.3	
Apr-17	244.5	250.7	
May-17	244.7	250.9	132.8
Jun-17	245.0	251.0	
Jul-17	244.8	251.0	
Aug-17	245.5	251.5	132.5
Sep-17	246.8	252.0	
Oct-17	246.7	252.6	
Nov-17	246.7	252.4	132.6
Dec-17	246.5	252.5	
Jan-18	247.9	253.6	
Feb-18	249.0	254.6	134.1
Mar-18	249.6	255.3	
Apr-18	250.5	255.8	
May-18	251.6	256.1	136.3
Jun-18	252.0	256.3	
Jul-18	252.0	256.5	
Aug-18	252.1	256.7	135.9
Sep-18	252.4	257.1	
Oct-18	252.9	257.7	
Nov-18	252.0	257.7	135.7
Dec-18	251.2	257.8	
Jan-19	251.7	258.9	
Feb-19	252.8	259.8	137.8
Mar-19	254.2	260.5	
Apr-19	255.5	260.9	
May-19	256.1	261.2	139.1
Jun-19	256.1	261.7	
Jul-19	256.6	262.1	
Aug-19	256.6	262.6	139.6
Sep-19	256.8	263.0	
Oct-19	257.3	263.5	
Nov-19	257.2	263.5	139.6
Dec-19	257.0	263.5	

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DETERMINATION OF TREND FOR EXPENSES

	All Items CPI Index [a]	All Items (Less Energy) CPI Index [b]	Compensation Cost Index [c]	Combined [d]
(1) Annual Change in indices based on exponential curve of best fit for the latest 48 points (or 16 quarters)	2.15%	1.94%	2.59%	2.32%
(2) Annual Change in indices based on exponential curve of best fit for the latest 36 points (or 12 quarters)	2.10%	2.04%	2.45%	2.26%
(3) Annual Change in indices based on exponential curve of best fit for the latest 24 points (or 8 quarters)	1.83%	2.06%	2.34%	2.14%
(4) Annual Change in indices based on exponential curve of best fit for the latest 12 points (or 4 quarters)	2.13%	1.94%	1.72%	1.88%

(5) Average Annual Index [e]

Year Ended	All Items CPI Index [a]	All Items (Less Energy) CPI Index [b]	Compensation Cost Index [c]
06/30/2017	242.6	249.1	130.7
12/31/2017	245.1	251.2	132.2
06/30/2018	248.1	253.6	133.9
12/31/2018	251.1	256.3	135.5
06/30/2019	253.3	258.9	137.1
12/31/2019	255.7	261.8	139.0

(6) Current Cost Factor (Latest Index Value Divided by Average Annual Index)

Year Ended	All Items CPI Index [a]	All Items (Less Energy) CPI Index [b]	Compensation Cost Index [c]	Combined [d]
06/30/2017	1.059	1.058	1.069	1.064
12/31/2017	1.048	1.049	1.056	1.052
06/30/2018	1.036	1.039	1.043	1.040
12/31/2018	1.023	1.028	1.030	1.028
06/30/2019	1.015	1.018	1.018	1.017
12/31/2019	1.005	1.007	1.004	1.005

(7) Selected Annual Change = +2.2% (based on Comp. Cost Index and CPI with and without energy)

[a] CPI - All Urban Consumers - All Items. Source: Bureau of Labor Statistics (Series ID: CUUR0000SA0).

[b] CPI - All Urban Consumers - All Items Less Energy. Source: Bureau of Labor Statistics (Series ID: CUUR0000SA0LE).

[c] Total Compensation Cost Index - Insurance Carriers, Agent Brokers, and Service. Source: Bureau of Labor Statistics (Series ID: CIU2015240000000I).

[d] Weighted average determined as .25 (All Items) + .25 (All Items - Less Energy) + .50 (CCI).

[e] Average year ended index for period shown.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

EXPENSE, DIVIDENDS, PROFIT AND CONTINGENCIES
FIRE

	2015	2016	2017	2018	2019	3-Year Average	Selected
Commission and Brokerage	5,604,994	5,256,786	5,305,706	5,078,242	4,411,114		
Written Premium Including Deviations	49,249,492	49,448,623	49,021,465	47,007,135	36,103,745		
Ratio	0.114	0.106	0.108	0.108	0.122	0.113	0.113
Other Acquisition Expense	3,288,017	3,433,552	3,661,942	3,613,525	2,940,990		
Earned Premium at Current Manual Level [(a)]	39,723,826	40,334,416	38,420,882	38,310,509	35,847,697		
Ratio	0.083	0.085	0.095	0.094	0.082	0.090	0.090
General Expense	2,288,922	2,333,769	2,302,910	2,043,207	1,816,090		
Earned Premium at Current Manual Level [(a)]	39,723,826	40,334,416	38,420,882	38,310,509	35,847,697		
Ratio	0.058	0.058	0.060	0.053	0.051	0.055	0.055
Taxes, Licenses and Fees	1,448,544	1,403,800	1,347,953	1,259,356	1,025,159		
Written Premium Including Deviations	49,249,492	49,448,623	49,021,465	47,007,135	36,103,745		
Ratio	0.029	0.028	0.027	0.027	0.028	0.027	0.027

Fire (AS Line 1) Data	2015	2016	2017	2018	2019	5-Year Average	Selected
Direct Written Premium (Statutory Page 14)	225,034,361	227,432,348	210,227,630	222,876,329	231,818,710		
Total Dividends	1,052,727	942,866	1,025,053	1,137,689	1,456,325		
Ratio of Dividends to Direct Written Premium	0.5%	0.4%	0.5%	0.5%	0.6%	0.5%	0.5%

Expected Loss and Fixed Expense Ratio

Commission and Brokerage	11.3%
Taxes, Licenses and Fees	2.7%
Dividends	0.5%
Contingencies	1.0%
Profit	8.5%
Total	24.0%
1 - Variable Expense	76.0%

[(a)] The calculation of the on-leveling factors used to adjust the Earned Premium to the current manual level is found on page D-23.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF EARNED PREMIUM AT CURRENT MANUAL LEVEL
FIRE

(A) Calculation of On-leveling Factors

Rate Filing Effective Date	Implemented Overall Rate Change	Cumulative Overall Rate Change	Portion of Earned Premium Based on Implemented Rates 2015	2016	2017	2018	2019
5/1/2012	0.927	0.927					
4/1/2013	1.000	0.927	0.0313				
4/1/2014	1.000	0.927	0.6875	0.0313			
4/1/2015	1.000	0.927	0.2813	0.9688	1.0000	1.0000	0.5799
2/1/2019	0.792	0.734					0.4201
7/1/2020	1.000	0.734					
Average Cumulative Rate Change			0.9270	0.9270	0.9270	0.9270	0.8459
On-leveling Factor [(a)]			0.7918	0.7918	0.7918	0.7918	0.8677

(B) Calculation of Earned Premium at Current Level

	2015	2016	2017	2018	2019
(1) Earned Premium Excluding Deviations	50,168,919	50,940,060	48,523,376	48,383,981	41,313,406
(2) On-leveling Factor	0.7918	0.7918	0.7918	0.7918	0.8677
(3) Earned Premium at Current Manual Level [(b)]	39,723,826	40,334,416	38,420,882	38,310,509	35,847,697

[(a)] The On-leveling Factor is calculated as the Total Cumulative Overall Rate Change divided by the Average Cumulative Rate Change for the accident year.

[(b)] (3) = (1) x (2)

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSS ADJUSTMENT EXPENSE
FIRE

	2015	2016	2017	2018	2019	5-Year Average
Allocated LAE	-18,056	347,819	119,012	286,556	135,670	
Unallocated LAE	1,441,438	1,785,761	1,304,713	1,156,488	1,298,001	
Total LAE	1,423,382	2,133,580	1,423,725	1,443,044	1,433,671	
Incurred Losses	16,344,009	24,378,203	15,419,622	20,790,454	16,757,376	
Ratio: LAE/I.L.	0.087	0.088	0.092	0.069	0.086	0.084

Selected LAE Ratio [(a)]: 0.087

[(a)] The selection of 0.087 is based on the average LAE ratio excluding the high and low years (2017 and 2018).

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

EXPENSE, DIVIDENDS, PROFIT AND CONTINGENCIES
EXTENDED COVERAGE

	2015	2016	2017	2018	2019	3-Year Average	Selected
Commission and Brokerage	6,344,348	6,425,057	5,517,605	5,513,146	6,948,268		
Written Premium Including Deviations	66,181,393	67,210,898	59,674,255	61,689,897	74,822,388		
Ratio	0.096	0.096	0.092	0.089	0.093	0.091	0.091
Other Acquisition Expense	4,724,555	4,877,455	4,772,787	5,111,239	6,641,840		
Earned Premium at Current Manual Level [(a)]	86,583,926	89,022,586	77,932,106	75,337,572	77,081,577		
Ratio	0.055	0.055	0.061	0.068	0.086	0.072	0.072
General Expense	2,920,093	2,913,560	2,753,309	2,826,058	3,754,681		
Earned Premium at Current Manual Level [(a)]	86,583,926	89,022,586	77,932,106	75,337,572	77,081,577		
Ratio	0.034	0.033	0.035	0.038	0.049	0.041	0.041
Taxes, Licenses and Fees	1,817,583	1,815,109	1,596,397	1,473,951	1,931,649		
Written Premium Including Deviations	66,181,393	67,210,898	59,674,255	61,689,897	74,822,388		
Ratio	0.027	0.027	0.027	0.024	0.026	0.026	0.026

Allied Lines (AS Line 2) Data	2015	2016	2017	2018	2019	5-Year Average	Selected
Direct Written Premium (Statutory Page 14)	232,852,899	251,274,419	247,355,349	268,843,429	305,629,907		
Total Dividends	1,973,389	1,972,015	2,076,235	1,981,600	2,575,133		
Ratio of Dividends to Direct Written Premium	0.8%	0.8%	0.8%	0.7%	0.8%	0.8%	0.8%

Expected Loss and Fixed Expense Ratio

Commission and Brokerage	9.1%
Taxes, Licenses and Fees	2.6%
Dividends	0.8%
Contingencies	1.0%
Profit	8.5%
Total	22.0%
1 - Variable Expense	78.0%

[(a)] The calculation of the on-leveling factors used to adjust the Earned Premium to the current manual level is found on page D-26.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF EARNED PREMIUM AT CURRENT MANUAL LEVEL
EXTENDED COVERAGE

(A) Calculation of On-leveling Factors

Rate Filing Effective Date	Implemented Overall Rate Change	Cumulative Overall Rate Change	Portion of Earned Premium Based on Implemented Rates 2015	2016	2017	2018	2019
5/1/2012	1.000	1.000					
4/1/2013	1.114	1.114	0.0313				
4/1/2014	1.083	1.206	0.6875	0.0313			
4/1/2015	1.034	1.247	0.2813	0.9688	1.0000	1.0000	0.5799
2/1/2019	1.187	1.481					0.4201
7/1/2020	1.053	1.559					
Average Cumulative Rate Change			1.2147	1.2457	1.2470	1.2470	1.3453
On-leveling Factor [(a)]			1.2835	1.2515	1.2502	1.2502	1.1588

(B) Calculation of Earned Premium at Current Level

	2015	2016	2017	2018	2019
(1) Earned Premium Excluding Deviations	67,459,722	71,133,486	62,335,687	60,260,393	66,516,234
(2) On-leveling Factor	1.2835	1.2515	1.2502	1.2502	1.1588
(3) Earned Premium at Current Manual Level [(b)]	86,583,926	89,022,586	77,932,106	75,337,572	77,081,577

[(a)] The On-leveling Factor is calculated as the Total Cumulative Overall Rate Change divided by the Average Cumulative Rate Change for the accident year.

[(b)] (3) = (1) x (2)

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSS ADJUSTMENT EXPENSE
EXTENDED COVERAGE

	2015	2016	2017	2018	2019	5-Year Average
Allocated LAE	187,738	386,211	258,772	869,932	218,089	
Unallocated LAE	3,639,097	5,228,606	4,414,708	9,264,936	3,932,717	
Total LAE	3,826,835	5,614,817	4,673,480	10,134,868	4,150,806	
Incurred Losses	31,430,172	50,486,998	36,329,762	98,254,049	36,968,335	
Ratio: LAE/I.L.	0.122	0.111	0.129	0.103	0.112	0.115

Selected LAE Ratio [(a)]: 0.115

[(a)] The selection of 0.115 is based on the average LAE ratio excluding the high and low years (2017 and 2018).

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED EXPENSE PROVISIONS

(1) Factor to trend losses based on annual rate of change:

Fire:		=	0.990
EC:		=	1.504

(2) Factor to trend LAE based on Current Expense Index:

Fire:	1.022 (62 / 12)	=	1.119
EC:	1.022 (62 / 12)	=	1.119

(3) Factor to trend premium based on growth in premium revenue:

Fire:		=	1.049
EC:		=	1.066

(4) Factor to trend expense based on Current Expense Index:

Fire:	1.022 (44 / 12)	=	1.083
EC:	1.022 (44 / 12)	=	1.083

(5) Trended Expenses

Fire:

Trended LAE Factor:	1 + (0.087 * 1.119 / 0.990)	=	1.098
Trended GE Ratio:	0.055 * 1.083 / 1.049	=	0.057
Trended OA Ratio:	0.090 * 1.083 / 1.049	=	0.093
Statewide Latest Year Current Base Rate		=	25.88
Fixed Expense Per Policy		=	3.88

EC:

Trended LAE Factor:	1 + (0.115 * 1.119 / 1.504)	=	1.086
Trended GE Ratio:	0.041 * 1.083 / 1.066	=	0.042
Trended OA Ratio:	0.072 * 1.083 / 1.066	=	0.073
Statewide Latest Year Current Base Rate		=	47.99
Fixed Expense Per Policy		=	5.52

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DERIVATION OF TERRITORY FIXED EXPENSE PER POLICY
FIRE

Territory	(1) Latest-Year Aggregate Calculated Earned Premium at Current Level	(2) Latest-Year Earned House Years	(3) Statewide Average Relativity to Territory ={Statewide[(1)/(2)]}/(1)/(2)	(4) Statewide Trended Fixed Expense Ratio	(5) Territory Trended Fixed Expense Ratio =(4) x (3)	(6) Latest-Year Average Base Class Rate	(7) Trended Fixed Expense per Policy
110	2,370,871	21,458	1.028	0.150	0.154	10.80	1.66
120	2,457,388	29,014	1.341	0.150	0.201	10.56	2.12
130	900,983	8,241	1.039	0.150	0.156	22.15	3.46
140	4,374,115	51,103	1.327	0.150	0.199	20.28	4.04
150	2,765,196	31,196	1.281	0.150	0.192	21.49	4.13
160	2,975,008	28,441	1.086	0.150	0.163	24.12	3.93
170	430,955	3,683	0.971	0.150	0.146	31.87	4.65
180	3,541,000	30,098	0.965	0.150	0.145	33.53	4.86
190	1,326,659	12,611	1.080	0.150	0.162	34.22	5.54
200	1,072,413	7,725	0.818	0.150	0.123	42.71	5.25
210	919,298	9,569	1.182	0.150	0.177	31.84	5.64
220	5,932,504	33,214	0.636	0.150	0.095	30.66	2.91
230	2,270,329	19,985	1.000	0.150	0.150	45.31	6.80
240	2,970,519	27,898	1.067	0.150	0.160	32.08	5.13
250	2,349,157	16,992	0.822	0.150	0.123	28.82	3.54
260	1,590,192	12,491	0.892	0.150	0.134	36.40	4.88
270	4,696,378	34,756	0.841	0.150	0.126	22.66	2.86
280	833,562	7,474	1.018	0.150	0.153	20.81	3.18
290	1,243,323	9,250	0.845	0.150	0.127	26.37	3.35
300	1,110,927	10,577	1.081	0.150	0.162	35.57	5.76
310	6,573,234	56,475	0.976	0.150	0.146	27.74	4.05
320	3,064,099	26,758	0.992	0.150	0.149	27.64	4.12
330	230,299	2,446	1.206	0.150	0.181	27.79	5.03
340	6,152,766	48,866	0.902	0.150	0.135	23.79	3.21
350	2,679,841	24,015	1.018	0.150	0.153	28.67	4.39
360	4,523,349	46,306	1.163	0.150	0.174	21.90	3.81
370	314,447	3,010	1.087	0.150	0.163	23.52	3.83
380	917,581	8,238	1.020	0.150	0.153	21.72	3.32
390	969,081	8,112	0.951	0.150	0.143	22.51	3.22
Statewide	71,555,474	630,002			0.150	25.88	3.88

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DERIVATION OF TERRITORY FIXED EXPENSE PER POLICY
EXTENDED COVERAGE

Territory	(1) Latest-Year Aggregate Calculated Earned Premium at Current Level	(2) Latest-Year Earned House Years	(3) Statewide Average Relativity to Territory ={Statewide[(1)/(2)]}/(1)/(2)	(4) Statewide Trended Fixed Expense Ratio	(5) Territory Trended Fixed Expense Ratio =(4) x (3)	(6) Latest-Year Average Base Class Rate	(7) Trended Fixed Expense per Policy
110	29,727,831	21,516	0.264	0.115	0.030	102.51	3.08
120	36,272,371	30,767	0.309	0.115	0.036	115.78	4.17
130	4,372,443	8,250	0.687	0.115	0.079	91.48	7.23
140	31,131,544	52,763	0.617	0.115	0.071	98.20	6.97
150	13,945,904	31,084	0.811	0.115	0.093	82.73	7.69
160	15,042,506	28,883	0.699	0.115	0.080	86.69	6.94
170	726,326	3,675	1.842	0.115	0.212	39.71	8.42
180	8,116,919	30,286	1.358	0.115	0.156	45.24	7.06
190	2,820,349	12,615	1.628	0.115	0.187	47.29	8.84
200	1,758,350	7,710	1.596	0.115	0.184	55.75	10.26
210	1,903,814	9,573	1.831	0.115	0.211	39.66	8.37
220	11,362,531	30,893	0.990	0.115	0.114	35.63	4.06
230	3,613,834	19,891	2.004	0.115	0.230	51.82	11.92
240	5,210,675	27,838	1.945	0.115	0.224	34.57	7.74
250	5,210,957	16,971	1.186	0.115	0.136	34.73	4.72
260	2,158,384	12,325	2.079	0.115	0.239	35.06	8.38
270	10,707,901	34,463	1.172	0.115	0.135	24.92	3.36
280	1,795,648	7,400	1.500	0.115	0.173	24.31	4.21
290	2,752,769	9,279	1.227	0.115	0.141	30.26	4.27
300	1,336,171	10,553	2.875	0.115	0.331	29.09	9.63
310	9,684,507	55,949	2.103	0.115	0.242	22.34	5.41
320	5,127,602	26,443	1.878	0.115	0.216	25.09	5.42
330	291,852	2,433	3.035	0.115	0.349	24.73	8.63
340	10,628,472	48,781	1.671	0.115	0.192	20.51	3.94
350	3,660,914	23,892	2.376	0.115	0.273	22.57	6.16
360	6,977,800	45,764	2.388	0.115	0.275	19.61	5.39
370	396,857	2,992	2.745	0.115	0.316	20.01	6.32
380	1,154,929	8,155	2.571	0.115	0.296	17.67	5.23
390	1,171,279	8,025	2.494	0.115	0.287	17.31	4.97
Statewide	229,061,439	629,169			0.115	47.99	5.52

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DEVIATIONS

FIRE

Year	FPBP Written Premium Adjusted to Manual	Written Premium Adjusted to Manual	FPBP Direct Written Premium	Direct Written Premium	Average Deviation
2015	33,697,556	49,824,446	33,697,556	49,249,492	0.69%
2016	35,767,079	49,856,014	35,767,079	49,448,623	0.48%
2017	38,052,370	49,447,003	38,052,370	49,021,465	0.49%
2018	40,085,084	46,897,199	40,085,084	47,007,135	-0.13%
2019	34,528,767	36,088,299	34,528,767	36,103,745	-0.02%
5-Year Average					0.30%
Selection					0.00%

EXTENDED COVERAGE

Year	FPBP Written Premium Adjusted to Manual	Written Premium Adjusted to Manual	FPBP Direct Written Premium	Direct Written Premium	Average Deviation
2015	104,868,378	68,559,234	105,863,293	66,181,393	0.80%
2016	107,905,798	70,151,902	108,887,641	67,210,898	1.10%
2017	112,705,497	59,496,328	113,695,035	59,674,255	-0.68%
2018	115,349,845	61,190,184	116,367,713	61,689,897	-0.86%
2019	129,819,505	74,226,657	130,805,415	74,822,388	-0.78%
5-Year Average					-0.08%
Selection					0.00%

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
FIRE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
110	Buildings	2014	11,971	17	2,332,816	194.87	11.463	1.098	2,561,432	12.586
		2015	11,986	17	2,371,644	197.87	11.639	1.075	2,549,517	12.512
		2016	11,883	17	2,364,052	198.94	11.703	1.068	2,524,808	12.498
		2017	11,578	17	2,303,918	198.99	11.705	1.058	2,437,545	12.384
		2018	11,223	17	2,195,380	195.61	11.507	1.047	2,298,563	12.048
		Total	58,641	17	11,567,810	197.26	11.604		12,371,865	12.410
	Contents	2014	10,967	4	166,541	15.19	3.796	1.179	196,352	4.476
		2015	10,937	4	174,272	15.93	3.984	1.136	197,973	4.525
		2016	10,818	4	179,703	16.61	4.153	1.120	201,267	4.651
		2017	10,570	4	178,858	16.92	4.230	1.104	197,459	4.670
		2018	10,235	4	175,491	17.15	4.287	1.086	190,583	4.655
		Total	53,527	4	874,865	16.34	4.086		983,634	4.594
	Total	2014	22,938	10.78	2,499,357	108.96	10.104		2,757,784	11.148
		2015	22,923	10.80	2,545,916	111.06	10.286		2,747,490	11.101
		2016	22,701	10.80	2,543,755	112.05	10.371		2,726,075	11.114
		2017	22,148	10.80	2,482,776	112.10	10.384		2,635,004	11.020
		2018	21,458	10.80	2,370,871	110.49	10.231		2,489,146	10.742
		Total	112,168	10.80	12,442,675	110.93	10.275		13,355,499	11.028
120	Buildings	2014	15,923	17	2,349,647	147.56	8.680	1.098	2,579,912	9.531
		2015	15,964	17	2,427,834	152.08	8.946	1.075	2,609,922	9.617
		2016	15,795	17	2,439,554	154.45	9.085	1.068	2,605,444	9.703
		2017	15,381	17	2,399,364	156.00	9.176	1.058	2,538,527	9.708
		2018	14,645	17	2,246,666	153.41	9.024	1.047	2,352,259	9.448
		Total	77,708	17	11,863,065	152.66	8.980		12,686,064	9.603
	Contents	2014	15,168	4	211,625	13.95	3.488	1.179	249,506	4.112
		2015	15,246	4	219,006	14.36	3.591	1.136	248,791	4.080
		2016	15,182	4	220,759	14.54	3.635	1.120	247,250	4.071
		2017	15,021	4	221,914	14.77	3.693	1.104	244,993	4.078
		2018	14,369	4	210,722	14.67	3.666	1.086	228,844	3.982
		Total	74,986	4	1,084,026	14.46	3.614		1,219,384	4.065
	Total	2014	31,091	10.66	2,561,272	82.38	7.730		2,829,418	8.539
		2015	31,210	10.65	2,646,840	84.81	7.963		2,858,712	8.601
		2016	30,977	10.63	2,660,313	85.88	8.080		2,852,694	8.664
		2017	30,402	10.58	2,621,278	86.22	8.152		2,783,520	8.656
		2018	29,014	10.56	2,457,388	84.70	8.019		2,581,103	8.423
		Total	152,694	10.62	12,947,091	84.79	7.987		13,905,448	8.578
130	Buildings	2014	4,795	31	758,123	158.11	5.100	1.098	832,419	5.600
		2015	4,871	31	790,843	162.36	5.237	1.075	850,156	5.630
		2016	4,879	31	801,205	164.22	5.297	1.068	855,687	5.657
		2017	4,894	31	811,617	165.84	5.350	1.058	858,691	5.660
		2018	4,926	31	813,598	165.16	5.328	1.047	851,837	5.578
		Total	24,365	31	3,975,386	163.16	5.263		4,248,790	5.625
	Contents	2014	2,873	9	65,423	22.77	2.530	1.179	77,134	2.983
		2015	3,056	9	72,198	23.63	2.625	1.136	82,017	2.982
		2016	3,128	9	77,724	24.85	2.761	1.120	87,051	3.092
		2017	3,208	9	82,479	25.71	2.857	1.104	91,057	3.154
		2018	3,315	9	87,385	26.36	2.929	1.086	94,900	3.181
		Total	15,580	9	385,209	24.72	2.747		432,158	3.082
	Total	2014	7,668	22.76	823,546	107.40	4.719		909,553	5.212
		2015	7,927	22.52	863,041	108.87	4.835		932,173	5.222
		2016	8,007	22.41	878,929	109.77	4.899		942,738	5.255
		2017	8,102	22.29	894,096	110.35	4.951		949,748	5.259
		2018	8,241	22.15	900,983	109.33	4.936		946,737	5.186
		Total	39,945	22.42	4,360,595	109.16	4.869		4,680,949	5.227

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
FIRE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
140	Buildings	2014	29,213	28	3,662,681	125.38	4.478	1.098	4,021,624	4.917
		2015	30,559	28	3,976,886	130.14	4.648	1.075	4,275,152	4.996
		2016	30,632	28	4,022,624	131.32	4.690	1.068	4,296,162	5.009
		2017	30,562	28	4,022,636	131.62	4.701	1.058	4,255,949	4.973
		2018	30,331	28	3,975,889	131.08	4.682	1.047	4,162,756	4.902
		Total	151,297	28	19,660,716	129.95	4.641		21,011,643	4.960
	Contents	2014	18,144	9	306,093	16.87	1.874	1.179	360,884	2.210
		2015	19,170	9	340,445	17.76	1.973	1.136	386,746	2.242
		2016	19,773	9	359,605	18.19	2.021	1.120	402,758	2.263
		2017	20,284	9	376,368	18.55	2.062	1.104	415,510	2.276
		2018	20,772	9	398,226	19.17	2.130	1.086	432,473	2.313
		Total	98,143	9	1,780,737	18.14	2.016		1,998,370	2.262
	Total	2014	47,357	20.72	3,968,774	83.81	4.045		4,382,507	4.466
		2015	49,729	20.68	4,317,331	86.82	4.199		4,661,898	4.534
		2016	50,405	20.55	4,382,229	86.94	4.231		4,698,920	4.537
		2017	50,846	20.42	4,399,004	86.52	4.237		4,671,459	4.499
		2018	51,103	20.28	4,374,115	85.59	4.221		4,595,229	4.435
		Total	249,440	20.52	21,441,453	85.96	4.188		23,010,014	4.494
150	Buildings	2014	17,790	29	2,276,059	127.94	4.412	1.098	2,499,113	4.844
		2015	18,672	29	2,421,621	129.69	4.472	1.075	2,603,243	4.808
		2016	19,144	29	2,485,617	129.84	4.477	1.068	2,654,639	4.782
		2017	19,418	29	2,517,022	129.62	4.470	1.058	2,663,009	4.729
		2018	19,488	29	2,502,727	128.42	4.428	1.047	2,620,355	4.637
		Total	94,512	29	12,203,046	129.12	4.452		13,040,359	4.758
	Contents	2014	9,696	9	198,530	20.48	2.275	1.179	234,067	2.682
		2015	10,351	9	222,902	21.53	2.393	1.136	253,217	2.718
		2016	10,866	9	237,433	21.85	2.428	1.120	265,925	2.719
		2017	11,313	9	249,451	22.05	2.450	1.104	275,394	2.705
		2018	11,708	9	262,469	22.42	2.491	1.086	285,041	2.705
		Total	53,934	9	1,170,785	21.71	2.412		1,313,644	2.706
	Total	2014	27,486	21.94	2,474,589	90.03	4.103		2,733,180	4.531
		2015	29,023	21.87	2,644,523	91.12	4.167		2,856,459	4.501
		2016	30,010	21.76	2,723,050	90.74	4.170		2,920,564	4.473
		2017	30,731	21.64	2,766,473	90.02	4.160		2,938,403	4.419
		2018	31,196	21.49	2,765,196	88.64	4.124		2,905,397	4.333
		Total	148,446	21.73	13,373,831	90.09	4.145		14,354,002	4.449
160	Buildings	2014	17,210	32	2,532,216	147.14	4.598	1.098	2,780,373	5.049
		2015	18,014	32	2,748,042	152.55	4.767	1.075	2,954,145	5.125
		2016	18,061	32	2,773,376	153.56	4.799	1.068	2,961,966	5.125
		2017	17,975	32	2,771,791	154.20	4.819	1.058	2,932,555	5.098
		2018	17,774	32	2,749,272	154.68	4.834	1.047	2,878,488	5.061
		Total	89,034	32	13,574,697	152.47	4.765		14,507,527	5.092
	Contents	2014	9,322	11	181,903	19.51	1.774	1.179	214,464	2.091
		2015	9,827	11	201,213	20.48	1.861	1.136	228,578	2.115
		2016	10,151	11	210,377	20.72	1.884	1.120	235,622	2.110
		2017	10,471	11	219,236	20.94	1.903	1.104	242,037	2.101
		2018	10,667	11	225,736	21.16	1.924	1.086	245,149	2.089
		Total	50,438	11	1,038,465	20.59	1.872		1,165,850	2.101
	Total	2014	26,532	24.62	2,714,119	102.30	4.155		2,994,837	4.584
		2015	27,841	24.59	2,949,255	105.93	4.308		3,182,723	4.649
		2016	28,212	24.44	2,983,753	105.76	4.327		3,197,588	4.637
		2017	28,446	24.27	2,991,027	105.15	4.332		3,174,591	4.598
		2018	28,441	24.12	2,975,008	104.60	4.336		3,123,637	4.553
		Total	139,472	24.41	14,613,162	104.77	4.293		15,673,376	4.605

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
FIRE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
170	Buildings	2014	1,867	44	292,225	156.52	3.557	1.098	320,863	3.906
		2015	1,992	44	322,556	161.93	3.680	1.075	346,748	3.956
		2016	2,098	44	342,512	163.26	3.710	1.068	365,803	3.963
		2017	2,165	44	354,588	163.78	3.722	1.058	375,154	3.938
		2018	2,242	44	373,087	166.41	3.782	1.047	390,622	3.960
		Total	10,364	44	1,684,968	162.58	3.695		1,799,190	3.945
	Contents	2014	1,069	13	37,682	35.25	2.712	1.179	44,427	3.197
		2015	1,195	13	45,444	38.03	2.925	1.136	51,624	3.323
		2016	1,290	13	49,916	38.69	2.977	1.120	55,906	3.334
		2017	1,352	13	52,288	38.67	2.975	1.104	57,726	3.284
		2018	1,441	13	57,868	40.16	3.089	1.086	62,845	3.355
		Total	6,347	13	243,198	38.32	2.947		272,528	3.303
	Total	2014	2,936	32.71	329,907	112.37	3.435		365,290	3.803
		2015	3,187	32.38	368,000	115.47	3.566		398,372	3.861
		2016	3,388	32.20	392,428	115.83	3.598		421,709	3.866
		2017	3,517	32.08	406,876	115.69	3.606		432,880	3.836
		2018	3,683	31.87	430,955	117.01	3.671		453,467	3.863
		Total	16,711	32.23	1,928,166	115.38	3.580		2,071,718	3.847
180	Buildings	2014	16,598	45	2,654,369	159.92	3.554	1.098	2,914,497	3.902
		2015	17,687	45	2,900,134	163.97	3.644	1.075	3,117,644	3.917
		2016	18,280	45	3,036,561	166.11	3.691	1.068	3,243,047	3.942
		2017	18,649	45	3,139,319	168.34	3.741	1.058	3,321,400	3.958
		2018	18,957	45	3,225,371	170.14	3.781	1.047	3,376,963	3.959
		Total	90,171	45	14,955,754	165.86	3.686		15,973,551	3.937
	Contents	2014	9,090	14	237,212	26.10	1.864	1.179	279,673	2.198
		2015	9,748	14	262,567	26.94	1.924	1.136	298,276	2.186
		2016	10,289	14	280,075	27.22	1.944	1.120	313,684	2.178
		2017	10,757	14	297,653	27.67	1.976	1.104	328,609	2.182
		2018	11,141	14	315,629	28.33	2.024	1.086	342,773	2.198
		Total	51,025	14	1,393,136	27.30	1.950		1,563,015	2.188
	Total	2014	25,688	34.03	2,891,581	112.57	3.308		3,194,170	3.654
		2015	27,435	33.99	3,162,701	115.28	3.392		3,415,920	3.664
		2016	28,569	33.84	3,316,636	116.09	3.431		3,556,731	3.679
		2017	29,406	33.66	3,436,972	116.88	3.472		3,650,008	3.688
		2018	30,098	33.53	3,541,000	117.65	3.509		3,719,737	3.686
		Total	141,196	33.80	16,348,890	115.79	3.426		17,536,566	3.675
190	Buildings	2014	7,048	46	977,958	138.76	3.016	1.098	1,073,798	3.312
		2015	7,356	46	1,053,093	143.16	3.112	1.075	1,132,075	3.346
		2016	7,606	46	1,096,806	144.20	3.135	1.068	1,171,389	3.348
		2017	7,734	46	1,131,936	146.36	3.182	1.058	1,197,588	3.366
		2018	7,968	46	1,174,534	147.41	3.204	1.047	1,229,737	3.355
		Total	37,712	46	5,434,327	144.10	3.133		5,804,587	3.346
	Contents	2014	3,727	14	107,387	28.81	2.058	1.179	126,609	2.426
		2015	3,948	14	122,179	30.95	2.211	1.136	138,795	2.511
		2016	4,169	14	132,764	31.85	2.275	1.120	148,696	2.548
		2017	4,381	14	142,450	32.52	2.323	1.104	157,265	2.564
		2018	4,643	14	152,125	32.76	2.340	1.086	165,208	2.542
		Total	20,868	14	656,905	31.48	2.249		736,573	2.521
	Total	2014	10,775	34.93	1,085,345	100.73	2.884		1,200,407	3.189
		2015	11,304	34.82	1,175,272	103.97	2.986		1,270,870	3.228
		2016	11,775	34.67	1,229,570	104.42	3.012		1,320,084	3.234
		2017	12,115	34.43	1,274,386	105.19	3.055		1,354,853	3.248
		2018	12,611	34.22	1,326,659	105.20	3.074		1,394,945	3.233
		Total	58,580	34.60	6,091,232	103.98	3.005		6,541,160	3.227

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
FIRE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[a]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
200	Buildings	2014	4,320	62	813,837	188.39	3.039	1.098	893,593	3.336
		2015	4,394	62	864,145	196.66	3.172	1.075	928,956	3.410
		2016	4,389	62	875,677	199.52	3.218	1.068	935,223	3.437
		2017	4,421	62	901,831	203.99	3.290	1.058	954,137	3.481
		2018	4,485	62	931,857	207.77	3.351	1.047	975,654	3.509
		Total	22,009	62	4,387,347	199.34	3.215		4,687,563	3.435
	Contents	2014	3,063	16	111,849	36.52	2.282	1.179	131,870	2.691
		2015	3,118	16	121,726	39.04	2.440	1.136	138,281	2.772
		2016	3,124	16	125,352	40.13	2.508	1.120	140,394	2.809
		2017	3,162	16	132,149	41.79	2.612	1.104	145,892	2.884
		2018	3,240	16	140,556	43.38	2.711	1.086	152,644	2.945
		Total	15,707	16	631,632	40.21	2.513		709,081	2.822
	Total	2014	7,383	42.92	925,686	125.38	2.922		1,025,463	3.236
		2015	7,512	42.91	985,871	131.24	3.059		1,067,237	3.311
		2016	7,513	42.87	1,001,029	133.24	3.108		1,075,617	3.339
		2017	7,583	42.82	1,033,980	136.36	3.184		1,100,030	3.388
		2018	7,725	42.71	1,072,413	138.82	3.251		1,128,298	3.420
		Total	37,716	42.84	5,018,979	133.07	3.106		5,396,645	3.340
210	Buildings	2014	5,394	41	668,560	123.95	3.023	1.098	734,079	3.319
		2015	5,744	41	730,951	127.25	3.104	1.075	785,772	3.337
		2016	6,017	41	776,711	129.09	3.148	1.068	829,527	3.363
		2017	6,106	41	791,708	129.66	3.162	1.058	837,627	3.346
		2018	6,437	41	837,516	130.11	3.173	1.047	876,879	3.323
		Total	29,698	41	3,805,446	128.14	3.125		4,063,885	3.338
	Contents	2014	2,554	13	60,540	23.70	1.823	1.179	71,377	2.150
		2015	2,707	13	65,429	24.17	1.859	1.136	74,327	2.112
		2016	2,877	13	71,309	24.79	1.907	1.120	79,866	2.135
		2017	3,014	13	77,825	25.82	1.986	1.104	85,919	2.193
		2018	3,132	13	81,782	26.11	2.009	1.086	88,815	2.181
		Total	14,284	13	356,885	24.98	1.922		400,304	2.156
	Total	2014	7,948	32.00	729,100	91.73	2.866		805,456	3.167
		2015	8,451	32.03	796,380	94.24	2.942		860,100	3.177
		2016	8,894	31.94	848,020	95.35	2.985		909,393	3.201
		2017	9,120	31.75	869,533	95.34	3.003		923,546	3.190
		2018	9,569	31.84	919,298	96.07	3.018		965,695	3.170
		Total	43,982	31.91	4,162,331	94.64	2.966		4,464,189	3.181
220	Buildings	2014	19,634	41	3,905,557	198.92	4.852	1.098	4,288,302	5.327
		2015	20,710	41	4,236,870	204.58	4.990	1.075	4,554,635	5.364
		2016	21,160	41	4,361,551	206.12	5.027	1.068	4,658,136	5.369
		2017	21,308	41	4,567,716	214.37	5.228	1.058	4,832,644	5.532
		2018	21,374	41	5,674,410	265.48	6.475	1.047	5,941,107	6.780
		Total	104,186	41	22,746,104	218.32	5.325		24,274,824	5.683
	Contents	2014	9,164	12	179,382	19.57	1.631	1.179	211,491	1.923
		2015	10,058	12	206,743	20.56	1.713	1.136	234,860	1.946
		2016	10,808	12	226,490	20.96	1.746	1.120	253,669	1.956
		2017	11,405	12	240,906	21.12	1.760	1.104	265,960	1.943
		2018	11,840	12	258,094	21.80	1.817	1.086	280,290	1.973
		Total	53,275	12	1,111,615	20.87	1.739		1,246,271	1.949
	Total	2014	28,798	31.77	4,084,939	141.85	4.465		4,499,793	4.918
		2015	30,768	31.52	4,443,613	144.42	4.582		4,789,495	4.939
		2016	31,968	31.20	4,588,041	143.52	4.601		4,911,805	4.925
		2017	32,713	30.89	4,808,622	146.99	4.759		5,098,604	5.046
		2018	33,214	30.66	5,932,504	178.61	5.825		6,221,397	6.109
		Total	157,461	31.19	23,857,719	151.52	4.858		25,521,095	5.197

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
FIRE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
230	Buildings	2014	11,798	64	1,835,207	155.55	2.431	1.098	2,015,057	2.669
		2015	12,092	64	1,921,989	158.95	2.484	1.075	2,066,138	2.670
		2016	12,157	64	1,948,826	160.30	2.505	1.068	2,081,346	2.675
		2017	12,177	64	1,965,507	161.41	2.522	1.058	2,079,506	2.668
		2018	12,039	64	1,985,657	164.94	2.577	1.047	2,078,983	2.698
		Total	60,263	64	9,657,186	160.25	2.504		10,321,031	2.676
	Contents	2014	7,204	17	240,046	33.32	1.960	1.179	283,014	2.311
		2015	7,465	17	258,737	34.66	2.039	1.136	293,925	2.316
		2016	7,677	17	267,020	34.78	2.046	1.120	299,062	2.292
		2017	7,839	17	273,950	34.95	2.056	1.104	302,441	2.270
		2018	7,946	17	284,672	35.83	2.107	1.086	309,154	2.289
		Total	38,131	17	1,324,425	34.73	2.043		1,487,596	2.295
	Total	2014	19,002	46.18	2,075,253	109.21	2.365		2,298,072	2.619
		2015	19,557	46.06	2,180,726	111.51	2.421		2,360,063	2.620
		2016	19,834	45.81	2,215,846	111.72	2.439		2,380,409	2.620
		2017	20,016	45.59	2,239,457	111.88	2.454		2,381,947	2.610
		2018	19,985	45.31	2,270,329	113.60	2.507		2,388,137	2.637
		Total	98,394	45.79	10,981,611	111.61	2.438		11,808,627	2.621
240	Buildings	2014	16,502	42	2,350,319	142.43	3.391	1.098	2,580,650	3.723
		2015	17,347	42	2,532,699	146.00	3.476	1.075	2,722,651	3.737
		2016	17,979	42	2,614,302	145.41	3.462	1.068	2,792,075	3.698
		2017	18,170	42	2,662,516	146.53	3.489	1.058	2,816,942	3.691
		2018	18,355	42	2,699,601	147.08	3.502	1.047	2,826,482	3.666
		Total	88,353	42	12,859,437	145.55	3.465		13,738,800	3.702
	Contents	2014	7,625	13	200,543	26.30	2.023	1.179	236,440	2.385
		2015	8,148	13	222,262	27.28	2.098	1.136	252,490	2.384
		2016	8,640	13	240,111	27.79	2.138	1.120	268,924	2.394
		2017	9,140	13	255,616	27.97	2.151	1.104	282,200	2.375
		2018	9,543	13	270,918	28.39	2.184	1.086	294,217	2.372
		Total	43,096	13	1,189,450	27.60	2.123		1,334,271	2.382
	Total	2014	24,127	32.83	2,550,862	105.73	3.220		2,817,090	3.556
		2015	25,495	32.73	2,754,961	108.06	3.301		2,975,141	3.565
		2016	26,619	32.59	2,854,413	107.23	3.291		3,060,999	3.529
		2017	27,310	32.29	2,918,132	106.85	3.309		3,099,142	3.514
		2018	27,898	32.08	2,970,519	106.48	3.319		3,120,699	3.487
		Total	131,449	32.49	14,048,887	106.88	3.289		15,073,072	3.529
250	Buildings	2014	9,926	38	1,785,244	179.86	4.733	1.098	1,960,198	5.197
		2015	10,654	38	1,992,844	187.05	4.922	1.075	2,142,307	5.292
		2016	10,881	38	2,065,410	189.82	4.995	1.068	2,205,858	5.335
		2017	11,053	38	2,163,657	195.75	5.151	1.058	2,289,149	5.450
		2018	10,994	38	2,231,245	202.95	5.341	1.047	2,336,114	5.592
		Total	53,508	38	10,238,400	191.34	5.035		10,933,626	5.377
	Contents	2014	4,622	12	83,147	17.99	1.499	1.179	98,030	1.767
		2015	5,170	12	95,035	18.38	1.532	1.136	107,960	1.740
		2016	5,545	12	102,938	18.56	1.547	1.120	115,291	1.733
		2017	5,810	12	110,739	19.06	1.588	1.104	122,256	1.754
		2018	5,998	12	117,912	19.66	1.638	1.086	128,052	1.779
		Total	27,145	12	509,771	18.78	1.565		571,589	1.755
	Total	2014	14,548	29.74	1,868,391	128.43	4.318		2,058,228	4.757
		2015	15,824	29.51	2,087,879	131.94	4.472		2,250,267	4.820
		2016	16,426	29.22	2,168,348	132.01	4.517		2,321,148	4.836
		2017	16,863	29.04	2,274,396	134.87	4.644		2,411,405	4.924
		2018	16,992	28.82	2,349,157	138.25	4.797		2,464,166	5.031
		Total	80,653	29.25	10,748,171	133.26	4.556		11,505,215	4.877

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
FIRE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
260	Buildings	2014	7,853	47	1,307,636	166.51	3.543	1.098	1,435,784	3.890
		2015	7,906	47	1,290,035	163.17	3.472	1.075	1,386,788	3.732
		2016	8,109	47	1,353,227	166.88	3.551	1.068	1,445,246	3.792
		2017	8,436	47	1,434,369	170.03	3.618	1.058	1,517,562	3.827
		2018	8,595	47	1,470,132	171.05	3.639	1.047	1,539,228	3.810
		Total	40,899	47	6,855,399	167.62	3.566		7,324,609	3.810
	Contents	2014	3,051	13	83,967	27.52	2.117	1.179	98,997	2.496
		2015	3,280	13	94,493	28.81	2.216	1.136	107,344	2.517
		2016	3,514	13	103,621	29.49	2.268	1.120	116,056	2.541
		2017	3,739	13	113,280	30.30	2.331	1.104	125,061	2.573
		2018	3,896	13	120,060	30.82	2.370	1.086	130,385	2.574
		Total	17,480	13	515,421	29.49	2.268		577,843	2.543
	Total	2014	10,904	37.49	1,391,603	127.62	3.405		1,534,781	3.755
		2015	11,186	37.03	1,384,528	123.77	3.342		1,494,132	3.607
		2016	11,623	36.72	1,456,848	125.34	3.413		1,561,302	3.658
		2017	12,175	36.56	1,547,649	127.12	3.477		1,642,624	3.690
		2018	12,491	36.40	1,590,192	127.31	3.498		1,669,613	3.673
		Total	58,379	36.82	7,370,820	126.26	3.429		7,902,452	3.676
270	Buildings	2014	20,796	30	3,922,802	188.63	6.288	1.098	4,307,237	6.904
		2015	21,799	30	4,171,175	191.35	6.378	1.075	4,484,013	6.857
		2016	22,023	30	4,235,744	192.33	6.411	1.068	4,523,775	6.847
		2017	21,990	30	4,323,145	196.60	6.553	1.058	4,573,887	6.933
		2018	21,993	30	4,469,403	203.22	6.774	1.047	4,679,465	7.092
		Total	108,601	30	21,122,269	194.49	6.483		22,568,377	6.927
	Contents	2014	10,036	10	171,662	17.10	1.710	1.179	202,389	2.017
		2015	10,982	10	192,081	17.49	1.749	1.136	218,204	1.987
		2016	11,567	10	201,528	17.42	1.742	1.120	225,711	1.951
		2017	12,072	10	212,352	17.59	1.759	1.104	234,437	1.942
		2018	12,763	10	226,975	17.78	1.778	1.086	246,495	1.931
		Total	57,420	10	1,004,598	17.50	1.750		1,127,236	1.963
	Total	2014	30,832	23.49	4,094,464	132.80	5.653		4,509,626	6.227
		2015	32,781	23.30	4,363,256	133.10	5.713		4,702,217	6.156
		2016	33,590	23.11	4,437,272	132.10	5.715		4,749,486	6.118
		2017	34,062	22.91	4,535,497	133.15	5.812		4,808,324	6.161
		2018	34,756	22.66	4,696,378	135.12	5.964		4,925,960	6.256
		Total	166,021	23.08	22,126,867	133.28	5.774		23,695,613	6.183
280	Buildings	2014	4,517	28	731,560	161.96	5.784	1.098	803,253	6.351
		2015	4,584	28	744,034	162.31	5.797	1.075	799,837	6.232
		2016	4,617	28	739,754	160.22	5.722	1.068	790,057	6.111
		2017	4,631	28	752,766	162.55	5.805	1.058	796,426	6.142
		2018	4,646	28	776,863	167.21	5.972	1.047	813,376	6.253
		Total	22,995	28	3,744,977	162.86	5.816		4,002,949	6.217
	Contents	2014	2,310	9	43,882	19.00	2.111	1.179	51,737	2.489
		2015	2,432	9	46,726	19.21	2.135	1.136	53,081	2.425
		2016	2,559	9	49,253	19.25	2.139	1.120	55,163	2.395
		2017	2,703	9	52,711	19.50	2.167	1.104	58,193	2.392
		2018	2,828	9	56,699	20.05	2.228	1.086	61,575	2.419
		Total	12,832	9	249,271	19.43	2.158		279,749	2.422
	Total	2014	6,827	21.57	775,442	113.58	5.266		854,990	5.806
		2015	7,016	21.41	790,760	112.71	5.263		852,917	5.677
		2016	7,176	21.22	789,007	109.95	5.180		845,221	5.549
		2017	7,334	21.00	805,477	109.83	5.231		854,619	5.550
		2018	7,474	20.81	833,562	111.53	5.359		874,951	5.625
		Total	35,827	21.19	3,994,248	111.49	5.260		4,282,698	5.640

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
FIRE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
290	Buildings	2014	5,634	35	1,011,525	179.54	5.130	1.098	1,110,654	5.632
		2015	5,966	35	1,103,648	184.99	5.285	1.075	1,186,422	5.682
		2016	6,056	35	1,134,640	187.36	5.353	1.068	1,211,796	5.717
		2017	5,985	35	1,153,606	192.75	5.507	1.058	1,220,515	5.827
		2018	5,924	35	1,179,838	199.16	5.690	1.047	1,235,290	5.958
		Total	29,565	35	5,583,257	188.85	5.396		5,964,677	5.764
	Contents	2014	2,723	11	51,784	19.02	1.729	1.179	61,053	2.038
		2015	2,973	11	56,095	18.87	1.715	1.136	63,724	1.949
		2016	3,166	11	59,366	18.75	1.705	1.120	66,490	1.909
		2017	3,243	11	60,000	18.50	1.682	1.104	66,240	1.857
		2018	3,326	11	63,485	19.09	1.735	1.086	68,945	1.884
		Total	15,431	11	290,730	18.84	1.713		326,452	1.923
	Total	2014	8,357	27.18	1,063,309	127.24	4.681		1,171,708	5.158
		2015	8,939	27.02	1,159,743	129.74	4.802		1,250,146	5.176
		2016	9,222	26.76	1,194,006	129.47	4.838		1,278,285	5.180
		2017	9,228	26.57	1,213,606	131.51	4.951		1,286,755	5.249
		2018	9,250	26.37	1,243,323	134.41	5.097		1,304,235	5.347
		Total	44,996	26.77	5,873,987	130.54	4.877		6,291,129	5.223
300	Buildings	2014	6,851	47	916,858	133.83	2.847	1.098	1,006,710	3.126
		2015	6,977	47	959,855	137.57	2.927	1.075	1,031,844	3.147
		2016	6,978	47	983,670	140.97	2.999	1.068	1,050,560	3.203
		2017	6,863	47	976,351	142.26	3.027	1.058	1,032,979	3.202
		2018	6,799	47	980,515	144.21	3.068	1.047	1,026,599	3.213
		Total	34,468	47	4,817,249	139.76	2.974		5,148,692	3.178
	Contents	2014	3,392	15	107,122	31.58	2.105	1.179	126,297	2.482
		2015	3,512	15	116,513	33.18	2.212	1.136	132,359	2.513
		2016	3,673	15	124,110	33.79	2.253	1.120	139,003	2.523
		2017	3,710	15	126,197	34.02	2.268	1.104	139,321	2.504
		2018	3,778	15	130,412	34.52	2.301	1.086	141,627	2.499
		Total	18,065	15	604,354	33.45	2.230		678,608	2.504
	Total	2014	10,243	36.40	1,023,980	99.97	2.746		1,133,007	3.039
		2015	10,489	36.29	1,076,368	102.62	2.828		1,164,203	3.059
		2016	10,651	35.96	1,107,780	104.01	2.892		1,189,563	3.105
		2017	10,573	35.77	1,102,548	104.28	2.915		1,172,301	3.100
		2018	10,577	35.57	1,110,927	105.03	2.953		1,168,227	3.105
		Total	52,533	36.00	5,421,603	103.20	2.867		5,827,300	3.082
310	Buildings	2014	39,265	35	5,969,237	152.02	4.344	1.098	6,554,222	4.769
		2015	40,649	35	6,316,200	155.38	4.440	1.075	6,789,915	4.773
		2016	40,715	35	6,334,261	155.58	4.445	1.068	6,764,991	4.747
		2017	40,116	35	6,263,056	156.12	4.461	1.058	6,626,313	4.719
		2018	39,403	35	6,196,650	157.26	4.493	1.047	6,487,893	4.704
		Total	200,148	35	31,079,404	155.28	4.437		33,223,334	4.743
	Contents	2014	14,809	11	298,041	20.13	1.830	1.179	351,390	2.157
		2015	15,813	11	336,385	21.27	1.934	1.136	382,133	2.197
		2016	16,440	11	352,624	21.45	1.950	1.120	394,939	2.184
		2017	16,835	11	363,217	21.58	1.961	1.104	400,992	2.165
		2018	17,072	11	376,584	22.06	2.005	1.086	408,970	2.178
		Total	80,969	11	1,726,851	21.33	1.939		1,938,424	2.176
	Total	2014	54,074	28.43	6,267,278	115.90	4.077		6,905,613	4.492
		2015	56,462	28.28	6,652,585	117.82	4.167		7,172,048	4.492
		2016	57,155	28.10	6,686,885	117.00	4.164		7,159,930	4.459
		2017	56,951	27.91	6,626,273	116.35	4.169		7,027,305	4.422
		2018	56,475	27.74	6,573,234	116.39	4.195		6,896,863	4.402
		Total	281,117	28.09	32,806,255	116.70	4.155		35,161,758	4.453

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
FIRE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
320	Buildings	2014	19,269	34	2,903,335	150.67	4.432	1.098	3,187,862	4.866
		2015	19,850	34	3,015,460	151.91	4.468	1.075	3,241,620	4.803
		2016	20,027	34	3,040,231	151.81	4.465	1.068	3,246,967	4.769
		2017	19,759	34	2,981,797	150.91	4.438	1.058	3,154,741	4.696
		2018	19,359	34	2,908,908	150.26	4.419	1.047	3,045,627	4.627
		Total	98,264	34	14,849,731	151.12	4.445		15,876,816	4.752
	Contents	2014	6,316	11	124,457	19.71	1.791	1.179	146,735	2.112
		2015	6,649	11	140,372	21.11	1.919	1.136	159,463	2.180
		2016	7,013	11	150,434	21.45	1.950	1.120	168,486	2.184
		2017	7,268	11	153,959	21.18	1.926	1.104	169,971	2.126
		2018	7,399	11	155,191	20.97	1.907	1.086	168,537	2.071
		Total	34,645	11	724,413	20.91	1.901		813,192	2.134
	Total	2014	25,585	28.32	3,027,792	118.34	4.178		3,334,597	4.602
		2015	26,499	28.23	3,155,832	119.09	4.219		3,401,082	4.547
		2016	27,040	28.03	3,190,665	118.00	4.209		3,415,453	4.506
		2017	27,027	27.81	3,135,756	116.02	4.171		3,324,712	4.423
		2018	26,758	27.64	3,064,099	114.51	4.143		3,214,164	4.346
		Total	132,909	28.00	15,574,144	117.18	4.184		16,690,008	4.484
330	Buildings	2014	1,707	36	218,177	127.81	3.550	1.098	239,558	3.898
		2015	1,703	36	219,739	129.03	3.584	1.075	236,219	3.853
		2016	1,684	36	218,628	129.83	3.606	1.068	233,495	3.852
		2017	1,644	36	214,232	130.31	3.620	1.058	226,657	3.830
		2018	1,609	36	208,829	129.79	3.605	1.047	218,644	3.775
		Total	8,347	36	1,079,605	129.34	3.593		1,154,574	3.842
	Contents	2014	768	12	18,948	24.67	2.056	1.179	22,340	2.424
		2015	793	12	19,703	24.85	2.071	1.136	22,383	2.352
		2016	816	12	20,829	25.53	2.127	1.120	23,328	2.382
		2017	826	12	20,973	25.39	2.116	1.104	23,154	2.336
		2018	837	12	21,470	25.65	2.138	1.086	23,316	2.321
		Total	4,040	12	101,923	25.23	2.102		114,521	2.362
	Total	2014	2,475	28.55	237,125	95.81	3.355		261,898	3.706
		2015	2,496	28.38	239,442	95.93	3.381		258,602	3.651
		2016	2,500	28.17	239,457	95.78	3.401		256,823	3.647
		2017	2,470	27.97	235,205	95.22	3.404		249,812	3.615
		2018	2,446	27.79	230,299	94.15	3.388		241,960	3.560
		Total	12,387	28.17	1,181,528	95.38	3.386		1,269,095	3.637
340	Buildings	2014	34,169	31	6,024,222	176.31	5.687	1.098	6,614,596	6.245
		2015	34,750	31	6,164,806	177.40	5.723	1.075	6,627,166	6.152
		2016	34,522	31	6,075,137	175.98	5.677	1.068	6,488,246	6.063
		2017	33,707	31	5,900,986	175.07	5.647	1.058	6,243,243	5.975
		2018	32,857	31	5,865,687	178.52	5.759	1.047	6,141,374	6.029
		Total	170,005	31	30,030,838	176.65	5.698		32,114,626	6.094
	Contents	2014	14,552	9	249,507	17.15	1.905	1.179	294,169	2.246
		2015	15,233	9	270,735	17.77	1.975	1.136	307,555	2.243
		2016	15,606	9	275,290	17.64	1.960	1.120	308,325	2.195
		2017	15,839	9	279,126	17.62	1.958	1.104	308,155	2.162
		2018	16,009	9	287,079	17.93	1.992	1.086	311,768	2.164
		Total	77,239	9	1,361,737	17.63	1.959		1,529,971	2.201
	Total	2014	48,721	24.43	6,273,729	128.77	5.271		6,908,765	5.805
		2015	49,983	24.30	6,435,541	128.75	5.300		6,934,721	5.711
		2016	50,128	24.15	6,350,427	126.68	5.246		6,796,571	5.614
		2017	49,546	23.97	6,180,112	124.73	5.204		6,551,398	5.517
		2018	48,866	23.79	6,152,766	125.91	5.292		6,453,142	5.550
		Total	247,244	24.13	31,392,575	126.97	5.263		33,644,597	5.640

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
FIRE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
350	Buildings	2014	18,023	35	2,517,400	139.68	3.991	1.098	2,764,105	4.382
		2015	18,450	35	2,606,102	141.25	4.036	1.075	2,801,560	4.338
		2016	18,540	35	2,638,417	142.31	4.066	1.068	2,817,829	4.342
		2017	18,200	35	2,590,095	142.31	4.066	1.058	2,740,321	4.302
		2018	17,679	35	2,540,462	143.70	4.106	1.047	2,659,864	4.299
		Total	90,892	35	12,892,476	141.84	4.053		13,783,678	4.333
	Contents	2014	5,485	11	119,038	21.70	1.973	1.179	140,346	2.326
		2015	5,751	11	127,117	22.10	2.009	1.136	144,405	2.283
		2016	6,056	11	131,779	21.76	1.978	1.120	147,592	2.216
		2017	6,186	11	133,911	21.65	1.968	1.104	147,838	2.173
		2018	6,336	11	139,379	22.00	2.000	1.086	151,366	2.172
		Total	29,814	11	651,224	21.84	1.986		731,547	2.231
	Total	2014	23,508	29.40	2,636,438	112.15	3.815		2,904,451	4.202
		2015	24,201	29.30	2,733,219	112.94	3.855		2,945,965	4.155
		2016	24,596	29.09	2,770,196	112.63	3.872		2,965,422	4.144
		2017	24,386	28.91	2,724,006	111.70	3.864		2,888,158	4.096
		2018	24,015	28.67	2,679,841	111.59	3.893		2,811,229	4.083
		Total	120,706	29.07	13,543,700	112.20	3.860		14,515,225	4.136
360	Buildings	2014	31,502	29	4,278,222	135.81	4.683	1.098	4,697,488	5.142
		2015	31,959	29	4,404,841	137.83	4.753	1.075	4,735,204	5.109
		2016	31,870	29	4,408,387	138.32	4.770	1.068	4,708,157	5.094
		2017	30,917	29	4,280,432	138.45	4.774	1.058	4,528,697	5.051
		2018	29,856	29	4,186,493	140.22	4.835	1.047	4,383,258	5.063
		Total	156,104	29	21,558,375	138.10	4.762		23,052,804	5.092
	Contents	2014	14,872	9	276,492	18.59	2.066	1.179	325,984	2.435
		2015	15,578	9	301,796	19.37	2.153	1.136	342,840	2.445
		2016	16,091	9	315,966	19.64	2.182	1.120	353,882	2.444
		2017	16,352	9	325,773	19.92	2.214	1.104	359,653	2.444
		2018	16,450	9	336,856	20.48	2.275	1.086	365,826	2.471
		Total	79,343	9	1,556,883	19.62	2.180		1,748,185	2.448
	Total	2014	46,374	22.59	4,554,714	98.22	4.349		5,023,472	4.796
		2015	47,537	22.45	4,706,637	99.01	4.411		5,078,044	4.759
		2016	47,961	22.29	4,724,353	98.50	4.419		5,062,039	4.735
		2017	47,269	22.08	4,606,205	97.45	4.413		4,888,350	4.683
		2018	46,306	21.90	4,523,349	97.68	4.461		4,749,084	4.684
		Total	235,447	22.26	23,115,258	98.18	4.410		24,800,990	4.732
370	Buildings	2014	1,922	32	278,394	144.85	4.526	1.098	305,677	4.970
		2015	1,959	32	295,891	151.04	4.720	1.075	318,083	5.074
		2016	1,979	32	301,121	152.16	4.755	1.068	321,597	5.078
		2017	1,917	32	291,477	152.05	4.752	1.058	308,383	5.027
		2018	1,850	32	281,074	151.93	4.748	1.047	294,284	4.971
		Total	9,627	32	1,447,957	150.41	4.700		1,548,024	5.025
	Contents	2014	1,150	10	32,839	28.56	2.856	1.179	38,717	3.367
		2015	1,176	10	34,949	29.72	2.972	1.136	39,702	3.376
		2016	1,199	10	35,199	29.36	2.936	1.120	39,423	3.288
		2017	1,183	10	34,385	29.07	2.907	1.104	37,961	3.209
		2018	1,160	10	33,373	28.77	2.877	1.086	36,243	3.124
		Total	5,868	10	170,745	29.10	2.910		192,046	3.273
	Total	2014	3,072	23.76	311,233	101.31	4.263		344,394	4.717
		2015	3,135	23.75	330,840	105.53	4.444		357,785	4.806
		2016	3,178	23.70	336,320	105.83	4.465		361,020	4.793
		2017	3,100	23.60	325,862	105.12	4.453		346,344	4.733
		2018	3,010	23.52	314,447	104.47	4.441		330,528	4.668
		Total	15,495	23.67	1,618,702	104.47	4.414		1,740,070	4.745

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
FIRE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
380	Buildings	2014	5,397	29	828,780	153.56	5.295	1.098	910,000	5.814
		2015	5,498	29	849,710	154.55	5.329	1.075	913,438	5.729
		2016	5,467	29	852,876	156.00	5.379	1.068	910,872	5.745
		2017	5,357	29	840,695	156.93	5.412	1.058	889,455	5.725
		2018	5,239	29	840,200	160.37	5.530	1.047	879,689	5.790
		Total	26,958	29	4,212,261	156.25	5.388		4,503,455	5.760
	Contents	2014	2,693	9	62,389	23.17	2.574	1.179	73,557	3.035
		2015	2,833	9	69,366	24.48	2.721	1.136	78,800	3.091
		2016	2,896	9	71,755	24.78	2.753	1.120	80,366	3.083
		2017	2,951	9	74,640	25.29	2.810	1.104	82,403	3.103
		2018	2,999	9	77,381	25.80	2.867	1.086	84,036	3.113
		Total	14,372	9	355,531	24.74	2.749		399,160	3.086
	Total	2014	8,090	22.34	891,169	110.16	4.930		983,557	5.442
		2015	8,331	22.20	919,076	110.32	4.970		992,238	5.365
		2016	8,363	22.07	924,631	110.56	5.009		991,237	5.369
		2017	8,308	21.90	915,335	110.18	5.032		971,858	5.342
		2018	8,238	21.72	917,581	111.38	5.128		963,725	5.386
		Total	41,330	22.05	4,567,792	110.52	5.013		4,902,615	5.381
390	Buildings	2014	5,173	30	895,266	173.07	5.769	1.098	983,002	6.334
		2015	5,273	30	921,573	174.77	5.826	1.075	990,691	6.263
		2016	5,294	30	921,159	174.00	5.800	1.068	983,798	6.194
		2017	5,167	30	893,556	172.94	5.765	1.058	945,382	6.099
		2018	5,073	30	882,836	174.03	5.801	1.047	924,329	6.074
		Total	25,980	30	4,514,390	173.76	5.792		4,827,202	6.193
	Contents	2014	2,808	10	71,024	25.29	2.529	1.179	83,737	2.982
		2015	2,960	10	76,813	25.95	2.595	1.136	87,260	2.948
		2016	3,049	10	80,196	26.30	2.630	1.120	89,820	2.946
		2017	3,004	10	83,116	27.67	2.767	1.104	91,760	3.055
		2018	3,039	10	86,245	28.38	2.838	1.086	93,662	3.082
		Total	14,860	10	397,394	26.74	2.674		446,239	3.003
	Total	2014	7,981	22.96	966,290	121.07	5.272		1,066,739	5.821
		2015	8,233	22.81	998,386	121.27	5.317		1,077,951	5.740
		2016	8,343	22.69	1,001,355	120.02	5.289		1,073,617	5.671
		2017	8,171	22.65	976,672	119.53	5.278		1,037,142	5.605
		2018	8,112	22.51	969,081	119.46	5.308		1,017,991	5.576
		Total	40,840	22.72	4,911,784	120.27	5.293		5,273,441	5.683
Statewide	Buildings	2014	392,067	34.40	60,998,232	155.58	4.523	1.098	66,976,059	4.966
		2015	405,365	34.45	64,355,220	158.76	4.608	1.075	69,181,862	4.954
		2016	408,842	34.52	65,242,036	159.58	4.623	1.068	69,678,494	4.938
		2017	406,280	34.60	65,401,689	160.98	4.652	1.058	69,194,987	4.922
		2018	402,120	34.70	66,404,700	165.14	4.759	1.047	69,525,721	4.983
		Total	2,014,674	34.53	322,401,877	160.03	4.634		344,557,123	4.952
	Contents	2014	199,253	10.13	4,099,055	20.57	2.031	1.179	4,832,786	2.395
		2015	210,109	10.17	4,513,302	21.48	2.111	1.136	5,127,111	2.398
		2016	217,982	10.22	4,753,526	21.81	2.134	1.120	5,323,949	2.390
		2017	223,638	10.26	4,945,522	22.11	2.155	1.104	5,459,856	2.379
		2018	227,882	10.31	5,150,774	22.60	2.191	1.086	5,593,741	2.380
		Total	1,078,864	10.22	23,462,179	21.75	2.127		26,337,443	2.388
	Total	2014	591,320	26.22	65,097,287	110.09	4.199		71,808,845	4.631
		2015	615,474	26.16	68,868,522	111.90	4.277		74,308,972	4.614
		2016	626,824	26.07	69,995,562	111.67	4.284		75,002,444	4.590
		2017	629,918	25.96	70,347,211	111.68	4.302		74,654,843	4.565
		2018	630,002	25.88	71,555,474	113.58	4.389		75,119,461	4.607
		Total	3,093,538	26.06	345,864,056	111.80	4.291		370,894,565	4.601

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF EXPERIENCE BASE CLASS LOSS COST
FIRE

Territory	Year	(1) Earned House Years	(2) Trended Average Rating Factor	(3) Total Adjusted Incurred Losses	(4) Loss Trend Factor	(5) Trended Adjusted Incurred Losses (3)x(4)	(6) Trended Base Class Loss Cost (5)/[(1)x(2)]	(7) Trended Base Class Loss Cost with LAE (6) x 1.098
110	2014	22,938	11.148	1,159,795	0.961	1,114,563		
	2015	22,923	11.101	1,965,861	0.970	1,906,885		
	2016	22,701	11.114	1,731,029	0.980	1,696,408		
	2017	22,148	11.020	640,663	0.990	634,256		
	2018	21,458	10.742	1,367,520	1.000	1,367,520		
	Total	112,168	11.028	6,864,868		6,719,633	5.43	5.96
120	2014	31,091	8.539	1,396,162	0.961	1,341,712		
	2015	31,210	8.601	2,408,885	0.970	2,336,618		
	2016	30,977	8.664	1,434,131	0.980	1,405,448		
	2017	30,402	8.656	1,051,263	0.990	1,040,750		
	2018	29,014	8.423	751,429	1.000	751,429		
	Total	152,694	8.578	7,041,870		6,875,958	5.25	5.76
130	2014	7,668	5.212	121,356	0.961	116,623		
	2015	7,927	5.222	80,097	0.970	77,694		
	2016	8,007	5.255	534,129	0.980	523,446		
	2017	8,102	5.259	85,191	0.990	84,339		
	2018	8,241	5.186	314,793	1.000	314,793		
	Total	39,945	5.227	1,135,566		1,116,896	5.35	5.87
140	2014	47,357	4.466	2,562,307	0.961	2,462,377		
	2015	49,729	4.534	1,172,516	0.970	1,137,341		
	2016	50,405	4.537	2,122,602	0.980	2,080,150		
	2017	50,846	4.499	1,858,745	0.990	1,840,158		
	2018	51,103	4.435	2,457,754	1.000	2,457,754		
	Total	249,440	4.494	10,173,924		9,977,779	8.90	9.77
150	2014	27,486	4.531	1,095,317	0.961	1,052,600		
	2015	29,023	4.501	1,516,376	0.970	1,470,885		
	2016	30,010	4.473	1,999,703	0.980	1,959,709		
	2017	30,731	4.419	2,071,252	0.990	2,050,539		
	2018	31,196	4.333	2,360,549	1.000	2,360,549		
	Total	148,446	4.449	9,043,197		8,894,282	13.47	14.79
160	2014	26,532	4.584	1,869,406	0.961	1,796,499		
	2015	27,841	4.649	1,931,588	0.970	1,873,640		
	2016	28,212	4.637	2,066,260	0.980	2,024,935		
	2017	28,446	4.598	1,547,071	0.990	1,531,600		
	2018	28,441	4.553	849,509	1.000	849,509		
	Total	139,472	4.605	8,263,834		8,076,184	12.57	13.80

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF EXPERIENCE BASE CLASS LOSS COST
FIRE

Territory	Year	(1) Earned House Years	(2) Trended Average Rating Factor	(3) Total Adjusted Incurred Losses	(4) Loss Trend Factor	(5) Trended Adjusted Incurred Losses (3)x(4)	(6) Trended Base Class Loss Cost (5)/[(1)x(2)]	(7) Trended Base Class Loss Cost with LAE (6) x 1.098
170	2014	2,936	3.803	167,336	0.961	160,810		
	2015	3,187	3.861	324,138	0.970	314,414		
	2016	3,388	3.866	342,742	0.980	335,887		
	2017	3,517	3.836	145,027	0.990	143,577		
	2018	3,683	3.863	453,850	1.000	453,850		
	Total	16,711	3.847	1,433,093		1,408,538	21.91	24.06
180	2014	25,688	3.654	2,046,251	0.961	1,966,447		
	2015	27,435	3.664	1,987,619	0.970	1,927,990		
	2016	28,569	3.679	1,907,800	0.980	1,869,644		
	2017	29,406	3.688	1,963,740	0.990	1,944,103		
	2018	30,098	3.686	1,749,331	1.000	1,749,331		
	Total	141,196	3.675	9,654,741		9,457,515	18.23	20.02
190	2014	10,775	3.189	819,738	0.961	787,768		
	2015	11,304	3.228	475,364	0.970	461,103		
	2016	11,775	3.234	1,137,025	0.980	1,114,285		
	2017	12,115	3.248	866,542	0.990	857,877		
	2018	12,611	3.233	1,157,448	1.000	1,157,448		
	Total	58,580	3.227	4,456,117		4,378,480	23.16	25.43
200	2014	7,383	3.236	866,100	0.961	832,322		
	2015	7,512	3.311	564,046	0.970	547,125		
	2016	7,513	3.339	428,286	0.980	419,720		
	2017	7,583	3.388	978,209	0.990	968,427		
	2018	7,725	3.420	476,854	1.000	476,854		
	Total	37,716	3.340	3,313,495		3,244,448	25.76	28.28
210	2014	7,948	3.167	377,427	0.961	362,707		
	2015	8,451	3.177	422,211	0.970	409,545		
	2016	8,894	3.201	604,472	0.980	592,383		
	2017	9,120	3.190	981,290	0.990	971,477		
	2018	9,569	3.170	729,480	1.000	729,480		
	Total	43,982	3.181	3,114,880		3,065,592	21.91	24.06
220	2014	28,798	4.918	2,951,041	0.961	2,835,950		
	2015	30,768	4.939	1,870,911	0.970	1,814,784		
	2016	31,968	4.925	3,350,234	0.980	3,283,229		
	2017	32,713	5.046	2,510,315	0.990	2,485,212		
	2018	33,214	6.109	2,838,111	1.000	2,838,111		
	Total	157,461	5.197	13,520,612		13,257,286	16.20	17.79

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF EXPERIENCE BASE CLASS LOSS COST
FIRE

Territory	Year	(1) Earned House Years	(2) Trended Average Rating Factor	(3) Total Adjusted Incurred Losses	(4) Loss Trend Factor	(5) Trended Adjusted Incurred Losses (3)x(4)	(6) Trended Base Class Loss Cost (5)/[(1)x(2)]	(7) Trended Base Class Loss Cost with LAE (6) x 1.098
230	2014	19,002	2.619	1,316,017	0.961	1,264,692		
	2015	19,557	2.620	894,483	0.970	867,649		
	2016	19,834	2.620	2,152,769	0.980	2,109,714		
	2017	20,016	2.610	1,837,567	0.990	1,819,191		
	2018	19,985	2.637	1,506,396	1.000	1,506,396		
	Total	98,394	2.621	7,707,232		7,567,642	29.34	32.22
240	2014	24,127	3.556	1,611,042	0.961	1,548,211		
	2015	25,495	3.565	1,439,795	0.970	1,396,601		
	2016	26,619	3.529	2,139,859	0.980	2,097,062		
	2017	27,310	3.514	2,042,885	0.990	2,022,456		
	2018	27,898	3.487	2,753,071	1.000	2,753,071		
	Total	131,449	3.529	9,986,652		9,817,401	21.16	23.23
250	2014	14,548	4.757	1,477,898	0.961	1,420,260		
	2015	15,824	4.820	1,468,038	0.970	1,423,997		
	2016	16,426	4.836	1,486,860	0.980	1,457,123		
	2017	16,863	4.924	1,180,665	0.990	1,168,858		
	2018	16,992	5.031	1,622,928	1.000	1,622,928		
	Total	80,653	4.877	7,236,389		7,093,166	18.03	19.80
260	2014	10,904	3.755	906,745	0.961	871,382		
	2015	11,186	3.607	592,891	0.970	575,104		
	2016	11,623	3.658	1,079,560	0.980	1,057,969		
	2017	12,175	3.690	819,753	0.990	811,555		
	2018	12,491	3.673	1,492,519	1.000	1,492,519		
	Total	58,379	3.676	4,891,468		4,808,529	22.41	24.61
270	2014	30,832	6.227	2,339,063	0.961	2,247,840		
	2015	32,781	6.156	2,419,019	0.970	2,346,448		
	2016	33,590	6.118	2,297,016	0.980	2,251,076		
	2017	34,062	6.161	1,700,333	0.990	1,683,330		
	2018	34,756	6.256	2,392,610	1.000	2,392,610		
	Total	166,021	6.183	11,148,041		10,921,303	10.64	11.68
280	2014	6,827	5.806	253,953	0.961	244,049		
	2015	7,016	5.677	1,148,694	0.970	1,114,233		
	2016	7,176	5.549	354,345	0.980	347,258		
	2017	7,334	5.550	172,880	0.990	171,151		
	2018	7,474	5.625	260,915	1.000	260,915		
	Total	35,827	5.640	2,190,787		2,137,606	10.58	11.62

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF EXPERIENCE BASE CLASS LOSS COST
FIRE

Territory	Year	(1) Earned House Years	(2) Trended Average Rating Factor	(3) Total Adjusted Incurred Losses	(4) Loss Trend Factor	(5) Trended Adjusted Incurred Losses (3)x(4)	(6) Trended Base Class Loss Cost (5)/[(1)x(2)]	(7) Trended Base Class Loss Cost with LAE (6) x 1.098
290	2014	8,357	5.158	268,173	0.961	257,714		
	2015	8,939	5.176	849,710	0.970	824,219		
	2016	9,222	5.180	531,361	0.980	520,734		
	2017	9,228	5.249	438,015	0.990	433,635		
	2018	9,250	5.347	592,615	1.000	592,615		
	Total	44,996	5.223	2,679,874		2,628,917	11.19	12.29
300	2014	10,243	3.039	808,013	0.961	776,500		
	2015	10,489	3.059	968,541	0.970	939,485		
	2016	10,651	3.105	721,268	0.980	706,843		
	2017	10,573	3.100	785,866	0.990	778,007		
	2018	10,577	3.105	1,081,751	1.000	1,081,751		
	Total	52,533	3.082	4,365,439		4,282,586	26.45	29.04
310	2014	54,074	4.492	3,720,175	0.961	3,575,088		
	2015	56,462	4.492	3,662,646	0.970	3,552,767		
	2016	57,155	4.459	3,999,384	0.980	3,919,396		
	2017	56,951	4.422	2,829,900	0.990	2,801,601		
	2018	56,475	4.402	3,215,562	1.000	3,215,562		
	Total	281,117	4.453	17,427,667		17,064,414	13.63	14.97
320	2014	25,585	4.602	1,789,000	0.961	1,719,229		
	2015	26,499	4.547	1,927,226	0.970	1,869,409		
	2016	27,040	4.506	2,502,916	0.980	2,452,858		
	2017	27,027	4.423	2,789,717	0.990	2,761,820		
	2018	26,758	4.346	1,604,527	1.000	1,604,527		
	Total	132,909	4.484	10,613,386		10,407,843	17.46	19.17
330	2014	2,475	3.706	17,570	0.961	16,885		
	2015	2,496	3.651	219,107	0.970	212,534		
	2016	2,500	3.647	285,326	0.980	279,619		
	2017	2,470	3.615	249,533	0.990	247,038		
	2018	2,446	3.560	104,095	1.000	104,095		
	Total	12,387	3.637	875,631		860,171	19.09	20.96
340	2014	48,721	5.805	2,902,105	0.961	2,788,923		
	2015	49,983	5.711	3,347,913	0.970	3,247,476		
	2016	50,128	5.614	3,423,776	0.980	3,355,300		
	2017	49,546	5.517	2,846,922	0.990	2,818,453		
	2018	48,866	5.550	4,091,158	1.000	4,091,158		
	Total	247,244	5.640	16,611,874		16,301,310	11.69	12.84

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF EXPERIENCE BASE CLASS LOSS COST
FIRE

Territory	Year	(1) Earned House Years	(2) Trended Average Rating Factor	(3) Total Adjusted Incurred Losses	(4) Loss Trend Factor	(5) Trended Adjusted Incurred Losses (3)x(4)	(6) Trended Base Class Loss Cost (5)/[(1)x(2)]	(7) Trended Base Class Loss Cost with LAE (6) x 1.098
350	2014	23,508	4.202	1,903,957	0.961	1,829,703		
	2015	24,201	4.155	1,355,603	0.970	1,314,935		
	2016	24,596	4.144	2,434,098	0.980	2,385,416		
	2017	24,386	4.096	1,816,937	0.990	1,798,768		
	2018	24,015	4.083	1,662,045	1.000	1,662,045		
	Total	120,706	4.136	9,172,640		8,990,866	18.01	19.77
360	2014	46,374	4.796	1,824,813	0.961	1,753,645		
	2015	47,537	4.759	2,782,347	0.970	2,698,877		
	2016	47,961	4.735	3,575,655	0.980	3,504,142		
	2017	47,269	4.683	2,171,130	0.990	2,149,419		
	2018	46,306	4.684	1,699,154	1.000	1,699,154		
	Total	235,447	4.732	12,053,099		11,805,236	10.60	11.64
370	2014	3,072	4.717	163,874	0.961	157,483		
	2015	3,135	4.806	324,100	0.970	314,377		
	2016	3,178	4.793	57,332	0.980	56,185		
	2017	3,100	4.733	42,855	0.990	42,426		
	2018	3,010	4.668	406,096	1.000	406,096		
	Total	15,495	4.745	994,257		976,568	13.28	14.58
380	2014	8,090	5.442	545,075	0.961	523,817		
	2015	8,331	5.365	98,239	0.970	95,292		
	2016	8,363	5.369	690,871	0.980	677,054		
	2017	8,308	5.342	754,279	0.990	746,736		
	2018	8,238	5.386	607,276	1.000	607,276		
	Total	41,330	5.381	2,695,740		2,650,175	11.92	13.09
390	2014	7,981	5.821	516,110	0.961	495,982		
	2015	8,233	5.740	455,836	0.970	442,161		
	2016	8,343	5.671	606,583	0.980	594,451		
	2017	8,171	5.605	450,784	0.990	446,276		
	2018	8,112	5.576	944,974	1.000	944,974		
	Total	40,840	5.683	2,974,287		2,923,844	12.60	13.83
Statewide	2014	591,320	4.631	37,795,819	0.961	36,321,782		
	2015	615,474	4.614	38,673,800	0.970	37,513,586		
	2016	626,824	4.590	45,997,392	0.980	45,077,444		
	2017	629,918	4.565	37,629,329	0.990	37,253,036		
	2018	630,002	4.607	41,544,320	1.000	41,544,320		
	Total	3,093,538	4.601	201,640,660		197,710,168	13.89	15.25

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DERIVATION OF EXCESS FACTOR (EXCLUDING HURRICANE LOSSES)
EXTENDED COVERAGE

Year	(1) Reported Earned Premium	(2) Developed Incurred Losses	(3) Loss Ratio (2)/(1)	(4) Normal Loss Ratio	(5) Excess Loss Ratio (3)-(4)	(6) Total Excess Losses (1)x(5)	(7) Excess Ratio (6)/(2)
1989	24,622,966	13,459,214	0.547	0.500	0.047	1,157,279	0.086
1990	25,923,637	5,278,639	0.204	0.204	0.000	0	0.000
1991	28,100,632	4,332,959	0.154	0.154	0.000	0	0.000
1992	29,900,438	4,742,564	0.159	0.159	0.000	0	0.000
1993	31,889,553	16,886,073	0.530	0.500	0.030	956,687	0.057
1994	34,062,149	8,139,204	0.239	0.239	0.000	0	0.000
1995	36,469,795	7,946,434	0.218	0.218	0.000	0	0.000
1996	40,105,731	10,177,932	0.254	0.254	0.000	0	0.000
1997	45,956,155	8,042,733	0.175	0.175	0.000	0	0.000
1998	50,483,351	19,677,761	0.390	0.390	0.000	0	0.000
1999	57,917,971	26,401,571	0.456	0.456	0.000	0	0.000
2000	64,276,450	14,556,461	0.226	0.226	0.000	0	0.000
2001	58,472,402	9,227,560	0.158	0.158	0.000	0	0.000
2002	62,801,958	15,725,972	0.250	0.250	0.000	0	0.000
2003	70,166,881	19,351,691	0.276	0.276	0.000	0	0.000
2004	77,384,514	15,018,657	0.194	0.194	0.000	0	0.000
2005	86,660,735	15,298,940	0.177	0.177	0.000	0	0.000
2006	93,459,391	16,657,822	0.178	0.178	0.000	0	0.000
2007	107,421,691	18,390,566	0.171	0.171	0.000	0	0.000
2008	88,217,778	13,999,208	0.159	0.159	0.000	0	0.000
2009	111,244,031	29,274,749	0.263	0.263	0.000	0	0.000
2010	112,338,979	36,014,031	0.321	0.321	0.000	0	0.000
2011	111,845,007	106,994,195	0.957	0.500	0.457	51,113,168	0.478
2012	114,730,408	43,404,563	0.378	0.378	0.000	0	0.000
2013	130,312,911	36,515,999	0.280	0.280	0.000	0	0.000
2014	129,484,769	41,392,117	0.320	0.320	0.000	0	0.000
2015	144,645,016	41,215,981	0.285	0.285	0.000	0	0.000
2016	151,088,996	43,581,317	0.288	0.288	0.000	0	0.000
2017	151,080,227	50,538,717	0.335	0.335	0.000	0	0.000
2018	150,733,670	58,281,952	0.387	0.387	0.000	0	0.000
Total	2,421,798,191	750,525,582	8.929	8.395	0.534	53,227,134	
Average			0.298	0.280	0.018		

Average Excess Loss Ratio = Avg of column (5) 0.018
Average Normal Loss Ratio = Avg of column (4) 0.280

Excess Factor = 1.0 + (avg (5)/avg (4)) =
= 1.0 + (0.018 / 0.280) = 1.064

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DEVELOPMENT OF EXCESS LOSSES ON A $500 DEDUCTIBLE LEVEL
EXTENDED COVERAGE

Accident Year	Non-Hurricane Adjusted Incurred Losses	Excess Ratio	Adjusted Incurred Excess Losses
2014	43,989,921	0.000	0
2015	44,270,731	0.000	0
2016	46,909,533	0.000	0
2017	54,838,811	0.000	0
2018	63,284,695	0.000	0

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TERRITORY EXCESS LOSSES
EXTENDED COVERAGE

Territory Group	Territory	Year	(1) Reported Earned Premium	(2) Non-Hurricane Developed Incurred Losses	(3) Loss Ratio (2)/(1)	(4) Normal Loss Ratio	(5) Excess Loss Ratio (3)-(4)	(6) Total Excess Losses (1)x(5)	(7) Excess Ratio (6)/(2)
Beach	110	2014	19,630,172	1,090,278	0.056	0.056	0.000	0	0.000
		2015	21,146,567	1,951,021	0.092	0.092	0.000	0	0.000
		2016	21,560,925	1,742,161	0.081	0.081	0.000	0	0.000
		2017	21,211,378	1,937,256	0.091	0.091	0.000	0	0.000
		2018	20,331,286	2,450,647	0.121	0.121	0.000	0	0.000
		Total	103,880,328	9,171,363				0	
	120	2014	23,067,883	1,489,007	0.065	0.065	0.000	0	0.000
		2015	25,077,366	1,795,582	0.072	0.072	0.000	0	0.000
		2016	25,709,441	1,002,532	0.039	0.039	0.000	0	0.000
		2017	25,549,943	1,686,182	0.066	0.066	0.000	0	0.000
		2018	24,163,148	2,566,717	0.106	0.106	0.000	0	0.000
		Total	123,567,781	8,540,020				0	
Coast	130	2014	1,719,362	240,601	0.140	0.140	0.000	0	0.000
		2015	2,034,628	475,166	0.234	0.234	0.000	0	0.000
		2016	2,113,400	300,512	0.142	0.142	0.000	0	0.000
		2017	2,119,154	285,935	0.135	0.135	0.000	0	0.000
		2018	2,171,590	376,152	0.173	0.173	0.000	0	0.000
		Total	10,158,134	1,678,366				0	
	140	2014	12,995,672	1,844,577	0.142	0.142	0.000	0	0.000
		2015	15,134,637	1,670,570	0.110	0.110	0.000	0	0.000
		2016	15,938,184	1,699,358	0.107	0.107	0.000	0	0.000
		2017	15,666,202	2,518,835	0.161	0.161	0.000	0	0.000
		2018	15,629,243	3,034,960	0.194	0.194	0.000	0	0.000
		Total	75,363,938	10,768,300				0	
	150	2014	5,985,736	3,240,515	0.541	0.500	0.041	247,647	0.076
		2015	6,963,195	1,088,134	0.156	0.156	0.000	0	0.000
		2016	7,376,679	878,499	0.119	0.119	0.000	0	0.000
		2017	7,465,498	1,117,938	0.150	0.150	0.000	0	0.000
		2018	7,592,364	2,190,038	0.288	0.288	0.000	0	0.000
		Total	35,383,472	8,515,124				247,647	
	160	2014	7,698,307	1,233,614	0.160	0.160	0.000	0	0.000
		2015	8,926,064	1,116,577	0.125	0.125	0.000	0	0.000
		2016	9,251,061	1,228,248	0.133	0.133	0.000	0	0.000
		2017	8,710,035	1,326,180	0.152	0.152	0.000	0	0.000
		2018	8,004,517	2,074,030	0.259	0.259	0.000	0	0.000
		Total	42,589,984	6,978,649				0	

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TERRITORY EXCESS LOSSES
EXTENDED COVERAGE

Territory Group	Territory	Year	(1) Reported Earned Premium	(2) Non-Hurricane Developed Incurred Losses	(3) Loss Ratio (2)/(1)	(4) Normal Loss Ratio	(5) Excess Loss Ratio (3)-(4)	(6) Total Excess Losses (1)x(5)	(7) Excess Ratio (6)/(2)
Inland	170	2014	381,866	73,006	0.191	0.191	0.000	0	0.000
		2015	451,798	137,622	0.305	0.305	0.000	0	0.000
		2016	486,645	102,030	0.210	0.210	0.000	0	0.000
		2017	504,196	111,817	0.222	0.222	0.000	0	0.000
		2018	547,239	252,174	0.461	0.461	0.000	0	0.000
		Total	2,371,744	676,649				0	
	180	2014	4,026,678	1,355,963	0.337	0.337	0.000	0	0.000
		2015	4,695,872	1,098,652	0.234	0.234	0.000	0	0.000
		2016	5,090,439	1,183,679	0.233	0.233	0.000	0	0.000
		2017	5,252,557	1,139,517	0.217	0.217	0.000	0	0.000
		2018	5,505,653	1,254,124	0.228	0.228	0.000	0	0.000
		Total	24,571,199	6,031,935				0	
	190	2014	1,364,795	309,620	0.227	0.227	0.000	0	0.000
		2015	1,563,658	472,496	0.302	0.302	0.000	0	0.000
		2016	1,679,940	521,269	0.310	0.310	0.000	0	0.000
		2017	1,744,300	451,672	0.259	0.259	0.000	0	0.000
		2018	1,859,615	476,819	0.256	0.256	0.000	0	0.000
		Total	8,212,308	2,231,876				0	
	200	2014	775,550	296,202	0.382	0.382	0.000	0	0.000
		2015	886,498	243,128	0.274	0.274	0.000	0	0.000
		2016	940,605	307,575	0.327	0.327	0.000	0	0.000
		2017	967,230	221,529	0.229	0.229	0.000	0	0.000
		2018	997,565	181,066	0.182	0.182	0.000	0	0.000
		Total	4,567,448	1,249,500				0	
	210	2014	927,010	213,303	0.230	0.230	0.000	0	0.000
		2015	1,065,981	255,615	0.240	0.240	0.000	0	0.000
		2016	1,167,345	366,645	0.314	0.314	0.000	0	0.000
		2017	1,194,866	373,841	0.313	0.313	0.000	0	0.000
		2018	1,297,761	369,795	0.285	0.285	0.000	0	0.000
		Total	5,652,963	1,579,199				0	
	220	2014	5,840,569	4,783,985	0.819	0.500	0.319	1,863,701	0.390
		2015	6,790,549	4,249,831	0.626	0.500	0.126	854,557	0.201
		2016	7,354,483	4,722,212	0.642	0.500	0.142	1,044,971	0.221
		2017	7,725,701	4,513,569	0.584	0.500	0.084	650,719	0.144
		2018	8,185,574	5,196,454	0.635	0.500	0.135	1,103,667	0.212
		Total	35,896,876	23,466,051				5,517,615	

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TERRITORY EXCESS LOSSES
EXTENDED COVERAGE

Territory Group	Territory	Year	(1) Reported Earned Premium	(2) Non-Hurricane Developed Incurred Losses	(3) Loss Ratio (2)/(1)	(4) Normal Loss Ratio	(5) Excess Loss Ratio (3)-(4)	(6) Total Excess Losses (1)x(5)	(7) Excess Ratio (6)/(2)
Inland	230	2014	1,897,218	434,247	0.229	0.229	0.000	0	0.000
		2015	2,136,077	561,454	0.263	0.263	0.000	0	0.000
		2016	2,231,233	875,320	0.392	0.392	0.000	0	0.000
		2017	2,247,607	246,277	0.110	0.110	0.000	0	0.000
		2018	2,289,037	372,530	0.163	0.163	0.000	0	0.000
		Total	10,801,172	2,489,828				0	
	240	2014	3,009,757	1,190,451	0.396	0.396	0.000	0	0.000
		2015	3,450,923	3,179,271	0.921	0.500	0.421	1,453,810	0.457
		2016	3,681,071	1,397,257	0.380	0.380	0.000	0	0.000
		2017	3,778,258	1,227,754	0.325	0.325	0.000	0	0.000
		2018	3,962,995	1,992,222	0.503	0.500	0.003	10,724	0.005
		Total	17,883,004	8,986,955				1,464,534	
	250	2014	2,817,623	1,127,953	0.400	0.400	0.000	0	0.000
		2015	3,352,740	1,348,699	0.402	0.402	0.000	0	0.000
		2016	3,594,021	1,354,363	0.377	0.377	0.000	0	0.000
		2017	3,721,233	1,318,020	0.354	0.354	0.000	0	0.000
		2018	3,879,688	1,843,040	0.475	0.475	0.000	0	0.000
		Total	17,365,305	6,992,075				0	
	260	2014	1,080,831	274,709	0.254	0.254	0.000	0	0.000
		2015	1,089,802	576,505	0.529	0.500	0.029	31,604	0.055
		2016	1,172,434	1,811,190	1.545	0.500	1.045	1,224,973	0.676
		2017	1,291,167	372,044	0.288	0.288	0.000	0	0.000
		2018	1,356,764	691,979	0.510	0.500	0.010	13,597	0.020
		Total	5,990,998	3,726,427				1,270,174	
	270	2014	6,116,072	3,436,977	0.562	0.500	0.062	378,941	0.110
		2015	6,829,291	3,477,386	0.509	0.500	0.009	62,740	0.018
		2016	7,315,073	4,517,442	0.618	0.500	0.118	859,906	0.190
		2017	7,514,999	7,007,013	0.932	0.500	0.432	3,249,514	0.464
		2018	7,929,232	4,728,210	0.596	0.500	0.096	763,594	0.161
		Total	35,704,667	23,167,028				5,314,695	
	280	2014	1,094,429	416,658	0.381	0.381	0.000	0	0.000
		2015	1,195,580	348,603	0.292	0.292	0.000	0	0.000
		2016	1,235,916	450,875	0.365	0.365	0.000	0	0.000
		2017	1,271,224	678,794	0.534	0.500	0.034	43,182	0.064
		2018	1,354,604	537,940	0.397	0.397	0.000	0	0.000
		Total	6,151,753	2,432,870				43,182	

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TERRITORY EXCESS LOSSES
EXTENDED COVERAGE

Territory Group	Territory	Year	(1) Reported Earned Premium	(2) Non-Hurricane Developed Incurred Losses	(3) Loss Ratio (2)/(1)	(4) Normal Loss Ratio	(5) Excess Loss Ratio (3)-(4)	(6) Total Excess Losses (1)x(5)	(7) Excess Ratio (6)/(2)
Inland	290	2014	1,811,354	904,610	0.499	0.499	0.000	0	0.000
		2015	2,083,452	693,520	0.333	0.333	0.000	0	0.000
		2016	2,222,388	566,461	0.255	0.255	0.000	0	0.000
		2017	2,229,961	630,537	0.283	0.283	0.000	0	0.000
		2018	2,285,784	1,084,804	0.475	0.475	0.000	0	0.000
		Total	10,632,939	3,879,932				0	
	300	2014	806,891	211,607	0.262	0.262	0.000	0	0.000
		2015	892,756	407,585	0.457	0.457	0.000	0	0.000
		2016	935,877	410,097	0.438	0.438	0.000	0	0.000
		2017	938,730	418,515	0.446	0.446	0.000	0	0.000
		2018	955,571	420,667	0.440	0.440	0.000	0	0.000
		Total	4,529,825	1,868,471				0	
	310	2014	6,169,662	4,163,180	0.675	0.500	0.175	1,078,349	0.259
		2015	6,847,701	3,415,616	0.499	0.499	0.000	0	0.000
		2016	7,166,357	4,243,260	0.592	0.500	0.092	660,082	0.156
		2017	7,228,231	4,761,364	0.659	0.500	0.159	1,147,249	0.241
		2018	7,375,366	8,831,014	1.197	0.500	0.697	5,143,331	0.582
		Total	34,787,317	25,414,434				8,029,011	
	320	2014	3,331,067	1,967,145	0.591	0.500	0.091	301,612	0.153
		2015	3,640,626	1,922,800	0.528	0.500	0.028	102,487	0.053
		2016	3,809,196	2,148,626	0.564	0.500	0.064	244,028	0.114
		2017	3,817,560	2,394,825	0.627	0.500	0.127	486,045	0.203
		2018	3,862,266	2,514,525	0.651	0.500	0.151	583,392	0.232
		Total	18,460,715	10,947,921				1,717,564	
	330	2014	185,904	105,365	0.567	0.500	0.067	12,413	0.118
		2015	196,937	72,346	0.367	0.367	0.000	0	0.000
		2016	200,677	169,623	0.845	0.500	0.345	69,285	0.408
		2017	201,409	311,318	1.546	0.500	1.046	210,614	0.677
		2018	204,581	159,809	0.781	0.500	0.281	57,519	0.360
		Total	989,508	818,461				349,831	
	340	2014	6,690,834	6,088,070	0.910	0.500	0.410	2,742,653	0.450
		2015	7,248,770	6,035,514	0.833	0.500	0.333	2,411,129	0.399
		2016	7,467,483	6,857,027	0.918	0.500	0.418	3,123,286	0.455
		2017	7,434,958	7,282,107	0.979	0.500	0.479	3,564,628	0.490
		2018	7,564,648	7,117,443	0.941	0.500	0.441	3,335,119	0.469
		Total	36,406,693	33,380,161				15,176,815	

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TERRITORY EXCESS LOSSES
EXTENDED COVERAGE

Territory Group	Territory	Year	(1) Reported Earned Premium	(2) Non-Hurricane Developed Incurred Losses	(3) Loss Ratio (2)/(1)	(4) Normal Loss Ratio	(5) Excess Loss Ratio (3)-(4)	(6) Total Excess Losses (1)x(5)	(7) Excess Ratio (6)/(2)
Inland	350	2014	2,488,632	1,234,128	0.496	0.496	0.000	0	0.000
		2015	2,687,251	1,363,023	0.507	0.500	0.007	19,398	0.014
		2016	2,824,860	1,437,337	0.509	0.500	0.009	24,907	0.017
		2017	2,816,151	2,308,282	0.820	0.500	0.320	900,207	0.390
		2018	2,837,074	2,547,061	0.898	0.500	0.398	1,128,524	0.443
		Total	13,653,968	8,889,831				2,073,036	
	360	2014	5,422,315	2,802,673	0.517	0.500	0.017	91,515	0.033
		2015	5,887,619	2,121,373	0.360	0.360	0.000	0	0.000
		2016	6,095,235	2,393,572	0.393	0.393	0.000	0	0.000
		2017	6,022,889	4,657,846	0.773	0.500	0.273	1,646,402	0.353
		2018	6,082,067	3,592,467	0.591	0.500	0.091	551,434	0.153
		Total	29,510,125	15,567,931				45,078,056	
	370	2014	281,744	129,720	0.460	0.460	0.000	0	0.000
		2015	311,184	188,796	0.607	0.500	0.107	33,204	0.176
		2016	325,883	91,825	0.282	0.282	0.000	0	0.000
		2017	326,609	118,250	0.362	0.362	0.000	0	0.000
		2018	333,904	239,369	0.717	0.500	0.217	72,417	0.303
		Total	1,579,324	767,960				105,621	
	380	2014	913,918	443,872	0.486	0.486	0.000	0	0.000
		2015	1,011,778	428,600	0.424	0.424	0.000	0	0.000
		2016	1,050,771	462,995	0.441	0.441	0.000	0	0.000
		2017	1,048,948	545,407	0.520	0.500	0.020	20,933	0.038
		2018	1,081,013	645,551	0.597	0.500	0.097	105,045	0.163
		Total	5,106,428	2,526,425				125,978	
	390	2014	952,918	290,081	0.304	0.304	0.000	0	0.000
		2015	1,045,716	520,496	0.498	0.498	0.000	0	0.000
		2016	1,091,374	339,327	0.311	0.311	0.000	0	0.000
		2017	1,079,233	576,093	0.534	0.500	0.034	36,477	0.063
		2018	1,093,521	540,345	0.494	0.494	0.000	0	0.000
		Total	5,262,762	2,266,342				36,477	
Statewide		2014	129,484,769	41,392,117				6,716,831	
		2015	144,645,016	41,215,981				4,968,929	
		2016	151,088,996	43,581,317				7,251,438	
		2017	151,080,227	50,538,717				11,955,970	
		2018	150,733,670	58,281,952				12,868,363	
		Total	727,032,678	235,010,084				43,761,531	

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DEVELOPMENT OF TERRITORY EXCESS LOSSES ON A $500 DEDUCTIBLE LEVEL
EXTENDED COVERAGE

Territory Group	Territory	Year	(1) Total Adjusted Incurred Losses	(2) Hurricane Adjusted Incurred Losses	(3) Non-Hurricane Adjusted Incurred Losses (1) - (2)	(4) Excess Ratio	(5) Adjusted Incurred Excess Losses (3) x (4)
Beach	110	2014	2,945,283	1,657,955	1,287,328	0.000	0
		2015	2,330,870	57,219	2,273,651	0.000	0
		2016	7,166,851	5,119,699	2,047,152	0.000	0
		2017	2,346,866	10,884	2,335,982	0.000	0
		2018	3,716,057	785,903	2,930,154	0.000	0
		Total	18,505,927	7,631,660	10,874,267		0
	120	2014	2,113,363	316,852	1,796,511	0.000	0
		2015	2,392,202	282,005	2,110,197	0.000	0
		2016	4,212,602	3,024,948	1,187,654	0.000	0
		2017	2,027,865	29,090	1,998,775	0.000	0
		2018	147,304,077	144,214,388	3,089,689	0.000	0
		Total	158,050,109	147,867,283	10,182,826		0
Coast	130	2014	361,435	102,955	258,480	0.000	0
		2015	560,932	32,658	528,274	0.000	0
		2016	1,937,452	1,618,470	318,982	0.000	0
		2017	348,460	15,380	333,080	0.000	0
		2018	4,414,615	3,998,968	415,647	0.000	0
		Total	7,622,894	5,768,431	1,854,463		0
	140	2014	2,654,845	595,718	2,059,127	0.000	0
		2015	2,364,257	489,359	1,874,898	0.000	0
		2016	7,055,878	5,107,526	1,948,352	0.000	0
		2017	2,915,617	4,744	2,910,873	0.000	0
		2018	154,962,467	151,462,350	3,500,117	0.000	0
		Total	169,953,064	157,659,697	12,293,367		0
	150	2014	3,629,573	76,309	3,553,264	0.076	271,548
		2015	1,319,150	99,189	1,219,961	0.000	0
		2016	3,805,099	2,856,107	948,992	0.000	0
		2017	1,263,928	16,616	1,247,312	0.000	0
		2018	25,933,618	23,451,534	2,482,084	0.000	0
		Total	35,951,368	26,499,755	9,451,613		271,548
	160	2014	1,394,304	44,942	1,349,362	0.000	0
		2015	1,453,588	241,884	1,211,704	0.000	0
		2016	5,387,467	4,047,185	1,340,282	0.000	0
		2017	1,473,473	0	1,473,473	0.000	0
		2018	87,550,791	85,185,268	2,365,523	0.000	0
		Total	97,259,623	89,519,279	7,740,344		0

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DEVELOPMENT OF TERRITORY EXCESS LOSSES ON A $500 DEDUCTIBLE LEVEL
EXTENDED COVERAGE

Territory Group	Territory	Year	(1) Total Adjusted Incurred Losses	(2) Hurricane Adjusted Incurred Losses	(3) Non-Hurricane Adjusted Incurred Losses (1) - (2)	(4) Excess Ratio	(5) Adjusted Incurred Excess Losses (3) x (4)
Inland	170	2014	79,435	3,546	75,889	0.000	0
		2015	150,766	4,869	145,897	0.000	0
		2016	347,329	238,210	109,119	0.000	0
		2017	121,884	0	121,884	0.000	0
		2018	337,033	73,147	263,886	0.000	0
		Total	1,036,447	319,772	716,675		0
	180	2014	1,485,495	57,897	1,427,598	0.000	0
		2015	1,254,878	95,767	1,159,111	0.000	0
		2016	5,839,422	4,581,249	1,258,173	0.000	0
		2017	1,211,265	7,569	1,203,696	0.000	0
		2018	7,695,443	6,361,763	1,333,680	0.000	0
		Total	17,486,503	11,104,245	6,382,258		0
	190	2014	390,256	70,557	319,699	0.000	0
		2015	539,790	35,854	503,936	0.000	0
		2016	3,544,297	2,996,707	547,590	0.000	0
		2017	472,314	0	472,314	0.000	0
		2018	11,249,892	10,744,969	504,923	0.000	0
		Total	16,196,549	13,848,087	2,348,462		0
	200	2014	306,187	0	306,187	0.000	0
		2015	380,864	125,197	255,667	0.000	0
		2016	4,410,799	4,086,686	324,113	0.000	0
		2017	248,031	0	248,031	0.000	0
		2018	10,899,743	10,710,685	189,058	0.000	0
		Total	16,245,624	14,922,568	1,323,056		0
	210	2014	232,530	11,249	221,281	0.000	0
		2015	293,270	23,434	269,836	0.000	0
		2016	1,187,808	792,015	395,793	0.000	0
		2017	385,040	1,835	383,205	0.000	0
		2018	1,091,619	702,839	388,780	0.000	0
		Total	3,190,267	1,531,372	1,658,895		0
	220	2014	5,062,577	76,788	4,985,789	0.390	1,942,318
		2015	4,667,316	228,585	4,438,731	0.201	892,541
		2016	15,686,974	10,773,970	4,913,004	0.221	1,087,191
		2017	4,762,621	36,440	4,726,181	0.144	681,371
		2018	29,332,774	23,923,589	5,409,185	0.212	1,148,849
		Total	59,512,262	35,039,372	24,472,890		5,752,270

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DEVELOPMENT OF TERRITORY EXCESS LOSSES ON A $500 DEDUCTIBLE LEVEL
EXTENDED COVERAGE

Territory Group	Territory	Year	(1) Total Adjusted Incurred Losses	(2) Hurricane Adjusted Incurred Losses	(3) Non-Hurricane Adjusted Incurred Losses (1) - (2)	(4) Excess Ratio	(5) Adjusted Incurred Excess Losses (3) x (4)
Inland	230	2014	463,982	7,691	456,291	0.000	0
		2015	679,611	100,262	579,349	0.000	0
		2016	10,085,957	9,175,074	910,883	0.000	0
		2017	255,672	896	254,776	0.000	0
		2018	16,951,545	16,557,782	393,763	0.000	0
		Total	28,436,767	25,841,705	2,595,062		0
	240	2014	1,238,516	13,955	1,224,561	0.000	0
		2015	3,496,740	88,814	3,407,926	0.457	1,558,369
		2016	3,884,833	2,402,163	1,482,670	0.000	0
		2017	1,344,117	10,223	1,333,894	0.000	0
		2018	4,970,648	2,853,103	2,117,545	0.005	11,399
		Total	14,934,854	5,368,258	9,566,596		1,569,767
	250	2014	1,183,483	12,791	1,170,692	0.000	0
		2015	1,506,972	92,105	1,414,867	0.000	0
		2016	4,196,632	2,772,499	1,424,133	0.000	0
		2017	1,394,767	13,200	1,381,567	0.000	0
		2018	12,087,541	10,133,716	1,953,825	0.000	0
		Total	20,369,395	13,024,311	7,345,084		0
	260	2014	285,997	971	285,026	0.000	0
		2015	637,451	27,616	609,835	0.055	33,431
		2016	2,128,476	173,504	1,954,972	0.676	1,322,218
		2017	400,589	0	400,589	0.000	0
		2018	1,710,373	950,819	759,554	0.020	14,925
		Total	5,162,886	1,152,910	4,009,976		1,370,574
	270	2014	3,673,854	8,565	3,665,289	0.110	404,113
		2015	3,876,004	144,769	3,731,235	0.018	67,320
		2016	6,592,829	1,679,635	4,913,194	0.190	935,238
		2017	7,702,387	7,775	7,694,612	0.464	3,568,389
		2018	6,963,455	1,857,616	5,105,839	0.161	824,580
		Total	28,808,529	3,698,360	25,110,169		5,799,641
	280	2014	441,164	2,371	438,793	0.000	0
		2015	391,156	22,264	368,892	0.000	0
		2016	571,136	82,025	489,111	0.000	0
		2017	740,243	0	740,243	0.064	47,091
		2018	1,131,382	544,161	587,221	0.000	0
		Total	3,275,081	650,821	2,624,260		47,091

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DEVELOPMENT OF TERRITORY EXCESS LOSSES ON A $500 DEDUCTIBLE LEVEL
EXTENDED COVERAGE

Territory Group	Territory	Year	(1) Total Adjusted Incurred Losses	(2) Hurricane Adjusted Incurred Losses	(3) Non-Hurricane Adjusted Incurred Losses (1) - (2)	(4) Excess Ratio	(5) Adjusted Incurred Excess Losses (3) x (4)
Inland	290	2014	981,609	6,784	974,825	0.000	0
		2015	788,505	54,782	733,723	0.000	0
		2016	1,561,267	961,918	599,349	0.000	0
		2017	685,041	9,243	675,798	0.000	0
		2018	3,011,708	1,873,926	1,137,782	0.000	0
		Total	7,028,130	2,906,653	4,121,477		0
	300	2014	223,939	1,641	222,298	0.000	0
		2015	489,512	60,466	429,046	0.000	0
		2016	922,825	489,752	433,073	0.000	0
		2017	454,541	0	454,541	0.000	0
		2018	3,572,467	3,121,876	450,591	0.000	0
		Total	5,663,284	3,673,735	1,989,549		0
	310	2014	4,323,770	16,998	4,306,772	0.259	1,115,542
		2015	3,886,154	254,273	3,631,881	0.000	0
		2016	5,036,219	538,528	4,497,691	0.156	699,661
		2017	5,028,608	0	5,028,608	0.241	1,211,641
		2018	14,046,798	4,563,867	9,482,931	0.582	5,523,018
		Total	32,321,549	5,373,666	26,947,883		8,549,863
	320	2014	2,039,419	4,415	2,035,004	0.153	312,016
		2015	2,158,761	136,018	2,022,743	0.053	107,814
		2016	2,429,521	108,450	2,321,071	0.114	263,613
		2017	2,528,376	0	2,528,376	0.203	513,150
		2018	4,815,444	2,097,044	2,718,400	0.232	630,693
		Total	13,971,521	2,345,927	11,625,594		1,827,287
	330	2014	114,548	4,543	110,005	0.118	12,960
		2015	83,988	8,463	75,525	0.000	0
		2016	181,215	1,640	179,575	0.408	73,350
		2017	308,301	0	308,301	0.677	208,573
		2018	198,450	30,984	167,466	0.360	60,275
		Total	886,502	45,630	840,872		355,158
	340	2014	6,459,876	66,719	6,393,157	0.450	2,880,094
		2015	6,928,396	560,919	6,367,477	0.399	2,543,745
		2016	8,027,709	749,054	7,278,655	0.455	3,315,332
		2017	7,864,319	92,493	7,771,826	0.490	3,804,348
		2018	11,569,439	4,049,893	7,519,546	0.469	3,523,538
		Total	40,849,739	5,519,078	35,330,661		16,067,056

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DEVELOPMENT OF TERRITORY EXCESS LOSSES ON A $500 DEDUCTIBLE LEVEL
EXTENDED COVERAGE

Territory Group	Territory	Year	(1) Total Adjusted Incurred Losses	(2) Hurricane Adjusted Incurred Losses	(3) Non-Hurricane Adjusted Incurred Losses (1) - (2)	(4) Excess Ratio	(5) Adjusted Incurred Excess Losses (3) x (4)
Inland	350	2014	1,273,810	9,630	1,264,180	0.000	0
		2015	1,528,766	92,161	1,436,605	0.014	20,445
		2016	1,546,270	28,533	1,517,737	0.017	26,300
		2017	2,452,237	8,026	2,444,211	0.390	953,218
		2018	3,518,626	853,117	2,665,509	0.443	1,181,005
		Total	10,319,709	991,467	9,328,242		2,180,968
	360	2014	2,929,981	12,304	2,917,677	0.033	95,270
		2015	2,534,833	295,930	2,238,903	0.000	0
		2016	2,668,951	59,615	2,609,336	0.000	0
		2017	5,013,030	255	5,012,775	0.353	1,771,858
		2018	4,771,409	967,638	3,803,771	0.153	583,869
		Total	17,918,204	1,335,742	16,582,462		2,450,997
	370	2014	136,127	0	136,127	0.000	0
		2015	204,451	5,411	199,040	0.176	35,006
		2016	102,231	175	102,056	0.000	0
		2017	123,665	0	123,665	0.000	0
		2018	286,395	29,726	256,669	0.303	77,651
		Total	852,869	35,312	817,557		112,656
	380	2014	482,562	33,753	448,809	0.000	0
		2015	477,104	11,261	465,843	0.000	0
		2016	494,558	4,845	489,713	0.000	0
		2017	589,865	0	589,865	0.038	22,639
		2018	779,488	82,963	696,525	0.163	113,340
		Total	2,823,577	132,822	2,690,755		135,979
	390	2014	300,321	421	299,900	0.000	0
		2015	571,267	5,289	565,978	0.000	0
		2016	391,570	24,462	367,108	0.000	0
		2017	640,358	0	640,358	0.063	40,546
		2018	665,325	70,293	595,032	0.000	0
		Total	2,568,841	100,465	2,468,376		40,546
Statewide		2014	47,208,241	3,218,320	43,989,921		7,033,861
		2015	47,947,554	3,676,823	44,270,731		5,258,671
		2016	111,404,177	64,494,644	46,909,533		7,722,904
		2017	55,103,480	264,669	54,838,811		12,822,825
		2018	575,538,622	512,253,927	63,284,695		13,693,140
		Total	837,202,074	583,908,383	253,293,691		46,531,402

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

TERRITORY EXCESS HISTORY
EXTENDED COVERAGE

Territory Group [a]	Year	(1) Reported Earned Premium	(2) Non-Hurricane Developed Incurred Losses	(3) Loss Ratio (2)/(1)	(4) Normal Loss Ratio	(5) Excess Loss Ratio (3)-(4)
Beach	1989	8,260,523	889,024	0.108	0.108	0.000
	1990	9,251,067	515,017	0.056	0.056	0.000
	1991	9,833,195	380,398	0.039	0.039	0.000
	1992	10,360,778	221,952	0.021	0.021	0.000
	1993	11,250,305	5,507,038	0.490	0.490	0.000
	1994	12,810,077	908,287	0.071	0.071	0.000
	1995	14,277,092	610,612	0.043	0.043	0.000
	1996	16,284,838	1,368,719	0.084	0.084	0.000
	1997	20,632,874	857,168	0.042	0.042	0.000
	1998	21,926,477	5,178,232	0.236	0.236	0.000
	1999	25,611,849	11,081,702	0.433	0.433	0.000
	2000	28,077,262	1,501,064	0.053	0.053	0.000
	2001	21,673,412	1,149,484	0.053	0.053	0.000
	2002	22,940,351	1,165,195	0.051	0.051	0.000
	2003	26,026,651	3,007,193	0.116	0.116	0.000
	2004	29,879,061	2,228,458	0.075	0.075	0.000
	2005	34,544,227	2,142,282	0.062	0.062	0.000
	2006	37,440,178	2,133,444	0.057	0.057	0.000
	2007	45,036,237	2,439,041	0.054	0.054	0.000
	2008	48,846,340	2,162,126	0.044	0.044	0.000
	2009	45,439,460	2,755,214	0.061	0.061	0.000
	2010	43,461,783	2,770,274	0.064	0.064	0.000
	2011	38,091,605	1,974,297	0.052	0.052	0.000
	2012	36,029,152	2,076,940	0.058	0.058	0.000
	2013	37,644,589	2,369,563	0.063	0.063	0.000
	2014	42,698,055	2,579,285	0.060	0.060	0.000
	2015	46,223,933	3,746,603	0.081	0.081	0.000
	2016	47,270,366	2,744,693	0.058	0.058	0.000
	2017	46,761,321	3,623,438	0.077	0.077	0.000
	2018	44,494,434	5,017,364	0.113	0.113	0.000
	Average			0.096	0.096	0.000

Selected Excess Distributional Weight = 1.0

[a] The Beach Territory Group consists of current Territories 110 and 120, as well as past Territories 04, 05, 06, 07, and 08.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

TERRITORY EXCESS HISTORY
EXTENDED COVERAGE

Territory Group [a]	Year	(1) Reported Earned Premium	(2) Non-Hurricane Developed Incurred Losses	(3) Loss Ratio (2)/(1)	(4) Normal Loss Ratio	(5) Excess Loss Ratio (3)-(4)
Coast	1989	3,397,284	1,005,952	0.296	0.296	0.000
	1990	3,440,377	348,795	0.101	0.101	0.000
	1991	3,685,703	384,221	0.104	0.104	0.000
	1992	3,692,065	429,715	0.116	0.116	0.000
	1993	3,892,559	2,956,249	0.759	0.500	0.259
	1994	4,136,913	414,178	0.100	0.100	0.000
	1995	4,400,806	614,221	0.140	0.140	0.000
	1996	4,747,317	1,244,955	0.262	0.262	0.000
	1997	5,714,794	731,035	0.128	0.128	0.000
	1998	6,480,779	1,604,853	0.248	0.248	0.000
	1999	8,281,989	4,156,110	0.502	0.500	0.002
	2000	10,595,742	990,675	0.093	0.093	0.000
	2001	9,677,523	810,004	0.084	0.084	0.000
	2002	10,765,695	1,017,967	0.095	0.095	0.000
	2003	12,832,643	1,676,339	0.131	0.131	0.000
	2004	13,658,566	1,199,394	0.088	0.088	0.000
	2005	14,958,786	1,660,690	0.111	0.111	0.000
	2006	16,801,890	1,664,870	0.099	0.099	0.000
	2007	20,873,986	982,392	0.047	0.047	0.000
	2008	20,870,002	1,319,294	0.063	0.063	0.000
	2009	19,385,890	1,616,200	0.083	0.083	0.000
	2010	20,296,410	3,054,900	0.151	0.151	0.000
	2011	21,325,373	3,485,808	0.163	0.163	0.000
	2012	22,134,860	2,910,030	0.131	0.131	0.000
	2013	24,503,099	2,598,727	0.106	0.106	0.000
	2014	28,399,077	6,559,307	0.231	0.231	0.000
	2015	33,058,524	4,350,447	0.132	0.132	0.000
	2016	34,679,324	4,106,617	0.118	0.118	0.000
	2017	33,960,889	5,248,888	0.155	0.155	0.000
	2018	33,397,714	7,675,180	0.230	0.230	0.000
	Average			0.169	0.160	0.009

Selected Excess Distributional Weight = 1.5

[a] The Coast Territory Group consists of current Territories 130-160, as well as past Territories 30, 31, 42, 43, 48, 49, and 52.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

TERRITORY EXCESS HISTORY
EXTENDED COVERAGE

Territory Group [a]	Year	(1) Reported Earned Premium	(2) Non-Hurricane Developed Incurred Losses	(3) Loss Ratio (2)/(1)	(4) Normal Loss Ratio	(5) Excess Loss Ratio (3)-(4)
Inland	1989	12,965,160	11,564,238	0.892	0.500	0.392
	1990	13,232,194	4,414,826	0.334	0.334	0.000
	1991	14,581,736	3,568,339	0.245	0.245	0.000
	1992	15,847,594	4,090,896	0.258	0.258	0.000
	1993	16,746,689	8,422,786	0.503	0.500	0.003
	1994	17,115,160	6,816,738	0.398	0.398	0.000
	1995	17,791,896	6,721,602	0.378	0.378	0.000
	1996	18,828,702	7,485,717	0.398	0.398	0.000
	1997	19,326,674	6,386,230	0.330	0.330	0.000
	1998	21,566,331	12,756,189	0.591	0.500	0.091
	1999	24,024,133	11,163,759	0.465	0.465	0.000
	2000	25,603,446	12,064,722	0.471	0.471	0.000
	2001	27,121,467	7,268,072	0.268	0.268	0.000
	2002	29,095,912	13,542,810	0.465	0.465	0.000
	2003	31,307,587	14,668,157	0.469	0.469	0.000
	2004	33,846,888	11,590,805	0.342	0.342	0.000
	2005	37,157,722	11,523,625	0.310	0.310	0.000
	2006	39,217,323	12,863,339	0.328	0.328	0.000
	2007	41,511,468	14,991,832	0.361	0.361	0.000
	2008	18,501,436	10,517,787	0.568	0.500	0.068
	2009	46,418,680	24,903,333	0.536	0.500	0.036
	2010	48,580,790	30,188,858	0.621	0.500	0.121
	2011	52,428,029	101,534,090	1.937	0.500	1.437
	2012	56,566,396	38,417,593	0.679	0.500	0.179
	2013	68,165,223	31,547,709	0.463	0.463	0.000
	2014	58,387,637	32,253,525	0.552	0.500	0.052
	2015	65,362,559	33,118,931	0.507	0.500	0.007
	2016	69,139,306	36,730,007	0.531	0.500	0.031
	2017	70,358,017	41,666,391	0.592	0.500	0.092
	2018	72,841,522	45,589,408	0.626	0.500	0.126
	Average			0.514	0.426	0.088

Selected Excess Distributional Weight = 3.5

[a] The Inland Territory Group consists of current Territories 170-390, as well as past Territories 32-41, 44-47, 53, 57, and 60.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TERRITORY EXCESS FACTORS
EXTENDED COVERAGE

Territory Group	Year	(1) Total Adjusted Incurred Losses	(2) Hurricane Adjusted Incurred Losses	(3) Non-Hurricane Adjusted Incurred Excess Losses	(4) Non-Hurricane Non-Excess Adjusted Incurred Losses (1) - (2) - (3)	(5) Loss Trend Factor	(6) Trended Non-Hurricane Adjusted Incurred Losses (4)x(5)	(7) Excess Distributional Weight	(8) Excess Amount (6)x(7)	(9) Statewide Excess Factor	(10) Excess Unit (6)/(8)x[(9)-1.0]	(11) Territory Excess Factor 1.0+[(7)x(10)]
Beach	2014	5,058,646	1,974,807	0	3,083,839	1.741	5,368,964	1.0	5,368,964			
	2015	4,723,072	339,224	0	4,383,848	1.658	7,268,420	1.0	7,268,420			
	2016	11,379,453	8,144,647	0	3,234,806	1.579	5,107,759	1.0	5,107,759			
	2017	4,374,731	39,974	0	4,334,757	1.504	6,519,475	1.0	6,519,475			
	2018	151,020,134	145,000,291	0	6,019,843	1.432	8,620,415	1.0	8,620,415			
	Total	176,556,036	155,498,943	0	21,057,093		32,885,033	1.0	32,885,033			1.022
Coast	2014	8,040,157	819,924	271,548	6,948,685	1.741	12,097,661	1.5	18,146,492			
	2015	5,697,927	863,090	0	4,834,837	1.658	8,016,160	1.5	12,024,240			
	2016	18,185,896	13,629,288	0	4,556,608	1.579	7,194,884	1.5	10,792,326			
	2017	6,001,478	36,740	0	5,964,738	1.504	8,970,966	1.5	13,456,449			
	2018	272,861,491	264,098,120	0	8,763,371	1.432	12,549,147	1.5	18,823,721			
	Total	310,786,949	279,447,162	271,548	31,068,239		48,828,818	1.5	73,243,227			1.033
Inland	2014	34,109,438	423,589	6,762,313	26,923,536	1.741	46,873,875	3.5	164,058,563			
	2015	37,526,555	2,474,509	5,258,671	29,793,375	1.658	49,397,416	3.5	172,890,956			
	2016	81,838,828	42,720,709	7,722,904	31,395,215	1.579	49,573,044	3.5	173,505,654			
	2017	44,727,271	187,955	12,822,825	31,716,491	1.504	47,701,602	3.5	166,955,607			
	2018	151,656,997	103,155,516	13,693,140	34,808,341	1.432	49,845,544	3.5	174,459,404			
	Total	349,859,089	148,962,278	46,259,854	154,636,957		243,391,481	3.5	851,870,184			1.076
Statewide		837,202,074	583,908,383	46,531,402	206,762,289		325,105,332		957,998,444	1.064	0.021719	

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
EXTENDED COVERAGE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
110	Buildings	2014	12,147	172	29,589,263	2,435.93	14.162	1.131	33,465,456	16.018
		2015	12,175	172	30,108,892	2,473.01	14.378	1.104	33,240,217	15.873
		2016	12,072	172	30,015,608	2,486.38	14.456	1.092	32,777,044	15.786
		2017	11,763	172	29,327,629	2,493.21	14.495	1.079	31,644,512	15.641
		2018	11,414	172	28,401,851	2,488.33	14.467	1.064	30,219,569	15.393
		Total	59,571	172	147,443,243	2,475.08	14.390		161,346,798	15.747
	Contents	2014	10,853	24	1,249,918	115.17	4.799	1.264	1,579,896	6.066
		2015	10,823	24	1,313,648	121.38	5.057	1.211	1,590,828	6.124
		2016	10,691	24	1,354,803	126.72	5.280	1.176	1,593,248	6.209
		2017	10,433	24	1,345,254	128.94	5.373	1.151	1,548,387	6.184
		2018	10,102	24	1,325,980	131.26	5.469	1.126	1,493,053	6.158
		Total	52,902	24	6,589,603	124.56	5.190		7,805,412	6.148
	Total	2014	23,000	102.16	30,839,181	1,340.83	13.124		35,045,352	14.914
		2015	22,998	102.35	31,422,540	1,366.32	13.349		34,831,045	14.797
		2016	22,763	102.49	31,370,411	1,378.13	13.447		34,370,292	14.732
		2017	22,196	102.43	30,672,883	1,381.91	13.491		33,192,899	14.599
		2018	21,516	102.51	29,727,831	1,381.66	13.478		31,712,622	14.378
		Total	112,473	102.39	154,032,846	1,369.51	13.376		169,152,210	14.689
120	Buildings	2014	17,570	192	35,425,281	2,016.24	10.501	1.131	40,065,993	11.877
		2015	17,664	192	36,672,063	2,076.09	10.813	1.104	40,485,958	11.938
		2016	17,549	192	37,007,941	2,108.83	10.984	1.092	40,412,672	11.994
		2017	17,205	192	36,507,442	2,121.91	11.052	1.079	39,391,530	11.925
		2018	16,467	192	34,328,018	2,084.66	10.858	1.064	36,525,011	11.552
		Total	86,455	192	179,940,745	2,081.32	10.840		196,881,163	11.861
	Contents	2014	15,110	28	1,936,438	128.16	4.577	1.264	2,447,658	5.785
		2015	15,188	28	2,010,120	132.35	4.727	1.211	2,434,255	5.724
		2016	15,119	28	2,030,603	134.31	4.797	1.176	2,387,989	5.641
		2017	14,954	28	2,042,479	136.58	4.878	1.151	2,350,893	5.615
		2018	14,300	28	1,944,353	135.97	4.856	1.126	2,189,341	5.468
		Total	74,671	28	9,963,993	133.44	4.766		11,810,137	5.649
	Total	2014	32,680	116.17	37,361,719	1,143.26	9.841		42,513,650	11.198
		2015	32,852	116.18	38,682,183	1,177.47	10.135		42,920,213	11.245
		2016	32,668	116.10	39,038,544	1,195.01	10.293		42,800,661	11.285
		2017	32,159	115.74	38,549,921	1,198.73	10.357		41,742,423	11.215
		2018	30,767	115.78	36,272,371	1,178.94	10.183		38,714,353	10.869
		Total	161,126	116.00	189,904,738	1,178.61	10.161		208,691,300	11.166
130	Buildings	2014	4,731	138	3,581,801	757.09	5.486	1.131	4,051,017	6.205
		2015	4,872	138	3,916,109	803.80	5.825	1.104	4,323,384	6.430
		2016	4,909	138	4,008,532	816.57	5.917	1.092	4,377,317	6.462
		2017	4,935	138	4,078,272	826.40	5.988	1.079	4,400,455	6.461
		2018	4,970	138	4,144,640	833.93	6.043	1.064	4,409,897	6.430
		Total	24,417	138	19,729,354	808.02	5.855		21,562,071	6.399
	Contents	2014	2,847	21	161,584	56.76	2.703	1.264	204,242	3.416
		2015	3,026	21	181,812	60.08	2.861	1.211	220,174	3.465
		2016	3,100	21	198,250	63.95	3.045	1.176	233,142	3.581
		2017	3,180	21	212,851	66.93	3.187	1.151	244,992	3.669
		2018	3,280	21	227,803	69.45	3.307	1.126	256,506	3.724
		Total	15,433	21	982,300	63.65	3.031		1,159,056	3.576
	Total	2014	7,578	94.04	3,743,385	493.98	5.253		4,255,259	5.971
		2015	7,898	93.17	4,097,921	518.86	5.569		4,543,559	6.174
		2016	8,009	92.71	4,206,782	525.26	5.665		4,610,459	6.209
		2017	8,115	92.15	4,291,123	528.79	5.738		4,645,447	6.212
		2018	8,250	91.48	4,372,443	529.99	5.793		4,666,403	6.183
		Total	39,850	92.69	20,711,654	519.74	5.607		22,721,127	6.151

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
EXTENDED COVERAGE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
140	Buildings	2014	30,316	149	26,842,752	885.43	5.942	1.131	30,359,153	6.721
		2015	31,817	149	29,073,089	913.76	6.133	1.104	32,096,690	6.770
		2016	32,049	149	29,835,795	930.94	6.248	1.092	32,580,688	6.823
		2017	32,095	149	30,217,059	941.49	6.319	1.079	32,604,207	6.818
		2018	31,823	149	29,914,743	940.04	6.309	1.064	31,829,287	6.713
		Total	158,100	149	145,883,438	922.73	6.193		159,470,024	6.770
	Contents	2014	18,211	21	895,359	49.17	2.341	1.264	1,131,734	2.959
		2015	19,257	21	1,008,589	52.38	2.494	1.211	1,221,401	3.020
		2016	19,928	21	1,078,700	54.13	2.578	1.176	1,268,551	3.031
		2017	20,487	21	1,141,323	55.71	2.653	1.151	1,313,663	3.053
		2018	20,940	21	1,216,801	58.11	2.767	1.126	1,370,118	3.116
		Total	98,823	21	5,340,772	54.04	2.574		6,305,467	3.038
	Total	2014	48,527	100.96	27,738,111	571.60	5.661		31,490,886	6.427
		2015	51,074	100.74	30,081,678	588.98	5.847		33,318,092	6.476
		2016	51,977	99.92	30,914,495	594.77	5.952		33,849,239	6.517
		2017	52,582	99.13	31,358,382	596.37	6.016		33,917,869	6.507
		2018	52,763	98.20	31,131,544	590.03	6.008		33,199,404	6.407
		Total	256,923	99.77	151,224,210	588.60	5.900		165,775,491	6.467
150	Buildings	2014	17,370	126	11,703,522	673.78	5.347	1.131	13,236,683	6.048
		2015	18,443	126	12,725,118	689.97	5.476	1.104	14,048,530	6.045
		2016	18,954	126	13,205,343	696.70	5.529	1.092	14,420,235	6.038
		2017	19,288	126	13,507,165	700.29	5.558	1.079	14,574,231	5.997
		2018	19,387	126	13,571,725	700.04	5.556	1.064	14,440,315	5.911
		Total	93,442	126	64,712,873	692.55	5.496		70,719,995	6.007
	Contents	2014	9,634	11	272,353	28.27	2.570	1.264	344,254	3.248
		2015	10,319	11	307,185	29.77	2.706	1.211	372,001	3.277
		2016	10,842	11	329,017	30.35	2.759	1.176	386,924	3.244
		2017	11,300	11	350,864	31.05	2.823	1.151	403,844	3.249
		2018	11,697	11	374,179	31.99	2.908	1.126	421,326	3.275
		Total	53,792	11	1,633,598	30.37	2.761		1,928,349	3.259
	Total	2014	27,004	84.97	11,975,875	443.49	5.219		13,580,938	5.919
		2015	28,762	84.74	13,032,303	453.11	5.347		14,420,531	5.917
		2016	29,796	84.15	13,534,360	454.23	5.398		14,807,159	5.905
		2017	30,588	83.52	13,858,029	453.05	5.425		14,978,075	5.863
		2018	31,084	82.73	13,945,904	448.65	5.423		14,861,641	5.780
		Total	147,234	83.98	66,346,471	450.62	5.365		72,648,344	5.875
160	Buildings	2014	17,458	130	13,315,178	762.70	5.867	1.131	15,059,466	6.635
		2015	18,314	130	14,500,864	791.79	6.091	1.104	16,008,954	6.724
		2016	18,403	130	14,722,041	799.98	6.154	1.092	16,076,469	6.720
		2017	18,322	130	14,780,684	806.72	6.206	1.079	15,948,358	6.696
		2018	18,099	130	14,707,030	812.59	6.251	1.064	15,648,280	6.651
		Total	90,596	130	72,025,797	795.02	6.116		78,741,527	6.686
	Contents	2014	9,374	14	260,989	27.84	1.989	1.264	329,890	2.514
		2015	9,907	14	292,432	29.52	2.108	1.211	354,135	2.553
		2016	10,270	14	309,241	30.11	2.151	1.176	363,667	2.529
		2017	10,608	14	324,406	30.58	2.184	1.151	373,391	2.514
		2018	10,784	14	335,476	31.11	2.222	1.126	377,746	2.502
		Total	50,943	14	1,522,544	29.89	2.135		1,798,830	2.522
	Total	2014	26,832	89.47	13,576,167	505.97	5.655		15,389,356	6.410
		2015	28,221	89.28	14,793,296	524.19	5.871		16,363,089	6.495
		2016	28,673	88.45	15,031,282	524.23	5.927		16,440,136	6.482
		2017	28,930	87.47	15,105,090	522.13	5.970		16,321,749	6.450
		2018	28,883	86.69	15,042,506	520.81	6.008		16,026,026	6.401
		Total	141,539	88.25	73,548,341	519.63	5.888		80,540,357	6.448

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
EXTENDED COVERAGE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
170	Buildings	2014	1,868	62	540,266	289.22	4.665	1.131	611,041	5.276
		2015	2,000	62	603,993	302.00	4.871	1.104	666,808	5.377
		2016	2,111	62	643,058	304.62	4.913	1.092	702,219	5.365
		2017	2,170	62	664,159	306.06	4.937	1.079	716,628	5.327
		2018	2,238	62	698,446	312.08	5.034	1.064	743,147	5.356
		Total	10,387	62	3,149,922	303.26	4.891		3,439,843	5.341
	Contents	2014	1,070	5	17,766	16.60	3.321	1.264	22,456	4.197
		2015	1,199	5	21,804	18.19	3.637	1.211	26,405	4.404
		2016	1,294	5	23,989	18.54	3.708	1.176	28,211	4.360
		2017	1,352	5	25,290	18.71	3.741	1.151	29,109	4.306
		2018	1,437	5	27,880	19.40	3.880	1.126	31,393	4.369
		Total	6,352	5	116,729	18.38	3.675		137,574	4.332
	Total	2014	2,938	41.24	558,032	189.94	4.606		633,497	5.228
		2015	3,199	40.64	625,797	195.62	4.814		693,213	5.333
		2016	3,405	40.34	667,047	195.90	4.856		730,430	5.318
		2017	3,522	40.12	689,449	195.75	4.879		745,736	5.278
		2018	3,675	39.71	726,326	197.64	4.977		774,539	5.307
		Total	16,739	40.37	3,266,651	195.15	4.834		3,577,416	5.294
180	Buildings	2014	16,829	68	6,249,497	371.35	5.461	1.131	7,068,181	6.176
		2015	17,867	68	6,868,089	384.40	5.653	1.104	7,582,370	6.241
		2016	18,630	68	7,368,344	395.51	5.816	1.092	8,046,232	6.351
		2017	18,932	68	7,662,184	404.72	5.952	1.079	8,267,497	6.422
		2018	19,167	68	7,920,599	413.24	6.077	1.064	8,427,517	6.466
		Total	91,425	68	36,068,713	394.52	5.802		39,391,797	6.336
	Contents	2014	9,125	6	141,592	15.52	2.586	1.264	178,972	3.269
		2015	9,771	6	158,741	16.25	2.708	1.211	192,235	3.279
		2016	10,320	6	170,340	16.51	2.751	1.176	200,320	3.235
		2017	10,767	6	183,470	17.04	2.840	1.151	211,174	3.269
		2018	11,119	6	196,320	17.66	2.943	1.126	221,056	3.313
		Total	51,102	6	850,463	16.64	2.774		1,003,758	3.274
	Total	2014	25,954	46.20	6,391,089	246.25	5.330		7,247,153	6.044
		2015	27,638	46.08	7,026,830	254.25	5.517		7,774,606	6.105
		2016	28,950	45.90	7,538,684	260.40	5.673		8,246,551	6.206
		2017	29,699	45.52	7,845,654	264.17	5.803		8,478,671	6.271
		2018	30,286	45.24	8,116,919	268.01	5.924		8,648,574	6.313
		Total	142,527	45.77	36,919,176	259.03	5.659		40,395,555	6.192
190	Buildings	2014	7,061	70	2,159,734	305.87	4.370	1.131	2,442,659	4.942
		2015	7,377	70	2,347,165	318.17	4.545	1.104	2,591,270	5.018
		2016	7,661	70	2,479,861	323.70	4.624	1.092	2,708,008	5.050
		2017	7,779	70	2,569,522	330.32	4.719	1.079	2,772,514	5.092
		2018	7,995	70	2,696,393	337.26	4.818	1.064	2,868,962	5.126
		Total	37,873	70	12,252,675	323.52	4.622		13,383,414	5.048
	Contents	2014	3,734	8	85,091	22.79	2.849	1.264	107,555	3.601
		2015	3,945	8	97,131	24.62	3.078	1.211	117,626	3.727
		2016	4,171	8	106,272	25.48	3.185	1.176	124,976	3.745
		2017	4,376	8	114,885	26.25	3.282	1.151	132,233	3.777
		2018	4,620	8	123,956	26.83	3.354	1.126	139,574	3.776
		Total	20,846	8	527,335	25.30	3.162		621,964	3.730
	Total	2014	10,795	48.55	2,244,825	207.95	4.283		2,550,214	4.866
		2015	11,322	48.40	2,444,296	215.89	4.461		2,708,896	4.944
		2016	11,832	48.14	2,586,133	218.57	4.540		2,832,984	4.973
		2017	12,155	47.68	2,684,407	220.85	4.632		2,904,747	5.012
		2018	12,615	47.29	2,820,349	223.57	4.727		3,008,537	5.043
		Total	58,719	47.99	12,780,010	217.65	4.535		14,005,378	4.970

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
EXTENDED COVERAGE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
200	Buildings	2014	4,264	88	1,373,119	322.03	3.659	1.131	1,552,998	4.139
		2015	4,373	88	1,483,022	339.13	3.854	1.104	1,637,256	4.255
		2016	4,384	88	1,527,419	348.41	3.959	1.092	1,667,942	4.323
		2017	4,424	88	1,579,178	356.96	4.056	1.079	1,703,933	4.377
		2018	4,481	88	1,639,519	365.88	4.158	1.064	1,744,448	4.424
		Total	21,926	88	7,602,257	346.72	3.940		8,306,577	4.305
	Contents	2014	3,049	11	91,526	30.02	2.729	1.264	115,689	3.449
		2015	3,105	11	99,933	32.18	2.926	1.211	121,019	3.543
		2016	3,118	11	104,039	33.37	3.033	1.176	122,350	3.567
		2017	3,162	11	110,626	34.99	3.181	1.151	127,331	3.661
		2018	3,229	11	118,831	36.80	3.346	1.126	133,804	3.767
		Total	15,663	11	524,955	33.52	3.047		620,192	3.600
	Total	2014	7,313	55.90	1,464,645	200.28	3.583		1,668,686	4.082
		2015	7,478	56.03	1,582,955	211.68	3.778		1,758,275	4.197
		2016	7,502	56.00	1,631,458	217.47	3.884		1,790,291	4.262
		2017	7,586	55.90	1,689,804	222.75	3.985		1,831,264	4.318
		2018	7,710	55.75	1,758,350	228.06	4.091		1,878,252	4.370
		Total	37,589	55.91	8,127,212	216.21	3.867		8,926,769	4.247
210	Buildings	2014	5,466	57	1,444,951	264.35	4.638	1.131	1,634,240	5.245
		2015	5,799	57	1,582,243	272.85	4.787	1.104	1,746,796	5.285
		2016	6,109	57	1,715,539	280.82	4.927	1.092	1,873,369	5.380
		2017	6,158	57	1,754,066	284.84	4.997	1.079	1,892,637	5.392
		2018	6,441	57	1,866,282	289.75	5.083	1.064	1,985,724	5.409
		Total	29,973	57	8,363,081	279.02	4.895		9,132,766	5.346
	Contents	2014	2,565	4	26,689	10.41	2.601	1.264	33,735	3.288
		2015	2,722	4	28,960	10.64	2.660	1.211	35,071	3.221
		2016	2,895	4	31,969	11.04	2.761	1.176	37,596	3.247
		2017	3,025	4	35,355	11.69	2.922	1.151	40,694	3.363
		2018	3,132	4	37,532	11.98	2.996	1.126	42,261	3.373
		Total	14,339	4	160,505	11.19	2.798		189,356	3.301
	Total	2014	8,031	40.07	1,471,640	183.24	4.573		1,667,974	5.183
		2015	8,521	40.07	1,611,203	189.09	4.719		1,781,867	5.219
		2016	9,004	39.96	1,747,508	194.08	4.857		1,910,964	5.311
		2017	9,183	39.54	1,789,421	194.86	4.928		1,933,331	5.324
		2018	9,573	39.66	1,903,814	198.87	5.014		2,027,985	5.342
		Total	44,312	39.85	8,523,586	192.35	4.827		9,322,121	5.279
220	Buildings	2014	19,635	50	9,028,092	459.80	9.196	1.131	10,210,772	10.401
		2015	20,798	50	9,888,418	475.45	9.509	1.104	10,916,813	10.498
		2016	21,338	50	10,306,867	483.03	9.661	1.092	11,255,099	10.549
		2017	21,481	50	10,844,571	504.84	10.097	1.079	11,701,292	10.895
		2018	21,445	50	11,262,592	525.18	10.504	1.064	11,983,398	11.176
		Total	104,697	50	51,330,540	490.28	9.806		56,067,374	10.710
	Contents	2014	9,145	3	71,027	7.77	2.589	1.264	89,778	3.272
		2015	9,863	3	82,300	8.34	2.781	1.211	99,665	3.368
		2016	9,200	3	87,391	9.50	3.166	1.176	102,772	3.724
		2017	9,235	3	92,109	9.97	3.325	1.151	106,017	3.827
		2018	9,448	3	99,939	10.58	3.526	1.126	112,531	3.970
		Total	46,891	3	432,766	9.23	3.076		510,764	3.631
	Total	2014	28,780	35.07	9,099,119	316.16	9.016		10,300,550	10.207
		2015	30,661	34.88	9,970,718	325.19	9.323		11,016,479	10.301
		2016	30,538	35.84	10,394,258	340.37	9.497		11,357,871	10.377
		2017	30,716	35.87	10,936,680	356.06	9.927		11,807,310	10.717
		2018	30,893	35.63	11,362,531	367.80	10.324		12,095,929	10.990
		Total	151,588	35.46	51,763,306	341.47	9.629		56,578,138	10.525

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
EXTENDED COVERAGE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
230	Buildings	2014	11,842	80	3,095,803	261.43	3.268	1.131	3,501,353	3.696
		2015	12,167	80	3,285,561	270.04	3.375	1.104	3,627,259	3.727
		2016	12,226	80	3,343,859	273.50	3.419	1.092	3,651,494	3.733
		2017	12,197	80	3,376,060	276.79	3.460	1.079	3,642,769	3.733
		2018	11,996	80	3,414,553	284.64	3.558	1.064	3,633,084	3.786
		Total	60,428	80	16,515,836	273.31	3.416		18,055,960	3.735
	Contents	2014	7,211	9	164,235	22.78	2.531	1.264	207,593	3.199
		2015	7,480	9	179,174	23.95	2.662	1.211	216,980	3.223
		2016	7,671	9	185,392	24.17	2.685	1.176	218,021	3.158
		2017	7,815	9	191,498	24.50	2.723	1.151	220,414	3.134
		2018	7,895	9	199,281	25.24	2.805	1.126	224,390	3.158
		Total	38,072	9	919,580	24.15	2.684		1,087,398	3.174
	Total	2014	19,053	53.13	3,260,038	171.10	3.221		3,708,946	3.664
		2015	19,647	52.97	3,464,735	176.35	3.329		3,844,239	3.694
		2016	19,897	52.63	3,529,251	177.38	3.370		3,869,515	3.695
		2017	20,012	52.27	3,567,558	178.27	3.410		3,863,183	3.693
		2018	19,891	51.82	3,613,834	181.68	3.506		3,857,475	3.742
		Total	98,500	52.56	17,435,416	177.01	3.368		19,143,358	3.698
240	Buildings	2014	16,788	51	4,322,406	257.47	5.048	1.131	4,888,641	5.710
		2015	17,670	51	4,730,580	267.72	5.249	1.104	5,222,560	5.795
		2016	18,371	51	4,961,161	270.05	5.295	1.092	5,417,588	5.782
		2017	18,352	51	5,045,901	274.95	5.391	1.079	5,444,527	5.817
		2018	18,312	51	5,120,077	279.60	5.482	1.064	5,447,762	5.833
		Total	89,493	51	24,180,125	270.19	5.298		26,421,078	5.789
	Contents	2014	7,677	3	63,950	8.33	2.777	1.264	80,833	3.510
		2015	8,209	3	71,928	8.76	2.921	1.211	87,105	3.537
		2016	8,697	3	78,783	9.06	3.020	1.176	92,649	3.551
		2017	9,165	3	84,614	9.23	3.077	1.151	97,391	3.542
		2018	9,526	3	90,598	9.51	3.170	1.126	102,013	3.570
		Total	43,274	3	389,873	9.01	3.003		459,990	3.543
	Total	2014	24,465	35.94	4,386,356	179.29	4.989		4,969,474	5.652
		2015	25,879	35.77	4,802,508	185.58	5.187		5,309,665	5.735
		2016	27,068	35.58	5,039,944	186.20	5.234		5,510,237	5.722
		2017	27,517	35.01	5,130,515	186.45	5.325		5,541,918	5.752
		2018	27,838	34.57	5,210,675	187.18	5.414		5,549,775	5.766
		Total	132,767	35.35	24,569,998	185.06	5.234		26,881,069	5.727
250	Buildings	2014	10,101	52	3,982,959	394.31	7.583	1.131	4,504,727	8.576
		2015	10,842	52	4,499,994	415.05	7.982	1.104	4,967,993	8.812
		2016	11,092	52	4,755,210	428.71	8.244	1.092	5,192,689	9.003
		2017	11,161	52	5,009,202	448.81	8.631	1.079	5,404,929	9.313
		2018	10,991	52	5,169,694	470.36	9.045	1.064	5,500,554	9.624
		Total	54,187	52	23,417,059	432.15	8.311		25,570,893	9.075
	Contents	2014	4,664	3	27,713	5.94	1.981	1.264	35,029	2.504
		2015	5,215	3	32,156	6.17	2.055	1.211	38,941	2.489
		2016	5,594	3	35,389	6.33	2.109	1.176	41,617	2.480
		2017	5,831	3	38,556	6.61	2.204	1.151	44,378	2.537
		2018	5,980	3	41,263	6.90	2.300	1.126	46,462	2.590
		Total	27,284	3	175,077	6.42	2.139		206,428	2.522
	Total	2014	14,765	36.52	4,010,672	271.63	7.438		4,539,756	8.419
		2015	16,057	36.09	4,532,150	282.25	7.822		5,006,934	8.641
		2016	16,686	35.57	4,790,599	287.10	8.071		5,234,307	8.818
		2017	16,992	35.19	5,047,758	297.07	8.443		5,449,307	9.115
		2018	16,971	34.73	5,210,957	307.05	8.840		5,547,017	9.410
		Total	81,471	35.59	23,592,136	289.58	8.136		25,777,320	8.890

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
EXTENDED COVERAGE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
260	Buildings	2014	7,745	50	1,808,365	233.49	4.670	1.131	2,045,261	5.281
		2015	7,888	50	1,828,448	231.80	4.636	1.104	2,018,607	5.118
		2016	8,112	50	1,939,980	239.15	4.783	1.092	2,118,458	5.223
		2017	8,420	50	2,090,019	248.22	4.964	1.079	2,255,131	5.357
		2018	8,488	50	2,134,198	251.44	5.029	1.064	2,270,787	5.351
		Total	40,653	50	9,801,010	241.09	4.822		10,708,243	5.268
	Contents	2014	3,052	2	16,178	5.30	2.650	1.264	20,449	3.350
		2015	3,279	2	18,467	5.63	2.816	1.211	22,364	3.410
		2016	3,482	2	20,438	5.87	2.935	1.176	24,035	3.451
		2017	3,698	2	22,695	6.14	3.069	1.151	26,122	3.532
		2018	3,837	2	24,186	6.30	3.152	1.126	27,233	3.549
		Total	17,348	2	101,964	5.88	2.939		120,203	3.464
	Total	2014	10,797	36.43	1,824,543	168.99	4.638		2,065,710	5.252
		2015	11,167	35.91	1,846,915	165.39	4.606		2,040,970	5.090
		2016	11,594	35.58	1,960,418	169.09	4.752		2,142,493	5.193
		2017	12,118	35.35	2,112,714	174.35	4.932		2,281,252	5.325
		2018	12,325	35.06	2,158,384	175.12	4.995		2,298,020	5.319
		Total	58,001	35.64	9,902,974	170.74	4.790		10,828,446	5.238
270	Buildings	2014	20,805	37	8,752,103	420.67	11.370	1.131	9,898,628	12.859
		2015	21,914	37	9,411,443	429.47	11.607	1.104	10,390,233	12.815
		2016	22,591	37	9,871,391	436.96	11.810	1.092	10,779,559	12.896
		2017	22,569	37	10,218,265	452.76	12.237	1.079	11,025,508	13.203
		2018	22,567	37	10,630,163	471.05	12.731	1.064	11,310,493	13.546
		Total	110,446	37	48,883,365	442.60	11.962		53,404,422	13.068
	Contents	2014	9,987	2	54,488	5.46	2.728	1.264	68,873	3.448
		2015	10,898	2	61,668	5.66	2.829	1.211	74,680	3.426
		2016	11,035	2	66,744	6.05	3.024	1.176	78,491	3.556
		2017	11,309	2	71,598	6.33	3.166	1.151	82,409	3.644
		2018	11,896	2	77,738	6.53	3.267	1.126	87,533	3.679
		Total	55,125	2	332,236	6.03	3.013		391,986	3.555
	Total	2014	30,792	25.65	8,806,591	286.00	11.151		9,967,501	12.621
		2015	32,812	25.38	9,473,111	288.71	11.378		10,464,913	12.569
		2016	33,626	25.51	9,938,135	295.55	11.584		10,858,050	12.656
		2017	33,878	25.32	10,289,863	303.73	11.997		11,107,917	12.951
		2018	34,463	24.92	10,707,901	310.71	12.469		11,398,026	13.272
		Total	165,571	25.35	49,215,601	297.25	11.727		53,796,408	12.819
280	Buildings	2014	4,501	37	1,581,967	351.47	9.499	1.131	1,789,205	10.744
		2015	4,601	37	1,650,643	358.76	9.696	1.104	1,822,310	10.705
		2016	4,690	37	1,668,822	355.83	9.617	1.092	1,822,354	10.502
		2017	4,710	37	1,706,452	362.30	9.792	1.079	1,841,262	10.566
		2018	4,717	37	1,775,070	376.31	10.171	1.064	1,888,674	10.822
		Total	23,219	37	8,382,954	361.04	9.758		9,163,804	10.667
	Contents	2014	2,309	2	15,564	6.74	3.370	1.264	19,673	4.260
		2015	2,423	2	16,726	6.90	3.452	1.211	20,255	4.180
		2016	2,479	2	17,623	7.11	3.554	1.176	20,725	4.180
		2017	2,584	2	18,991	7.35	3.675	1.151	21,859	4.230
		2018	2,683	2	20,578	7.67	3.835	1.126	23,171	4.318
		Total	12,478	2	89,482	7.17	3.586		105,682	4.235
	Total	2014	6,810	25.13	1,597,531	234.59	9.334		1,808,878	10.569
		2015	7,024	24.93	1,667,369	237.38	9.523		1,842,565	10.524
		2016	7,169	24.90	1,686,445	235.24	9.449		1,843,078	10.326
		2017	7,294	24.60	1,725,443	236.56	9.616		1,863,120	10.383
		2018	7,400	24.31	1,795,648	242.66	9.982		1,911,845	10.628
		Total	35,697	24.77	8,472,436	237.34	9.584		9,269,487	10.485

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
EXTENDED COVERAGE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
290	Buildings	2014	5,614	46	2,265,254	403.50	8.772	1.131	2,562,002	9.921
		2015	5,932	46	2,487,377	419.32	9.116	1.104	2,746,064	10.064
		2016	6,080	46	2,599,428	427.54	9.294	1.092	2,838,575	10.149
		2017	6,019	46	2,659,192	441.80	9.604	1.079	2,869,268	10.363
		2018	5,960	46	2,735,334	458.95	9.977	1.064	2,910,395	10.616
		Total	29,605	46	12,746,585	430.56	9.360		13,926,305	10.226
	Contents	2014	2,715	2	13,955	5.14	2.570	1.264	17,639	3.248
		2015	2,965	2	15,152	5.11	2.555	1.211	18,349	3.094
		2016	3,163	2	16,113	5.09	2.547	1.176	18,949	2.995
		2017	3,242	2	16,334	5.04	2.519	1.151	18,800	2.900
		2018	3,319	2	17,435	5.25	2.627	1.126	19,632	2.957
		Total	15,404	2	78,989	5.13	2.564		93,369	3.031
	Total	2014	8,329	31.66	2,279,209	273.65	8.644		2,579,641	9.783
		2015	8,897	31.34	2,502,529	281.28	8.976		2,764,413	9.915
		2016	9,243	30.94	2,615,541	282.98	9.145		2,857,524	9.991
		2017	9,261	30.60	2,675,526	288.90	9.442		2,888,069	10.192
		2018	9,279	30.26	2,752,769	296.67	9.803		2,930,027	10.435
		Total	45,009	30.94	12,825,574	284.96	9.210		14,019,675	10.067
300	Buildings	2014	6,856	43	1,155,221	168.50	3.919	1.131	1,306,555	4.432
		2015	7,079	43	1,256,697	177.52	4.128	1.104	1,387,393	4.558
		2016	7,047	43	1,284,244	182.24	4.238	1.092	1,402,394	4.628
		2017	6,886	43	1,281,652	186.12	4.328	1.079	1,382,903	4.670
		2018	6,788	43	1,290,001	190.04	4.420	1.064	1,372,561	4.702
		Total	34,656	43	6,267,815	180.86	4.206		6,851,806	4.598
	Contents	2014	3,418	4	37,434	10.95	2.738	1.264	47,317	3.461
		2015	3,534	4	40,743	11.53	2.882	1.211	49,340	3.490
		2016	3,676	4	43,364	11.80	2.949	1.176	50,996	3.468
		2017	3,703	4	44,510	12.02	3.005	1.151	51,231	3.459
		2018	3,765	4	46,170	12.26	3.066	1.126	51,987	3.452
		Total	18,096	4	212,221	11.73	2.932		250,871	3.466
	Total	2014	10,274	30.03	1,192,655	116.08	3.866		1,353,872	4.389
		2015	10,613	30.01	1,297,440	122.25	4.073		1,436,733	4.510
		2016	10,723	29.63	1,327,608	123.81	4.178		1,453,391	4.574
		2017	10,589	29.36	1,326,162	125.24	4.265		1,434,134	4.613
		2018	10,553	29.09	1,336,171	126.62	4.353		1,424,548	4.641
		Total	52,752	29.62	6,480,036	122.84	4.147		7,102,677	4.545
310	Buildings	2014	39,148	31	8,877,815	226.78	7.315	1.131	10,040,809	8.274
		2015	40,792	31	9,523,856	233.47	7.531	1.104	10,514,337	8.315
		2016	41,377	31	9,794,438	236.71	7.636	1.092	10,695,526	8.338
		2017	40,680	31	9,694,292	238.31	7.687	1.079	10,460,141	8.295
		2018	39,807	31	9,634,396	242.03	7.807	1.064	10,250,997	8.307
		Total	201,804	31	47,524,797	235.50	7.597		51,961,810	8.306
	Contents	2014	14,720	1	38,162	2.59	2.593	1.264	48,237	3.277
		2015	15,689	1	43,920	2.80	2.799	1.211	53,187	3.390
		2016	15,967	1	46,690	2.92	2.924	1.176	54,907	3.439
		2017	16,098	1	47,870	2.97	2.974	1.151	55,098	3.423
		2018	16,142	1	50,111	3.10	3.104	1.126	56,425	3.496
		Total	78,616	1	226,753	2.88	2.884		267,855	3.407
	Total	2014	53,868	22.80	8,915,977	165.52	7.259		10,089,046	8.214
		2015	56,481	22.67	9,567,776	169.40	7.473		10,567,524	8.254
		2016	57,344	22.65	9,841,128	171.62	7.578		10,750,434	8.278
		2017	56,778	22.49	9,742,162	171.58	7.628		10,515,239	8.233
		2018	55,949	22.34	9,684,507	173.10	7.747		10,307,422	8.245
		Total	280,420	22.59	47,751,550	170.29	7.538		52,229,665	8.245

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
EXTENDED COVERAGE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
320	Buildings	2014	19,166	34	4,906,825	256.02	7.530	1.131	5,549,619	8.516
		2015	19,852	34	5,162,033	260.03	7.648	1.104	5,698,884	8.443
		2016	20,180	34	5,290,952	262.19	7.711	1.092	5,777,720	8.421
		2017	19,798	34	5,198,520	262.58	7.723	1.079	5,609,203	8.333
		2018	19,303	34	5,106,619	264.55	7.781	1.064	5,433,443	8.279
		Total	98,299	34	25,664,949	261.09	7.679		28,068,869	8.398
	Contents	2014	6,306	1	16,258	2.58	2.578	1.264	20,550	3.259
		2015	6,652	1	18,591	2.79	2.795	1.211	22,514	3.385
		2016	6,899	1	20,000	2.90	2.899	1.176	23,520	3.409
		2017	7,068	1	20,446	2.89	2.893	1.151	23,533	3.330
		2018	7,140	1	20,983	2.94	2.939	1.126	23,627	3.309
		Total	34,065	1	96,278	2.83	2.826		113,744	3.339
	Total	2014	25,472	25.83	4,923,083	193.27	7.482		5,570,169	8.466
		2015	26,504	25.72	5,180,624	195.47	7.600		5,721,398	8.394
		2016	27,079	25.59	5,310,952	196.13	7.664		5,801,240	8.371
		2017	26,866	25.32	5,218,966	194.26	7.673		5,632,736	8.281
		2018	26,443	25.09	5,127,602	193.91	7.729		5,457,069	8.225
		Total	132,364	25.51	25,761,227	194.62	7.630		28,182,613	8.347
330	Buildings	2014	1,737	37	305,012	175.60	4.746	1.131	344,969	5.368
		2015	1,737	37	310,890	178.98	4.837	1.104	343,223	5.340
		2016	1,716	37	308,232	179.62	4.855	1.092	336,589	5.301
		2017	1,660	37	300,047	180.75	4.885	1.079	323,751	5.271
		2018	1,604	37	289,835	180.70	4.884	1.064	308,384	5.196
		Total	8,454	37	1,514,016	179.09	4.840		1,656,916	5.297
	Contents	2014	768	1	1,756	2.29	2.286	1.264	2,220	2.890
		2015	792	1	1,848	2.33	2.333	1.211	2,238	2.826
		2016	816	1	1,971	2.42	2.415	1.176	2,318	2.841
		2017	823	1	1,970	2.39	2.394	1.151	2,267	2.755
		2018	829	1	2,017	2.43	2.433	1.126	2,271	2.740
		Total	4,028	1	9,562	2.37	2.374		11,314	2.809
	Total	2014	2,505	25.96	306,768	122.46	4.717		347,188	5.338
		2015	2,529	25.73	312,738	123.66	4.807		345,460	5.310
		2016	2,532	25.40	310,203	122.51	4.824		338,907	5.270
		2017	2,483	25.07	302,017	121.63	4.852		326,018	5.238
		2018	2,433	24.73	291,852	119.96	4.850		310,656	5.162
		Total	12,482	25.38	1,523,578	122.06	4.809		1,668,230	5.265
340	Buildings	2014	33,831	29	9,916,868	293.13	10.108	1.131	11,215,978	11.432
		2015	35,603	29	10,619,685	298.28	10.286	1.104	11,724,132	11.355
		2016	35,832	29	10,736,013	299.62	10.332	1.092	11,723,726	11.282
		2017	35,002	29	10,572,971	302.07	10.416	1.079	11,408,236	11.239
		2018	33,995	29	10,577,571	311.15	10.729	1.064	11,254,536	11.416
		Total	174,263	29	52,423,108	300.83	10.373		57,326,607	11.344
	Contents	2014	14,431	1	42,289	2.93	2.930	1.264	53,453	3.704
		2015	15,143	1	46,410	3.06	3.065	1.211	56,203	3.711
		2016	15,018	1	48,039	3.20	3.199	1.176	56,494	3.762
		2017	14,908	1	49,231	3.30	3.302	1.151	56,665	3.801
		2018	14,786	1	50,901	3.44	3.443	1.126	57,315	3.876
		Total	74,286	1	236,870	3.19	3.189		280,129	3.771
	Total	2014	48,262	20.63	9,959,157	206.36	10.004		11,269,431	11.320
		2015	50,746	20.64	10,666,095	210.19	10.181		11,780,335	11.245
		2016	50,850	20.73	10,784,052	212.08	10.230		11,780,220	11.175
		2017	49,910	20.64	10,622,202	212.83	10.313		11,464,901	11.131
		2018	48,781	20.51	10,628,472	217.88	10.622		11,311,850	11.305
		Total	248,549	20.63	52,659,978	211.87	10.269		57,606,736	11.234

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
EXTENDED COVERAGE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
350	Buildings	2014	18,354	30	3,467,053	188.90	6.297	1.131	3,921,237	7.121
		2015	19,025	30	3,705,359	194.76	6.492	1.104	4,090,716	7.167
		2016	19,155	30	3,795,066	198.12	6.604	1.092	4,144,212	7.212
		2017	18,544	30	3,714,612	200.31	6.677	1.079	4,008,066	7.205
		2018	17,771	30	3,643,564	205.03	6.834	1.064	3,876,752	7.272
		Total	92,849	30	18,325,654	197.37	6.579		20,040,984	7.195
	Contents	2014	5,538	1	14,523	2.62	2.622	1.264	18,357	3.315
		2015	5,816	1	15,636	2.69	2.688	1.211	18,935	3.256
		2016	6,007	1	16,263	2.71	2.707	1.176	19,125	3.184
		2017	6,041	1	16,531	2.74	2.736	1.151	19,027	3.150
		2018	6,121	1	17,350	2.83	2.835	1.126	19,536	3.192
		Total	29,523	1	80,303	2.72	2.720		94,981	3.217
	Total	2014	23,892	23.28	3,481,576	145.72	6.260		3,939,594	7.084
		2015	24,841	23.21	3,720,995	149.79	6.454		4,109,652	7.128
		2016	25,162	23.08	3,811,329	151.47	6.564		4,163,337	7.170
		2017	24,585	22.87	3,731,143	151.77	6.635		4,027,094	7.161
		2018	23,892	22.57	3,660,914	153.23	6.789		3,896,288	7.225
		Total	122,372	23.00	18,405,957	150.41	6.539		20,135,965	7.153
360	Buildings	2014	31,922	29	6,870,466	215.23	7.422	1.131	7,770,497	8.394
		2015	32,422	29	7,141,400	220.26	7.595	1.104	7,884,106	8.385
		2016	32,453	29	7,228,765	222.75	7.681	1.092	7,893,811	8.388
		2017	31,189	29	7,008,428	224.71	7.749	1.079	7,562,094	8.361
		2018	29,844	29	6,862,997	229.96	7.930	1.064	7,302,229	8.437
		Total	157,830	29	35,112,056	222.47	7.671		38,412,737	8.392
	Contents	2014	14,950	2	91,872	6.15	3.073	1.264	116,126	3.884
		2015	15,622	2	101,202	6.48	3.239	1.211	122,556	3.923
		2016	15,851	2	106,612	6.73	3.363	1.176	125,376	3.955
		2017	15,926	2	110,509	6.94	3.469	1.151	127,196	3.993
		2018	15,920	2	114,803	7.21	3.606	1.126	129,268	4.060
		Total	78,269	2	524,998	6.71	3.354		620,522	3.964
	Total	2014	46,872	20.39	6,962,338	148.54	7.286		7,886,623	8.253
		2015	48,044	20.22	7,242,602	150.75	7.455		8,006,661	8.242
		2016	48,304	20.14	7,335,377	151.86	7.540		8,019,187	8.243
		2017	47,115	19.87	7,118,937	151.10	7.603		7,689,290	8.212
		2018	45,764	19.61	6,977,800	152.47	7.776		7,431,497	8.282
		Total	236,099	20.05	35,637,054	150.94	7.529		39,033,258	8.246
370	Buildings	2014	1,973	31	377,841	191.51	6.178	1.131	427,338	6.987
		2015	2,018	31	404,891	200.64	6.472	1.104	447,000	7.145
		2016	2,034	31	414,019	203.55	6.566	1.092	452,109	7.170
		2017	1,951	31	401,629	205.86	6.641	1.079	433,358	7.165
		2018	1,858	31	387,195	208.39	6.722	1.064	411,975	7.153
		Total	9,834	31	1,985,575	201.91	6.513		2,171,780	7.124
	Contents	2014	1,170	2	9,375	8.01	4.006	1.264	11,850	5.064
		2015	1,196	2	10,060	8.41	4.206	1.211	12,183	5.093
		2016	1,204	2	10,175	8.45	4.225	1.176	11,966	4.969
		2017	1,175	2	9,927	8.45	4.224	1.151	11,426	4.862
		2018	1,134	2	9,662	8.52	4.260	1.126	10,879	4.797
		Total	5,879	2	49,199	8.37	4.184		58,304	4.959
	Total	2014	3,143	20.20	387,216	123.20	6.098		439,188	6.916
		2015	3,214	20.21	414,951	129.11	6.389		459,182	7.070
		2016	3,238	20.22	424,194	131.00	6.480		464,075	7.089
		2017	3,126	20.10	411,556	131.66	6.550		444,784	7.079
		2018	2,992	20.01	396,857	132.64	6.629		422,855	7.063
		Total	15,713	20.15	2,034,774	129.50	6.427		2,230,084	7.044

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF TRENDED AVERAGE RATING FACTORS
EXTENDED COVERAGE

Territory	Class	Year	(1) Earned House Years	(2) Current Manual Base Rate[(a)]	(3) Aggregate Calculated Earned Premium at Current Level	(4) Average Rate (3) / (1)	(5) Average Rating Factor (3)/[(1)x(2)]	(6) Premium Trend Factor	(7) Trended Aggregate Calculated Earned Premium at Current Level (3) x (6)	(8) Trended Average Rating Factor (7)/[(1)x(2)]
380	Buildings	2014	5,354	27	1,089,490	203.49	7.537	1.131	1,232,213	8.524
		2015	5,504	27	1,152,830	209.45	7.758	1.104	1,272,724	8.564
		2016	5,486	27	1,169,415	213.16	7.895	1.092	1,277,001	8.621
		2017	5,356	27	1,144,620	213.71	7.915	1.079	1,235,045	8.540
		2018	5,229	27	1,143,773	218.74	8.101	1.064	1,216,974	8.620
		Total	26,929	27	5,700,128	211.67	7.840		6,233,958	8.574
	Contents	2014	2,675	1	8,689	3.25	3.248	1.264	10,983	4.106
		2015	2,825	1	9,915	3.51	3.510	1.211	12,007	4.250
		2016	2,858	1	10,324	3.61	3.612	1.176	12,141	4.248
		2017	2,894	1	10,753	3.72	3.716	1.151	12,377	4.277
		2018	2,926	1	11,156	3.81	3.813	1.126	12,562	4.293
		Total	14,178	1	50,837	3.59	3.586		60,069	4.237
	Total	2014	8,029	18.34	1,098,179	136.78	7.459		1,243,196	8.444
		2015	8,329	18.18	1,162,745	139.60	7.678		1,284,731	8.484
		2016	8,344	18.09	1,179,739	141.39	7.814		1,289,142	8.538
		2017	8,250	17.88	1,155,373	140.05	7.833		1,247,422	8.457
		2018	8,155	17.67	1,154,929	141.62	8.014		1,229,536	8.532
		Total	41,107	18.03	5,750,965	139.90	7.758		6,294,027	8.491
390	Buildings	2014	5,147	27	1,126,965	218.96	8.109	1.131	1,274,597	9.172
		2015	5,313	27	1,189,157	223.82	8.290	1.104	1,312,829	9.152
		2016	5,331	27	1,204,557	225.95	8.369	1.092	1,315,376	9.139
		2017	5,160	27	1,172,486	227.23	8.416	1.079	1,265,112	9.081
		2018	5,034	27	1,160,028	230.44	8.535	1.064	1,234,270	9.081
		Total	25,985	27	5,853,193	225.25	8.343		6,402,185	9.125
	Contents	2014	2,797	1	8,964	3.20	3.205	1.264	11,330	4.051
		2015	2,950	1	9,791	3.32	3.319	1.211	11,857	4.019
		2016	3,030	1	10,281	3.39	3.393	1.176	12,090	3.990
		2017	2,971	1	10,830	3.65	3.645	1.151	12,465	4.196
		2018	2,991	1	11,251	3.76	3.762	1.126	12,669	4.236
		Total	14,739	1	51,117	3.47	3.468		60,412	4.099
	Total	2014	7,944	17.85	1,135,929	142.99	8.013		1,285,928	9.071
		2015	8,263	17.72	1,198,948	145.10	8.189		1,324,686	9.048
		2016	8,361	17.58	1,214,838	145.30	8.266		1,327,467	9.032
		2017	8,131	17.50	1,183,316	145.53	8.316		1,277,578	8.979
		2018	8,025	17.31	1,171,279	145.95	8.432		1,246,938	8.977
		Total	40,724	17.59	5,904,310	144.98	8.242		6,462,597	9.022
Statewide	Buildings	2014	395,599	69.39	205,155,869	518.60	7.474	1.131	232,031,288	8.453
		2015	411,858	69.22	218,129,909	529.62	7.652	1.104	240,815,420	8.448
		2016	417,942	69.02	223,201,900	534.05	7.738	1.092	243,736,475	8.450
		2017	414,206	69.27	224,086,279	541.00	7.810	1.079	241,789,095	8.426
		2018	408,191	69.37	222,226,906	544.42	7.848	1.064	236,449,428	8.350
		Total	2,047,796	69.25	1,092,800,863	533.65	7.706		1,194,821,705	8.425
	Contents	2014	199,105	8.82	5,835,737	29.31	3.324	1.264	7,376,372	4.202
		2015	209,813	8.68	6,296,042	30.01	3.459	1.211	7,624,507	4.189
		2016	214,395	8.64	6,558,815	30.59	3.539	1.176	7,713,166	4.162
		2017	218,130	8.60	6,745,775	30.93	3.595	1.151	7,764,387	4.137
		2018	220,978	8.51	6,834,533	30.93	3.636	1.126	7,695,684	4.095
		Total	1,062,421	8.65	32,270,902	30.37	3.513		38,174,116	4.156
	Total	2014	594,704	49.11	210,991,606	354.78	7.224		239,407,659	8.197
		2015	621,671	48.78	224,425,951	361.00	7.400		248,439,927	8.192
		2016	632,337	48.55	229,760,715	363.35	7.484		251,449,641	8.191
		2017	632,336	48.35	230,832,054	365.05	7.551		249,553,482	8.163
		2018	629,169	47.99	229,061,439	364.07	7.586		244,145,111	8.085
		Total	3,110,217	48.55	1,125,071,765	361.73	7.451		1,232,995,820	8.166

(a) The Total Class Current Manual Base Rate is the weighted average of the Buildings and Contents Current Manual Base Rates using Earned House Years as weights.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF NON-HURRICANE EXPERIENCE BASE CLASS LOSS COST
EXTENDED COVERAGE

Territory	Year	(1) Earned House Years	(2) Trended Average Rating Factor	(3) Non-Hurricane Adjusted Incurred Losses	(4) Adjusted Incurred Excess Losses	(5) Excess Factor	(6) Loss Trend Factor	(7) Trended Non-Hurricane Losses adjusted for Excess [(3)-(4)]x(5)x(6)	(8) Trended Non-Hurricane Base Class Loss Cost (7)/[(1)x(2)]	(9) Trended Non-Hurricane Base Class Loss Cost with LAE (8) x 1.086
110	2014	23,000	14.914	1,287,328	0	1.022	1.741	2,290,545		
	2015	22,998	14.797	2,273,651	0	1.022	1.658	3,852,647		
	2016	22,763	14.732	2,047,152	0	1.022	1.579	3,303,567		
	2017	22,196	14.599	2,335,982	0	1.022	1.504	3,590,610		
	2018	21,516	14.378	2,930,154	0	1.022	1.432	4,288,292		
	Total	112,473	14.689	10,874,267	0			17,325,661	10.49	11.39
120	2014	32,680	11.198	1,796,511	0	1.022	1.741	3,196,536		
	2015	32,852	11.245	2,110,197	0	1.022	1.658	3,575,678		
	2016	32,668	11.285	1,187,654	0	1.022	1.579	1,916,562		
	2017	32,159	11.215	1,998,775	0	1.022	1.504	3,072,293		
	2018	30,767	10.869	3,089,689	0	1.022	1.432	4,521,772		
	Total	161,126	11.166	10,182,826	0			16,282,841	9.05	9.83
130	2014	7,578	5.971	258,480	0	1.033	1.741	464,864		
	2015	7,898	6.174	528,274	0	1.033	1.658	904,782		
	2016	8,009	6.209	318,982	0	1.033	1.579	520,294		
	2017	8,115	6.212	333,080	0	1.033	1.504	517,484		
	2018	8,250	6.183	415,647	0	1.033	1.432	614,848		
	Total	39,850	6.151	1,854,463	0			3,022,272	12.33	13.39
140	2014	48,527	6.427	2,059,127	0	1.033	1.741	3,703,243		
	2015	51,074	6.476	1,874,898	0	1.033	1.658	3,211,164		
	2016	51,977	6.517	1,948,352	0	1.033	1.579	3,177,971		
	2017	52,582	6.507	2,910,873	0	1.033	1.504	4,522,425		
	2018	52,763	6.407	3,500,117	0	1.033	1.432	5,177,569		
	Total	256,923	6.467	12,293,367	0			19,792,372	11.91	12.93
150	2014	27,004	5.919	3,553,264	271,548	1.033	1.741	5,902,012		
	2015	28,762	5.917	1,219,961	0	1.033	1.658	2,089,444		
	2016	29,796	5.905	948,992	0	1.033	1.579	1,547,907		
	2017	30,588	5.863	1,247,312	0	1.033	1.504	1,937,864		
	2018	31,084	5.780	2,482,084	0	1.033	1.432	3,671,638		
	Total	147,234	5.875	9,451,613	271,548			15,148,865	17.51	19.02

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF NON-HURRICANE EXPERIENCE BASE CLASS LOSS COST
EXTENDED COVERAGE

Territory	Year	(1) Earned House Years	(2) Trended Average Rating Factor	(3) Non-Hurricane Adjusted Incurred Losses	(4) Adjusted Incurred Excess Losses	(5) Excess Factor	(6) Loss Trend Factor	(7) Trended Non-Hurricane Losses adjusted for Excess [(3)-(4)]x(5)x(6)	(8) Trended Non-Hurricane Base Class Loss Cost (7)/[(1)x(2)]	(9) Trended Non-Hurricane Base Class Loss Cost with LAE (8) x 1.086
160	2014	26,832	6.410	1,349,362	0	1.033	1.741	2,426,764		
	2015	28,221	6.495	1,211,704	0	1.033	1.658	2,075,302		
	2016	28,673	6.482	1,340,282	0	1.033	1.579	2,186,143		
	2017	28,930	6.450	1,473,473	0	1.033	1.504	2,289,235		
	2018	28,883	6.401	2,365,523	0	1.033	1.432	3,499,214		
	Total	141,539	6.448	7,740,344	0			12,476,658	13.67	14.85
170	2014	2,938	5.228	75,889	0	1.076	1.741	142,164		
	2015	3,199	5.333	145,897	0	1.076	1.658	260,281		
	2016	3,405	5.318	109,119	0	1.076	1.579	185,394		
	2017	3,522	5.278	121,884	0	1.076	1.504	197,245		
	2018	3,675	5.307	263,886	0	1.076	1.432	406,604		
	Total	16,739	5.294	716,675	0			1,191,688	13.45	14.61
180	2014	25,954	6.044	1,427,598	0	1.076	1.741	2,674,342		
	2015	27,638	6.105	1,159,111	0	1.076	1.658	2,067,863		
	2016	28,950	6.206	1,258,173	0	1.076	1.579	2,137,641		
	2017	29,699	6.271	1,203,696	0	1.076	1.504	1,947,946		
	2018	30,286	6.313	1,333,680	0	1.076	1.432	2,054,977		
	Total	142,527	6.192	6,382,258	0			10,882,769	12.33	13.39
190	2014	10,795	4.866	319,699	0	1.076	1.741	598,897		
	2015	11,322	4.944	503,936	0	1.076	1.658	899,026		
	2016	11,832	4.973	547,590	0	1.076	1.579	930,358		
	2017	12,155	5.012	472,314	0	1.076	1.504	764,348		
	2018	12,615	5.043	504,923	0	1.076	1.432	778,002		
	Total	58,719	4.970	2,348,462	0			3,970,631	13.61	14.78
200	2014	7,313	4.082	306,187	0	1.076	1.741	573,585		
	2015	7,478	4.197	255,667	0	1.076	1.658	456,112		
	2016	7,502	4.262	324,113	0	1.076	1.579	550,669		
	2017	7,586	4.318	248,031	0	1.076	1.504	401,390		
	2018	7,710	4.370	189,058	0	1.076	1.432	291,307		
	Total	37,589	4.247	1,323,056	0			2,273,063	14.24	15.46

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF NON-HURRICANE EXPERIENCE BASE CLASS LOSS COST
EXTENDED COVERAGE

Territory	Year	(1) Earned House Years	(2) Trended Average Rating Factor	(3) Non-Hurricane Adjusted Incurred Losses	(4) Adjusted Incurred Excess Losses	(5) Excess Factor	(6) Loss Trend Factor	(7) Trended Non-Hurricane Losses adjusted for Excess [(3)-(4)]x(5)x(6)	(8) Trended Non-Hurricane Base Class Loss Cost (7)/[(1)x(2)]	(9) Trended Non-Hurricane Base Class Loss Cost with LAE (8) x 1.086
210	2014	8,031	5.183	221,281	0	1.076	1.741	414,529		
	2015	8,521	5.219	269,836	0	1.076	1.658	481,390		
	2016	9,004	5.311	395,793	0	1.076	1.579	672,454		
	2017	9,183	5.324	383,205	0	1.076	1.504	620,142		
	2018	9,573	5.342	388,780	0	1.076	1.432	599,045		
	Total	44,312	5.279	1,658,895	0			2,787,560	11.92	12.95
220	2014	28,780	10.207	4,985,789	1,942,318	1.076	1.741	5,701,383		
	2015	30,661	10.301	4,438,731	892,541	1.076	1.658	6,326,431		
	2016	30,538	10.377	4,913,004	1,087,191	1.076	1.579	6,500,071		
	2017	30,716	10.717	4,726,181	681,371	1.076	1.504	6,545,732		
	2018	30,893	10.990	5,409,185	1,148,849	1.076	1.432	6,564,463		
	Total	151,588	10.525	24,472,890	5,752,270			31,638,080	19.83	21.54
230	2014	19,053	3.664	456,291	0	1.076	1.741	854,777		
	2015	19,647	3.694	579,349	0	1.076	1.658	1,033,563		
	2016	19,897	3.695	910,883	0	1.076	1.579	1,547,594		
	2017	20,012	3.693	254,776	0	1.076	1.504	412,305		
	2018	19,891	3.742	393,763	0	1.076	1.432	606,723		
	Total	98,500	3.698	2,595,062	0			4,454,962	12.23	13.28
240	2014	24,465	5.652	1,224,561	0	1.076	1.741	2,293,990		
	2015	25,879	5.735	3,407,926	1,558,369	1.076	1.658	3,299,625		
	2016	27,068	5.722	1,482,670	0	1.076	1.579	2,519,062		
	2017	27,517	5.752	1,333,894	0	1.076	1.504	2,158,646		
	2018	27,838	5.766	2,117,545	11,399	1.076	1.432	3,245,218		
	Total	132,767	5.727	9,566,596	1,569,767			13,516,541	17.78	19.31
250	2014	14,765	8.419	1,170,692	0	1.076	1.741	2,193,076		
	2015	16,057	8.641	1,414,867	0	1.076	1.658	2,524,134		
	2016	16,686	8.818	1,424,133	0	1.076	1.579	2,419,608		
	2017	16,992	9.115	1,381,567	0	1.076	1.504	2,235,795		
	2018	16,971	9.410	1,953,825	0	1.076	1.432	3,010,516		
	Total	81,471	8.890	7,345,084	0			12,383,129	17.10	18.57

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF NON-HURRICANE EXPERIENCE BASE CLASS LOSS COST
EXTENDED COVERAGE

Territory	Year	(1) Earned House Years	(2) Trended Average Rating Factor	(3) Non-Hurricane Adjusted Incurred Losses	(4) Adjusted Incurred Excess Losses	(5) Excess Factor	(6) Loss Trend Factor	(7) Trended Non-Hurricane Losses adjusted for Excess [(3)-(4)]x(5)x(6)	(8) Trended Non-Hurricane Base Class Loss Cost (7)/[(1)x(2)]	(9) Trended Non-Hurricane Base Class Loss Cost with LAE (8) x 1.086
260	2014	10,797	5.252	285,026	0	1.076	1.741	533,944		
	2015	11,167	5.090	609,835	33,431	1.076	1.658	1,028,309		
	2016	11,594	5.193	1,954,972	1,322,218	1.076	1.579	1,075,052		
	2017	12,118	5.325	400,589	0	1.076	1.504	648,275		
	2018	12,325	5.319	759,554	14,925	1.076	1.432	1,147,348		
	Total	58,001	5.238	4,009,976	1,370,574			4,432,928	14.59	15.84
270	2014	30,792	12.621	3,665,289	404,113	1.076	1.741	6,109,213		
	2015	32,812	12.569	3,731,235	67,320	1.076	1.658	6,536,454		
	2016	33,626	12.656	4,913,194	935,238	1.076	1.579	6,758,563		
	2017	33,878	12.951	7,694,612	3,568,389	1.076	1.504	6,677,483		
	2018	34,463	13.272	5,105,839	824,580	1.076	1.432	6,596,701		
	Total	165,571	12.819	25,110,169	5,799,641			32,678,414	15.40	16.72
280	2014	6,810	10.569	438,793	0	1.076	1.741	821,998		
	2015	7,024	10.524	368,892	0	1.076	1.658	658,106		
	2016	7,169	10.326	489,111	0	1.076	1.579	831,002		
	2017	7,294	10.383	740,243	47,091	1.076	1.504	1,121,730		
	2018	7,400	10.628	587,221	0	1.076	1.432	904,809		
	Total	35,697	10.485	2,624,260	47,091			4,337,645	11.59	12.59
290	2014	8,329	9.783	974,825	0	1.076	1.741	1,826,155		
	2015	8,897	9.915	733,723	0	1.076	1.658	1,308,968		
	2016	9,243	9.991	599,349	0	1.076	1.579	1,018,296		
	2017	9,261	10.192	675,798	0	1.076	1.504	1,093,647		
	2018	9,279	10.435	1,137,782	0	1.076	1.432	1,753,131		
	Total	45,009	10.067	4,121,477	0			7,000,197	15.45	16.78
300	2014	10,274	4.389	222,298	0	1.076	1.741	416,434		
	2015	10,613	4.510	429,046	0	1.076	1.658	765,421		
	2016	10,723	4.574	433,073	0	1.076	1.579	735,793		
	2017	10,589	4.613	454,541	0	1.076	1.504	735,586		
	2018	10,553	4.641	450,591	0	1.076	1.432	694,285		
	Total	52,752	4.545	1,989,549	0			3,347,519	13.96	15.16

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF NON-HURRICANE EXPERIENCE BASE CLASS LOSS COST
EXTENDED COVERAGE

Territory	Year	(1) Earned House Years	(2) Trended Average Rating Factor	(3) Non-Hurricane Adjusted Incurred Losses	(4) Adjusted Incurred Excess Losses	(5) Excess Factor	(6) Loss Trend Factor	(7) Trended Non-Hurricane Losses adjusted for Excess [(3)-(4)]x(5)x(6)	(8) Trended Non-Hurricane Base Class Loss Cost (7)/[(1)x(2)]	(9) Trended Non-Hurricane Base Class Loss Cost with LAE (8) x 1.086
310	2014	53,868	8.214	4,306,772	1,115,542	1.076	1.741	5,978,182		
	2015	56,481	8.254	3,631,881	0	1.076	1.658	6,479,305		
	2016	57,344	8.278	4,497,691	699,661	1.076	1.579	6,452,868		
	2017	56,778	8.233	5,028,608	1,211,641	1.076	1.504	6,177,012		
	2018	55,949	8.245	9,482,931	5,523,018	1.076	1.432	6,101,560		
	Total	280,420	8.245	26,947,883	8,549,863			31,188,927	13.49	14.65
320	2014	25,472	8.466	2,035,004	312,016	1.076	1.741	3,227,700		
	2015	26,504	8.394	2,022,743	107,814	1.076	1.658	3,416,249		
	2016	27,079	8.371	2,321,071	263,613	1.076	1.579	3,495,629		
	2017	26,866	8.281	2,528,376	513,150	1.076	1.504	3,261,248		
	2018	26,443	8.225	2,718,400	630,693	1.076	1.432	3,216,806		
	Total	132,364	8.347	11,625,594	1,827,287			16,617,632	15.04	16.33
330	2014	2,505	5.338	110,005	12,960	1.076	1.741	181,797		
	2015	2,529	5.310	75,525	0	1.076	1.658	134,737		
	2016	2,532	5.270	179,575	73,350	1.076	1.579	180,477		
	2017	2,483	5.238	308,301	208,573	1.076	1.504	161,390		
	2018	2,433	5.162	167,466	60,275	1.076	1.432	165,163		
	Total	12,482	5.265	840,872	355,158			823,564	12.53	13.61
340	2014	48,262	11.320	6,393,157	2,880,094	1.076	1.741	6,581,078		
	2015	50,746	11.245	6,367,477	2,543,745	1.076	1.658	6,821,569		
	2016	50,850	11.175	7,278,655	3,315,332	1.076	1.579	6,733,702		
	2017	49,910	11.131	7,771,826	3,804,348	1.076	1.504	6,420,586		
	2018	48,781	11.305	7,519,546	3,523,538	1.076	1.432	6,157,177		
	Total	248,549	11.234	35,330,661	16,067,056			32,714,112	11.72	12.73
350	2014	23,892	7.084	1,264,180	0	1.076	1.741	2,368,209		
	2015	24,841	7.128	1,436,605	20,445	1.076	1.658	2,526,440		
	2016	25,162	7.170	1,517,737	26,300	1.076	1.579	2,533,957		
	2017	24,585	7.161	2,444,211	953,218	1.076	1.504	2,412,880		
	2018	23,892	7.225	2,665,509	1,181,005	1.076	1.432	2,287,372		
	Total	122,372	7.153	9,328,242	2,180,968			12,128,858	13.86	15.05

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CALCULATION OF NON-HURRICANE EXPERIENCE BASE CLASS LOSS COST
EXTENDED COVERAGE

Territory	Year	(1) Earned House Years	(2) Trended Average Rating Factor	(3) Non-Hurricane Adjusted Incurred Losses	(4) Adjusted Incurred Excess Losses	(5) Excess Factor	(6) Loss Trend Factor	(7) Trended Non-Hurricane Losses adjusted for Excess [(3)-(4)]x(5)x(6)	(8) Trended Non-Hurricane Base Class Loss Cost (7)/[(1)x(2)]	(9) Trended Non-Hurricane Base Class Loss Cost with LAE (8) x 1.086
360	2014	46,872	8.253	2,917,677	95,270	1.076	1.741	5,287,260		
	2015	48,044	8.242	2,238,903	0	1.076	1.658	3,994,221		
	2016	48,304	8.243	2,609,336	0	1.076	1.579	4,433,272		
	2017	47,115	8.212	5,012,775	1,771,858	1.076	1.504	5,244,789		
	2018	45,764	8.282	3,803,771	583,869	1.076	1.432	4,961,329		
	Total	236,099	8.246	16,582,462	2,450,997			23,920,871	12.29	13.35
370	2014	3,143	6.916	136,127	0	1.076	1.741	255,009		
	2015	3,214	7.070	199,040	35,006	1.076	1.658	292,639		
	2016	3,238	7.089	102,056	0	1.076	1.579	173,394		
	2017	3,126	7.079	123,665	0	1.076	1.504	200,128		
	2018	2,992	7.063	256,669	77,651	1.076	1.432	275,837		
	Total	15,713	7.044	817,557	112,656			1,197,007	10.81	11.74
380	2014	8,029	8.444	448,809	0	1.076	1.741	840,761		
	2015	8,329	8.484	465,843	0	1.076	1.658	831,068		
	2016	8,344	8.538	489,713	0	1.076	1.579	832,024		
	2017	8,250	8.457	589,865	22,639	1.076	1.504	917,944		
	2018	8,155	8.532	696,525	113,340	1.076	1.432	898,591		
	Total	41,107	8.491	2,690,755	135,979			4,320,388	12.38	13.44
390	2014	7,944	9.071	299,900	0	1.076	1.741	561,807		
	2015	8,263	9.048	565,978	0	1.076	1.658	1,009,709		
	2016	8,361	9.032	367,108	0	1.076	1.579	623,718		
	2017	8,131	8.979	640,358	40,546	1.076	1.504	970,678		
	2018	8,025	8.977	595,032	0	1.076	1.432	916,844		
	Total	40,724	9.022	2,468,376	40,546			4,082,756	11.11	12.07
Statewide	2014	594,704	8.197	43,989,921	7,033,861		1.741	68,420,254		
	2015	621,671	8.192	44,270,731	5,258,671		1.658	68,860,637		
	2016	632,337	8.191	46,909,533	7,722,904		1.579	65,993,042		
	2017	632,336	8.163	54,838,811	12,822,825		1.504	67,256,836		
	2018	629,169	8.085	63,284,695	13,693,140		1.432	75,407,141		
	Total	3,110,217	8.166	253,293,691	46,531,402			345,937,910	13.62	14.79

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DERIVATION OF MODELED HURRICANE BASE CLASS LOSS COST

Territory	(1) Modeled Hurricane Losses	(2) Latest-Year Earned House Years	(3) Latest-Year Trended Average Rating Factor	(4) Modeled Hurricane Base Class Loss Cost = (1) / [(2)x(3)]
110	19,078,346	21,516	14.378	61.67
120	19,402,386	30,767	10.869	58.02
130	2,145,287	8,250	6.183	42.06
140	17,296,104	52,763	6.407	51.16
150	3,935,052	31,084	5.780	21.90
160	4,536,748	28,883	6.401	24.54
170	160,847	3,675	5.307	8.25
180	2,287,513	30,286	6.313	11.96
190	1,178,918	12,615	5.043	18.53
200	791,731	7,710	4.370	23.50
210	491,617	9,573	5.342	9.61
220	2,173,829	30,893	10.990	6.40
230	1,245,622	19,891	3.742	16.74
240	1,156,591	27,838	5.766	7.21
250	839,212	16,971	9.410	5.26
260	286,002	12,325	5.319	4.36
270	1,390,621	34,463	13.272	3.04
280	209,953	7,400	10.628	2.67
290	358,000	9,279	10.435	3.70
300	243,496	10,553	4.641	4.97
310	881,574	55,949	8.245	1.91
320	483,500	26,443	8.225	2.22
330	22,963	2,433	5.162	1.83
340	978,523	48,781	11.305	1.77
350	268,834	23,892	7.225	1.56
360	304,627	45,764	8.282	0.80
370	13,493	2,992	7.063	0.64
380	33,428	8,155	8.532	0.48
390	30,146	8,025	8.977	0.42
Statewide	82,224,963	629,169	8.085	16.16

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DERIVATION OF NET COST OF REINSURANCE

Territory	(1) Net Cost of Reinsurance	(2) Latest-Year Earned House Years	(3) Latest-Year Trended Average Rating Factor	(4) Expected Loss and Fixed Expense Ratio	(5) Net Cost of Reinsurance per Policy [(a)] = (1) / [(2)x(3)x(4)]
110	18,230,965	21,516	14.378	78.0%	75.55
120	23,681,869	30,767	10.869	78.0%	90.79
130	2,273,893	8,250	6.183	78.0%	57.15
140	20,825,824	52,763	6.407	78.0%	78.98
150	4,670,250	31,084	5.780	78.0%	33.33
160	6,092,161	28,883	6.401	78.0%	42.25
170	181,254	3,675	5.307	78.0%	11.91
180	3,000,717	30,286	6.313	78.0%	20.12
190	1,596,355	12,615	5.043	78.0%	32.17
200	1,026,282	7,710	4.370	78.0%	39.05
210	648,227	9,573	5.342	78.0%	16.25
220	3,021,306	30,893	10.990	78.0%	11.41
230	1,595,544	19,891	3.742	78.0%	27.48
240	1,525,072	27,838	5.766	78.0%	12.18
250	1,128,309	16,971	9.410	78.0%	9.06
260	368,765	12,325	5.319	78.0%	7.21
270	1,902,220	34,463	13.272	78.0%	5.33
280	281,635	7,400	10.628	78.0%	4.59
290	480,676	9,279	10.435	78.0%	6.36
300	290,742	10,553	4.641	78.0%	7.61
310	1,150,520	55,949	8.245	78.0%	3.20
320	581,845	26,443	8.225	78.0%	3.43
330	26,480	2,433	5.162	78.0%	2.70
340	1,011,296	48,781	11.305	78.0%	2.35
350	223,577	23,892	7.225	78.0%	1.66
360	228,199	45,764	8.282	78.0%	0.77
370	10,463	2,992	7.063	78.0%	0.63
380	13,602	8,155	8.532	78.0%	0.25
390	8,402	8,025	8.977	78.0%	0.15
Statewide	96,076,450	629,169	8.085	78.0%	24.21

[(a)] For use on page C-12 Column (16)

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

SECTION E - SUPPLEMENTAL MATERIAL

North Carolina G.S. 58-36-15(h) specifies that the following information must be included in all policy form, rule and rate filings filed under Article 36. 11 NCAC 10.1105 specifies that additional detail be provided under each of these items. These materials are contained on the pages indicated.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

EARNED PREMIUMS AT ACTUAL AND CURRENT RATE LEVELS

I. Earned Premium at Collected Rate Level

Year	Fire	Extended Coverage
2014	$ 77,310,866	$ 148,119,019
2015	79,988,160	165,119,801
2016	80,429,455	171,905,231
2017	82,314,610	171,529,972
2018	84,463,947	172,049,992

II. Earned Premium at Current Rate Level

Year	Fire	Extended Coverage
2014	$ 65,097,287	$ 210,991,606
2015	68,868,522	224,425,951
2016	69,995,562	229,760,715
2017	70,347,211	230,832,054
2018	71,555,474	229,061,439

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

PAID/INCURRED LOSSES AND ALLOCATED LOSS ADJUSTMENT EXPENSE

I. Paid Losses

The Rate Bureau is advised by ISO that paid loss and loss adjustment expenses are not available for the experience period of this filing.

II. Incurred Losses [(a)]

Year	Fire	Extended Coverage
2014	$ 37,795,819	$ 47,208,241
2015	38,673,800	47,947,554
2016	45,997,392	111,404,177
2017	37,629,329	55,103,480
2018	41,544,320	575,538,622

(a) Incurred losses are developed, adjusted to a common deductible of $500, include actual hurricane losses and do not include loss adjustment expense.

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DWELLING PROPERTY INSURANCE

ANTICIPATED LOSS AND LOSS ADJUSTMENT EXPENSE RATIOS

The anticipated loss and LAE ratios included in the 2011 filing for rates effective during the experience period 2014 – 2018 were 0.539 for Fire and 0.166 for Extended Coverage.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

EXCLUDED COMPANIES

(The market shares shown are based on 2018 Dwelling Fire and Extended Coverage written premium.)

The historical experience used to develop the statewide rate-level indications, territory rate-level indications and class indications is based on the experience of companies and residual market entities reporting to the Insurance Services Office (full statistical plan) and the Independent Statistical Service. The historical premium and loss experience utilized in this filing, after accounting for the premium and loss experience of reporting companies whose data were not included (as described below), accounts for 99.11% of the total North Carolina Residential Dwelling insurance market. The experience reported to the National Insurance Statistical Service is not considered in this review as over 98% of its reported premium is not written using the Rate Bureau's policy program. The experience reported to the American Association of Insurance Services and to Insurance Services Office under the Statistical Agent Plan is excluded because it is not available in sufficient detail. This experience accounts for approximately 0.27% of the total North Carolina Dwelling insurance market.

Premium and loss experience for the following insurers is not included in the filed experience: Bankers Standard Insurance Company, Federal Insurance Company, Hanover Insurance Company, Massachusetts Bay Insurance Company, Pacific Indemnity Company, and State Automobile Property and Casualty Insurance Company. The experience for these companies was not included pending resolution of data anomalies.

Expense experience for American Security Insurance Company is not included in this filing.

The loss development factors used in the calculation of the statewide rate level indications are based on ISO North Carolina experience. This experience represents 25.00% of the market. See also the prefiled testimony of P. Anderson, M. Berry, and P. Ericksen.

Earned House Years by year are as follows:

Year	Fire	Extended Coverage
2014	591,320	594,704
2015	615,474	621,671
2016	626,824	632,337
2017	629,918	632,336
2018	630,002	629,169

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

ADJUSTMENTS TO PREMIUMS, LOSSES, LOSS ADJUSTMENT EXPENSES, EXPENSES AND EXPOSURES

Adjustments made to premiums, losses, loss adjustment expenses, and expenses are set forth below and in the prefiled testimony of P. Anderson, M. Berry, S. Fiete, M. Mao and P. Ericksen.

Losses are adjusted to the $500 base deductible level by application of loss elimination ratios. These factors are applied on a record-by-record basis and vary by cause of loss.

Losses were developed to an ultimate basis through the application of loss development factors.

Non-hurricane losses for Extended Coverage have been smoothed using an excess procedure.

Additionally, due to the volatile nature and the catastrophic potential of hurricane losses, they have been removed from the actual data. A separate provision for hurricane losses was included based on modeled hurricane losses developed by Aon.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

EARNED PREMIUM AT PRESENT RATES CALCULATION

Earned premium at present rates by coverage is calculated by the following formula for each exposure:

Fire Premium = Territory Base Rate × Amount of Insurance Factor × Optional Coverage Factor

Extended Coverage Premium = Territory Base Rate × Amount of Insurance Factor × Optional Coverage Factor

The results are then summed to generate the aggregate earned premium at present rates used in the rate review.

A sample calculation for a single insured is shown below. This sample insured is in Territory 230, Coverage A, $30,000 amount of insurance, protection class 8, masonry construction, Extended Coverage policy form 1.

Fire:		
(1)	Territory 230, Coverage A, protection class 8, masonry construction base rate	$61
(2)	Amount of insurance factor for $30,000	1.60
(3)	Optional Coverage Factor	1.00
(4)	Earned premium at present rates (1)×(2)×(3)	$97.60
Extended Coverage:		
(1)	Territory 230, Coverage A, masonry construction, policy form 1 base rate	$76
(2)	Amount of insurance factor for $30,000	1.79
(3)	Optional Coverage Factor	1.00
(4)	Earned premium at present rates (1)×(2)×(3)	$136.04

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

TOP TEN DWELLING FIRE INSURANCE WRITERS

Company Name	2019 Written Premium [(a)]	2019 Written Premium Market Share	2019 Earned Premium [(a)]	2019 Earned Premium Market Share
North Carolina Farm Bureau Mutual Insurance Company	8,657,492	23.98%	9,992,905	24.19%
United Services Automobile Association	5,455,693	15.11%	6,336,652	15.34%
Nationwide Mutual Fire Insurance Company	4,119,811	11.41%	4,974,286	12.04%
American Modern Select Insurance Company	3,487,082	9.66%	4,160,876	10.07%
American Strategic Insurance Company	1,875,601	5.20%	1,775,512	4.30%
USAA Casualty Insurance Company	1,618,062	4.48%	1,822,320	4.41%
The Cincinnati Insurance Company	1,057,133	2.93%	1,254,042	3.04%
USAA General Indemnity Company	1,036,111	2.87%	1,176,082	2.85%
State Automobile Property & Casualty Insurance Company	962,371	2.67%	1,001,998	2.43%
Lititz Mutual Insurance Company	809,514	2.24%	920,622	2.23%
Total	29,078,870	80.54%	33,415,295	80.88%
Grand Total	36,103,745		41,317,024	

[(a)] NCRB Expense Experience data call, based on 2019 Annual Statement, Statutory Page 14, Line 1.0 (Residential Only).

Notes:
The Beach and Fair Plans are not included in this report.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

TOP TEN DWELLING EXTENDED COVERAGE INSURANCE WRITERS

Company Name	2019 Written Premium [(a)]	2019 Written Premium Market Share	2019 Earned Premium [(a)]	2019 Earned Premium Market Share
United Services Automobile Association	19,447,413	25.99%	17,819,145	26.56%
North Carolina Farm Bureau Mutual Insurance Company	11,951,781	15.97%	10,518,536	15.68%
Nationwide Mutual Fire Insurance Company	7,628,494	10.20%	7,161,977	10.68%
American Modern Select Insurance Company	6,366,330	8.51%	5,641,381	8.41%
USAA Casualty Insurance Company	4,448,702	5.95%	3,988,604	5.95%
USAA General Indemnity Company	2,987,357	3.99%	2,677,419	3.99%
Pennsylvania National Mutual Casualty Insurance Co	2,851,268	3.81%	2,052,886	3.06%
American Strategic Insurance Company	2,234,036	2.99%	2,109,724	3.14%
The Cincinnati Insurance Company	2,072,875	2.77%	1,847,261	2.75%
Lititz Mutual Insurance Company	1,618,310	2.16%	1,476,363	2.20%
Total	61,606,566	82.34%	55,293,296	82.42%
Grand Total	74,822,388		67,085,445	

[(a)] NCRB Expense Experience data call, based on 2019 Annual Statement, Statutory Page 14, Line 2.1 (Residential Only).

Notes:
The Beach and Fair Plans are not included in this report.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSSES AND LOSS ADJUSTMENT EXPENSE

The data requested by 11 NCAC 10.1105(1)(i)(i,ii) were not being collected or reported in the experience period. The response to 11 NCAC 10.1105(1), page E-4, provides incurred loss and loss adjustment expense information. The response to 11 NCAC 10.1105(1)(1) provides incurred data by cause of loss. Additional information concerning loss adjustment expenses is provided in the response to 11 NCAC 10.1105(7). Additional information concerning loss trend is provided in Section D and in the prefiled testimony of P. Anderson, M. Berry, and P. Ericksen.

(iii) Applied Loss Development Factor

Year	Fire	Extended Coverage
2014	1.000	1.000
2015	1.000	1.001
2016	0.997	1.001
2017	0.994	1.005
2018	0.965	1.029

(iv) Loss Adjustment Expense Factor

	Fire	Extended Coverage
Non-Hurricane	1.098	1.086
Hurricane	-	1.060

(v) Applied Loss Trend Factor

Year	Fire	Extended Coverage
2014	0.961	1.741
2015	0.970	1.658
2016	0.980	1.579
2017	0.990	1.504
2018	1.000	1.432

(vi) Trended Incurred Losses and LAE

Year	Fire	Extended Coverage
2014	$ 39,864,551	$ 89,238,000
2015	41,202,614	86,319,550
2016	49,500,084	191,009,464
2017	40,903,833	89,979,410
2018	45,615,663	895,054,101

(vii) This information is given in the response to 11 NCAC 10.1105(1), page E-5.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

EXCESS LOSS PROCEDURE

See Section D and prefiled testimony of P. Anderson, M. Berry, P. Ericksen, S. Fiete and M. Mao.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

CAUSE OF LOSS DATA

Loss experience by cause of loss is provided on the attached Exhibit (1)(l).

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSSES BY CAUSE
EXTENDED COVERAGE

Territory	Cause of Loss	Year	Incurred Losses	Incurred Claims	Average Loss	Frequency per-100	Pure Premium
110	Wind and Hail	2014	1,686,370	311	5,422	1.35	73.32
		2015	43,861	10	4,386	0.04	1.91
		2016	5,242,184	943	5,559	4.14	230.29
		2017	286,894	30	9,563	0.14	12.93
		2018	948,003	115	8,244	0.53	44.06
	Water Damage and Freezing	2014	1,140,483	122	9,348	0.53	49.59
		2015	2,049,533	183	11,200	0.80	89.12
		2016	1,686,090	115	14,662	0.51	74.07
		2017	1,974,914	129	15,309	0.58	88.98
		2018	2,609,672	176	14,828	0.82	121.29
	All Other Physical Damage	2014	112,989	17	6,646	0.07	4.91
		2015	220,470	24	9,186	0.10	9.59
		2016	206,053	26	7,925	0.11	9.05
		2017	85,058	11	7,733	0.05	3.83
		2018	102,467	13	7,882	0.06	4.76
	Vandalism & Malicious Mischief	2014	5,442	1	5,442	0.00	0.24
		2015	17,004	6	2,834	0.03	0.74
		2016	32,524	3	10,841	0.01	1.43
		2017	0	0	0	0.00	0.00
		2018	55,914	10	5,591	0.05	2.60
	Total	2014	2,945,284	451	6,531	0.49	32.01
		2015	2,330,868	223	10,452	0.24	25.34
		2016	7,166,851	1,087	6,593	1.19	78.71
		2017	2,346,866	170	13,805	0.19	26.43
		2018	3,716,056	314	11,835	0.36	43.18
120	Wind and Hail	2014	427,120	117	3,651	0.36	13.07
		2015	815,765	162	5,036	0.49	24.83
		2016	3,241,182	681	4,759	2.08	99.22
		2017	600,988	99	6,071	0.31	18.69
		2018	144,714,688	7,763	18,642	25.23	4,703.57
	Water Damage and Freezing	2014	1,662,199	129	12,885	0.39	50.86
		2015	1,439,257	138	10,429	0.42	43.81
		2016	915,149	109	8,396	0.33	28.01
		2017	1,359,588	114	11,926	0.35	42.28
		2018	2,411,663	190	12,693	0.62	78.38
	All Other Physical Damage	2014	18,222	7	2,603	0.02	0.56
		2015	128,011	13	9,847	0.04	3.90
		2016	52,126	10	5,213	0.03	1.60
		2017	63,463	12	5,289	0.04	1.97
		2018	153,379	18	8,521	0.06	4.99
	Vandalism & Malicious Mischief	2014	5,822	2	2,911	0.01	0.18
		2015	9,171	3	3,057	0.01	0.28
		2016	4,145	3	1,382	0.01	0.13
		2017	3,827	3	1,276	0.01	0.12
		2018	24,347	4	6,087	0.01	0.79
	Total	2014	2,113,363	255	8,288	0.20	16.17
		2015	2,392,204	316	7,570	0.24	18.20
		2016	4,212,602	803	5,246	0.61	32.24
		2017	2,027,866	228	8,894	0.18	15.76
		2018	147,304,077	7,975	18,471	6.48	1,196.93

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSSES BY CAUSE
EXTENDED COVERAGE

Territory	Cause of Loss	Year	Incurred Losses	Incurred Claims	Average Loss	Frequency per-100	Pure Premium
130	Wind and Hail	2014	178,358	51	3,497	0.67	23.54
		2015	81,585	21	3,885	0.27	10.33
		2016	1,683,973	313	5,380	3.91	210.26
		2017	206,217	31	6,652	0.38	25.41
		2018	4,113,996	476	8,643	5.77	498.67
	Water Damage and Freezing	2014	133,754	12	11,146	0.16	17.65
		2015	479,347	33	14,526	0.42	60.69
		2016	231,892	19	12,205	0.24	28.95
		2017	127,900	18	7,106	0.22	15.76
		2018	272,122	29	9,384	0.35	32.98
	All Other Physical Damage	2014	40,830	3	13,610	0.04	5.39
		2015	0	0	0	0.00	0.00
		2016	16,811	6	2,802	0.07	2.10
		2017	14,343	7	2,049	0.09	1.77
		2018	28,497	6	4,750	0.07	3.45
	Vandalism & Malicious Mischief	2014	8,493	1	8,493	0.01	1.12
		2015	0	0	0	0.00	0.00
		2016	4,776	1	4,776	0.01	0.60
		2017	0	0	0	0.00	0.00
		2018	0	0	0	0.00	0.00
	Total	2014	361,435	67	5,395	0.22	11.92
		2015	560,932	54	10,388	0.17	17.76
		2016	1,937,452	339	5,715	1.06	60.48
		2017	348,460	56	6,223	0.17	10.74
		2018	4,414,615	511	8,639	1.55	133.78
140	Wind and Hail	2014	1,015,569	274	3,706	0.56	20.93
		2015	997,382	211	4,727	0.41	19.53
		2016	5,806,656	1,245	4,664	2.40	111.72
		2017	1,268,416	223	5,688	0.42	24.12
		2018	150,895,017	12,094	12,477	22.92	2,859.86
	Water Damage and Freezing	2014	1,061,480	142	7,475	0.29	21.87
		2015	1,140,501	174	6,555	0.34	22.33
		2016	974,376	146	6,674	0.28	18.75
		2017	1,423,502	179	7,953	0.34	27.07
		2018	2,139,051	222	9,635	0.42	40.54
	All Other Physical Damage	2014	517,231	83	6,232	0.17	10.66
		2015	209,594	36	5,822	0.07	4.10
		2016	254,133	42	6,051	0.08	4.89
		2017	202,014	42	4,810	0.08	3.84
		2018	1,904,439	168	11,336	0.32	36.09
	Vandalism & Malicious Mischief	2014	60,565	9	6,729	0.02	1.25
		2015	16,780	11	1,525	0.02	0.33
		2016	20,714	7	2,959	0.01	0.40
		2017	21,687	7	3,098	0.01	0.41
		2018	23,958	8	2,995	0.02	0.45
	Total	2014	2,654,845	508	5,226	0.26	13.68
		2015	2,364,257	432	5,473	0.21	11.57
		2016	7,055,879	1,440	4,900	0.69	33.94
		2017	2,915,619	451	6,465	0.21	13.86
		2018	154,962,465	12,492	12,405	5.92	734.24

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSSES BY CAUSE
EXTENDED COVERAGE

Territory	Cause of Loss	Year	Incurred Losses	Incurred Claims	Average Loss	Frequency per-100	Pure Premium
150	Wind and Hail	2014	3,062,833	468	6,545	1.73	113.42
		2015	358,640	143	2,508	0.50	12.47
		2016	3,381,724	841	4,021	2.82	113.50
		2017	682,507	156	4,375	0.51	22.31
		2018	23,987,018	2,774	8,647	8.92	771.68
	Water Damage and Freezing	2014	401,903	64	6,280	0.24	14.88
		2015	782,654	107	7,315	0.37	27.21
		2016	274,347	55	4,988	0.18	9.21
		2017	440,589	69	6,385	0.23	14.40
		2018	1,323,423	112	11,816	0.36	42.58
	All Other Physical Damage	2014	151,017	29	5,207	0.11	5.59
		2015	141,646	31	4,569	0.11	4.92
		2016	140,904	43	3,277	0.14	4.73
		2017	136,725	39	3,506	0.13	4.47
		2018	587,863	77	7,635	0.25	18.91
	Vandalism & Malicious Mischief	2014	13,820	5	2,764	0.02	0.51
		2015	36,210	5	7,242	0.02	1.26
		2016	8,125	1	8,125	0.00	0.27
		2017	4,108	1	4,108	0.00	0.13
		2018	35,315	7	5,045	0.02	1.14
	Total	2014	3,629,573	566	6,413	0.52	33.60
		2015	1,319,150	286	4,612	0.25	11.47
		2016	3,805,100	940	4,048	0.79	31.93
		2017	1,263,929	265	4,770	0.22	10.33
		2018	25,933,619	2,970	8,732	2.39	208.58
160	Wind and Hail	2014	362,255	109	3,323	0.41	13.50
		2015	581,384	142	4,094	0.50	20.60
		2016	4,645,762	1,054	4,408	3.68	162.03
		2017	586,615	123	4,769	0.43	20.28
		2018	85,194,118	7,583	11,235	26.25	2,949.63
	Water Damage and Freezing	2014	597,630	95	6,291	0.35	22.27
		2015	594,312	127	4,680	0.45	21.06
		2016	475,314	70	6,790	0.24	16.58
		2017	690,992	92	7,511	0.32	23.88
		2018	1,300,570	152	8,556	0.53	45.03
	All Other Physical Damage	2014	399,894	55	7,271	0.20	14.90
		2015	238,077	43	5,537	0.15	8.44
		2016	235,315	41	5,739	0.14	8.21
		2017	163,220	35	4,663	0.12	5.64
		2018	995,905	145	6,868	0.50	34.48
	Vandalism & Malicious Mischief	2014	34,525	6	5,754	0.02	1.29
		2015	39,815	8	4,977	0.03	1.41
		2016	31,077	8	3,885	0.03	1.08
		2017	32,647	8	4,081	0.03	1.13
		2018	60,197	9	6,689	0.03	2.08
	Total	2014	1,394,304	265	5,262	0.25	12.99
		2015	1,453,588	320	4,542	0.28	12.88
		2016	5,387,468	1,173	4,593	1.02	46.97
		2017	1,473,474	258	5,711	0.22	12.73
		2018	87,550,790	7,889	11,098	6.83	757.81

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSSES BY CAUSE
EXTENDED COVERAGE

Territory	Cause of Loss	Year	Incurred Losses	Incurred Claims	Average Loss	Frequency per-100	Pure Premium
170	Wind and Hail	2014	25,677	13	1,975	0.44	8.74
		2015	65,827	30	2,194	0.94	20.58
		2016	313,252	99	3,164	2.91	92.00
		2017	96,480	30	3,216	0.85	27.39
		2018	262,191	80	3,277	2.18	71.34
	Water Damage and Freezing	2014	35,803	7	5,115	0.24	12.19
		2015	74,023	14	5,287	0.44	23.14
		2016	14,149	7	2,021	0.21	4.16
		2017	21,807	6	3,635	0.17	6.19
		2018	58,066	15	3,871	0.41	15.80
	All Other Physical Damage	2014	16,279	4	4,070	0.14	5.54
		2015	10,916	4	2,729	0.13	3.41
		2016	19,928	9	2,214	0.26	5.85
		2017	2,855	1	2,855	0.03	0.81
		2018	16,775	5	3,355	0.14	4.56
	Vandalism & Malicious Mischief	2014	1,675	1	1,675	0.03	0.57
		2015	0	0	0	0.00	0.00
		2016	0	0	0	0.00	0.00
		2017	741	1	741	0.03	0.21
		2018	0	0	0	0.00	0.00
	Total	2014	79,434	25	3,177	0.21	6.76
		2015	150,766	48	3,141	0.38	11.78
		2016	347,329	115	3,020	0.84	25.50
		2017	121,883	38	3,207	0.27	8.65
		2018	337,032	100	3,370	0.68	22.93
180	Wind and Hail	2014	703,584	202	3,483	0.78	27.11
		2015	505,730	139	3,638	0.50	18.30
		2016	5,239,942	1,291	4,059	4.46	181.00
		2017	597,331	151	3,956	0.51	20.11
		2018	6,845,435	1,163	5,886	3.84	226.03
	Water Damage and Freezing	2014	458,232	93	4,927	0.36	17.66
		2015	570,122	115	4,958	0.42	20.63
		2016	416,334	101	4,122	0.35	14.38
		2017	397,961	81	4,913	0.27	13.40
		2018	592,587	103	5,753	0.34	19.57
	All Other Physical Damage	2014	278,900	45	6,198	0.17	10.75
		2015	131,384	45	2,920	0.16	4.75
		2016	151,843	57	2,664	0.20	5.25
		2017	201,584	42	4,800	0.14	6.79
		2018	227,688	45	5,060	0.15	7.52
	Vandalism & Malicious Mischief	2014	44,780	14	3,199	0.05	1.73
		2015	47,641	15	3,176	0.05	1.72
		2016	31,304	10	3,130	0.03	1.08
		2017	14,389	7	2,056	0.02	0.48
		2018	29,733	9	3,304	0.03	0.98
	Total	2014	1,485,496	354	4,196	0.34	14.31
		2015	1,254,877	314	3,996	0.28	11.35
		2016	5,839,423	1,459	4,002	1.26	50.43
		2017	1,211,265	281	4,311	0.24	10.20
		2018	7,695,443	1,320	5,830	1.09	63.52

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSSES BY CAUSE
EXTENDED COVERAGE

Territory	Cause of Loss	Year	Incurred Losses	Incurred Claims	Average Loss	Frequency per-100	Pure Premium
190	Wind and Hail	2014	233,329	61	3,825	0.57	21.61
		2015	186,309	57	3,269	0.50	16.46
		2016	3,392,241	899	3,773	7.60	286.70
		2017	273,841	69	3,969	0.57	22.53
		2018	10,954,220	1,545	7,090	12.25	868.35
	Water Damage and Freezing	2014	77,570	22	3,526	0.20	7.19
		2015	133,295	32	4,165	0.28	11.77
		2016	57,786	26	2,223	0.22	4.88
		2017	152,711	19	8,037	0.16	12.56
		2018	223,334	33	6,768	0.26	17.70
	All Other Physical Damage	2014	75,867	20	3,793	0.19	7.03
		2015	212,988	20	10,649	0.18	18.81
		2016	91,226	32	2,851	0.27	7.71
		2017	40,002	17	2,353	0.14	3.29
		2018	68,467	21	3,260	0.17	5.43
	Vandalism & Malicious Mischief	2014	3,490	2	1,745	0.02	0.32
		2015	7,198	2	3,599	0.02	0.64
		2016	3,043	4	761	0.03	0.26
		2017	5,759	3	1,920	0.02	0.47
		2018	3,872	3	1,291	0.02	0.31
	Total	2014	390,256	105	3,717	0.24	9.04
		2015	539,790	111	4,863	0.25	11.92
		2016	3,544,296	961	3,688	2.03	74.89
		2017	472,313	108	4,373	0.22	9.71
		2018	11,249,893	1,602	7,022	3.17	222.95
200	Wind and Hail	2014	176,525	58	3,044	0.79	24.14
		2015	242,043	75	3,227	1.00	32.37
		2016	4,256,757	948	4,490	12.64	567.42
		2017	188,332	43	4,380	0.57	24.83
		2018	10,698,667	1,337	8,002	17.34	1,387.64
	Water Damage and Freezing	2014	92,234	23	4,010	0.31	12.61
		2015	96,394	24	4,016	0.32	12.89
		2016	81,533	14	5,824	0.19	10.87
		2017	37,914	12	3,160	0.16	5.00
		2018	123,675	16	7,730	0.21	16.04
	All Other Physical Damage	2014	26,703	10	2,670	0.14	3.65
		2015	26,738	5	5,348	0.07	3.58
		2016	71,641	15	4,776	0.20	9.55
		2017	7,795	4	1,949	0.05	1.03
		2018	75,428	18	4,190	0.23	9.78
	Vandalism & Malicious Mischief	2014	10,724	3	3,575	0.04	1.47
		2015	15,689	6	2,615	0.08	2.10
		2016	868	2	434	0.03	0.12
		2017	13,990	0	0	0.00	1.84
		2018	1,974	2	987	0.03	0.26
	Total	2014	306,186	94	3,257	0.32	10.47
		2015	380,864	110	3,462	0.37	12.73
		2016	4,410,799	979	4,505	3.26	146.99
		2017	248,031	59	4,204	0.19	8.17
		2018	10,899,744	1,373	7,939	4.45	353.43

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSSES BY CAUSE
EXTENDED COVERAGE

Territory	Cause of Loss	Year	Incurred Losses	Incurred Claims	Average Loss	Frequency per-100	Pure Premium
210	Wind and Hail	2014	95,389	33	2,891	0.41	11.88
		2015	165,611	51	3,247	0.60	19.44
		2016	994,554	245	4,059	2.72	110.46
		2017	253,139	40	6,328	0.44	27.57
		2018	904,240	159	5,687	1.66	94.46
	Water Damage and Freezing	2014	56,243	16	3,515	0.20	7.00
		2015	74,056	18	4,114	0.21	8.69
		2016	113,572	19	5,977	0.21	12.61
		2017	57,623	20	2,881	0.22	6.27
		2018	112,563	27	4,169	0.28	11.76
	All Other Physical Damage	2014	62,635	12	5,220	0.15	7.80
		2015	20,583	14	1,470	0.16	2.42
		2016	72,089	23	3,134	0.26	8.01
		2017	73,565	17	4,327	0.19	8.01
		2018	61,829	10	6,183	0.10	6.46
	Vandalism & Malicious Mischief	2014	18,263	4	4,566	0.05	2.27
		2015	33,021	4	8,255	0.05	3.88
		2016	7,593	6	1,266	0.07	0.84
		2017	713	0	0	0.00	0.08
		2018	12,988	2	6,494	0.02	1.36
	Total	2014	232,530	65	3,577	0.20	7.24
		2015	293,271	87	3,371	0.26	8.60
		2016	1,187,808	293	4,054	0.81	32.98
		2017	385,040	77	5,001	0.21	10.48
		2018	1,091,620	198	5,513	0.52	28.51
220	Wind and Hail	2014	1,918,772	353	5,436	1.23	66.67
		2015	1,485,562	292	5,088	0.95	48.45
		2016	12,656,657	2,356	5,372	7.71	414.46
		2017	2,059,617	336	6,130	1.09	67.05
		2018	24,903,783	3,860	6,452	12.49	806.13
	Water Damage and Freezing	2014	1,857,472	261	7,117	0.91	64.54
		2015	2,529,499	314	8,056	1.02	82.50
		2016	2,172,295	334	6,504	1.09	71.13
		2017	1,865,023	214	8,715	0.70	60.72
		2018	3,420,664	334	10,242	1.08	110.73
	All Other Physical Damage	2014	994,956	223	4,462	0.77	34.57
		2015	349,448	99	3,530	0.32	11.40
		2016	689,470	149	4,627	0.49	22.58
		2017	655,656	119	5,510	0.39	21.35
		2018	802,476	126	6,369	0.41	25.98
	Vandalism & Malicious Mischief	2014	291,377	59	4,939	0.21	10.12
		2015	302,807	76	3,984	0.25	9.88
		2016	168,551	28	6,020	0.09	5.52
		2017	182,324	25	7,293	0.08	5.94
		2018	205,851	29	7,098	0.09	6.66
	Total	2014	5,062,577	896	5,650	0.78	43.98
		2015	4,667,316	781	5,976	0.64	38.06
		2016	15,686,973	2,867	5,472	2.35	128.42
		2017	4,762,620	694	6,863	0.56	38.76
		2018	29,332,774	4,349	6,745	3.52	237.37

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSSES BY CAUSE
EXTENDED COVERAGE

Territory	Cause of Loss	Year	Incurred Losses	Incurred Claims	Average Loss	Frequency per-100	Pure Premium
230	Wind and Hail	2014	287,705	131	2,196	0.69	15.10
		2015	476,153	145	3,284	0.74	24.24
		2016	9,683,835	2,333	4,151	11.73	486.70
		2017	126,202	53	2,381	0.26	6.31
		2018	16,634,647	2,769	6,007	13.92	836.29
	Water Damage and Freezing	2014	84,558	30	2,819	0.16	4.44
		2015	162,598	41	3,966	0.21	8.28
		2016	200,426	41	4,888	0.21	10.07
		2017	40,269	14	2,876	0.07	2.01
		2018	184,665	33	5,596	0.17	9.28
	All Other Physical Damage	2014	84,659	20	4,233	0.10	4.44
		2015	34,178	18	1,899	0.09	1.74
		2016	171,190	45	3,804	0.23	8.60
		2017	59,579	19	3,136	0.09	2.98
		2018	110,484	33	3,348	0.17	5.55
	Vandalism & Malicious Mischief	2014	7,060	4	1,765	0.02	0.37
		2015	6,682	6	1,114	0.03	0.34
		2016	30,506	14	2,179	0.07	1.53
		2017	29,622	9	3,291	0.04	1.48
		2018	21,748	7	3,107	0.04	1.09
	Total	2014	463,982	185	2,508	0.24	6.09
		2015	679,611	210	3,236	0.27	8.65
		2016	10,085,957	2,433	4,145	3.06	126.73
		2017	255,672	95	2,691	0.12	3.19
		2018	16,951,544	2,842	5,965	3.57	213.06
240	Wind and Hail	2014	643,906	144	4,472	0.59	26.32
		2015	2,988,346	519	5,758	2.01	115.47
		2016	3,248,116	610	5,325	2.25	120.00
		2017	741,909	189	3,925	0.69	26.96
		2018	3,730,588	632	5,903	2.27	134.01
	Water Damage and Freezing	2014	440,737	56	7,870	0.23	18.02
		2015	268,919	60	4,482	0.23	10.39
		2016	363,629	83	4,381	0.31	13.43
		2017	313,062	70	4,472	0.25	11.38
		2018	1,003,724	80	12,547	0.29	36.06
	All Other Physical Damage	2014	123,193	37	3,330	0.15	5.04
		2015	148,177	46	3,221	0.18	5.73
		2016	259,892	54	4,813	0.20	9.60
		2017	275,406	33	8,346	0.12	10.01
		2018	211,089	47	4,491	0.17	7.58
	Vandalism & Malicious Mischief	2014	30,680	9	3,409	0.04	1.25
		2015	91,298	5	18,260	0.02	3.53
		2016	13,195	7	1,885	0.03	0.49
		2017	13,741	6	2,290	0.02	0.50
		2018	25,246	8	3,156	0.03	0.91
	Total	2014	1,238,516	246	5,035	0.25	12.66
		2015	3,496,740	630	5,550	0.61	33.78
		2016	3,884,832	754	5,152	0.70	35.88
		2017	1,344,118	298	4,510	0.27	12.21
		2018	4,970,647	767	6,481	0.69	44.64

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSSES BY CAUSE
EXTENDED COVERAGE

Territory	Cause of Loss	Year	Incurred Losses	Incurred Claims	Average Loss	Frequency per-100	Pure Premium
250	Wind and Hail	2014	335,137	87	3,852	0.59	22.70
		2015	480,502	108	4,449	0.67	29.92
		2016	3,495,908	764	4,576	4.58	209.51
		2017	657,912	119	5,529	0.70	38.72
		2018	10,761,027	1,583	6,798	9.33	634.08
	Water Damage and Freezing	2014	517,230	52	9,947	0.35	35.03
		2015	699,916	98	7,142	0.61	43.59
		2016	543,005	83	6,542	0.50	32.54
		2017	568,112	70	8,116	0.41	33.43
		2018	991,360	108	9,179	0.64	58.41
	All Other Physical Damage	2014	270,662	44	6,151	0.30	18.33
		2015	194,376	28	6,942	0.17	12.11
		2016	132,673	46	2,884	0.28	7.95
		2017	141,877	34	4,173	0.20	8.35
		2018	272,782	64	4,262	0.38	16.07
	Vandalism & Malicious Mischief	2014	60,454	14	4,318	0.09	4.09
		2015	132,177	20	6,609	0.12	8.23
		2016	25,045	8	3,131	0.05	1.50
		2017	26,865	5	5,373	0.03	1.58
		2018	62,374	10	6,237	0.06	3.68
	Total	2014	1,183,483	197	6,008	0.33	20.04
		2015	1,506,971	254	5,933	0.40	23.46
		2016	4,196,631	901	4,658	1.35	62.88
		2017	1,394,766	228	6,117	0.34	20.52
		2018	12,087,543	1,765	6,848	2.60	178.06
260	Wind and Hail	2014	181,473	50	3,629	0.46	16.81
		2015	412,558	114	3,619	1.02	36.94
		2016	1,851,114	380	4,871	3.28	159.66
		2017	231,054	57	4,054	0.47	19.07
		2018	1,316,336	246	5,351	2.00	106.80
	Water Damage and Freezing	2014	73,273	11	6,661	0.10	6.79
		2015	102,105	19	5,374	0.17	9.14
		2016	39,185	8	4,898	0.07	3.38
		2017	51,462	15	3,431	0.12	4.25
		2018	210,378	21	10,018	0.17	17.07
	All Other Physical Damage	2014	29,278	14	2,091	0.13	2.71
		2015	56,540	28	2,019	0.25	5.06
		2016	221,391	34	6,512	0.29	19.10
		2017	100,987	17	5,940	0.14	8.33
		2018	141,665	25	5,667	0.20	11.49
	Vandalism & Malicious Mischief	2014	1,973	3	658	0.03	0.18
		2015	66,248	1	66,248	0.01	5.93
		2016	16,784	2	8,392	0.02	1.45
		2017	17,086	1	17,086	0.01	1.41
		2018	41,995	1	41,995	0.01	3.41
	Total	2014	285,997	78	3,667	0.18	6.62
		2015	637,451	162	3,935	0.36	14.27
		2016	2,128,474	424	5,020	0.91	45.90
		2017	400,589	90	4,451	0.19	8.26
		2018	1,710,374	293	5,837	0.59	34.69

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSSES BY CAUSE
EXTENDED COVERAGE

Territory	Cause of Loss	Year	Incurred Losses	Incurred Claims	Average Loss	Frequency per-100	Pure Premium
270	Wind and Hail	2014	932,531	175	5,329	0.57	30.28
		2015	1,006,519	170	5,921	0.52	30.68
		2016	3,702,877	608	6,090	1.81	110.12
		2017	3,909,751	496	7,883	1.46	115.41
		2018	2,997,112	395	7,588	1.15	86.97
	Water Damage and Freezing	2014	1,724,923	190	9,079	0.62	56.02
		2015	1,813,350	197	9,205	0.60	55.26
		2016	1,804,334	195	9,253	0.58	53.66
		2017	2,175,347	214	10,165	0.63	64.21
		2018	2,868,479	245	11,708	0.71	83.23
	All Other Physical Damage	2014	821,395	129	6,367	0.42	26.68
		2015	904,145	133	6,798	0.41	27.56
		2016	1,020,474	162	6,299	0.48	30.35
		2017	1,596,177	139	11,483	0.41	47.12
		2018	952,317	142	6,706	0.41	27.63
	Vandalism & Malicious Mischief	2014	195,006	23	8,479	0.07	6.33
		2015	151,989	27	5,629	0.08	4.63
		2016	65,142	7	9,306	0.02	1.94
		2017	21,112	10	2,111	0.03	0.62
		2018	145,547	14	10,396	0.04	4.22
	Total	2014	3,673,855	517	7,106	0.42	29.83
		2015	3,876,003	527	7,355	0.40	29.53
		2016	6,592,827	972	6,783	0.72	49.02
		2017	7,702,387	859	8,967	0.63	56.84
		2018	6,963,455	796	8,748	0.58	50.51
280	Wind and Hail	2014	238,041	42	5,668	0.62	34.95
		2015	173,578	32	5,424	0.46	24.71
		2016	385,025	62	6,210	0.86	53.71
		2017	131,159	30	4,372	0.41	17.98
		2018	713,922	110	6,490	1.49	96.48
	Water Damage and Freezing	2014	92,191	17	5,423	0.25	13.54
		2015	132,790	21	6,323	0.30	18.91
		2016	126,934	18	7,052	0.25	17.71
		2017	450,802	28	16,100	0.38	61.80
		2018	220,008	33	6,667	0.45	29.73
	All Other Physical Damage	2014	108,458	27	4,017	0.40	15.93
		2015	41,947	9	4,661	0.13	5.97
		2016	59,177	13	4,552	0.18	8.25
		2017	158,282	21	7,537	0.29	21.70
		2018	176,463	21	8,403	0.28	23.85
	Vandalism & Malicious Mischief	2014	2,473	0	0	0.00	0.36
		2015	42,841	4	10,710	0.06	6.10
		2016	0	0	0	0.00	0.00
		2017	0	0	0	0.00	0.00
		2018	20,989	2	10,495	0.03	2.84
	Total	2014	441,163	86	5,130	0.32	16.20
		2015	391,156	66	5,927	0.23	13.92
		2016	571,136	93	6,141	0.32	19.92
		2017	740,243	79	9,370	0.27	25.37
		2018	1,131,382	166	6,816	0.56	38.22

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSSES BY CAUSE
EXTENDED COVERAGE

Territory	Cause of Loss	Year	Incurred Losses	Incurred Claims	Average Loss	Frequency per-100	Pure Premium
290	Wind and Hail	2014	304,024	59	5,153	0.71	36.50
		2015	239,611	44	5,446	0.49	26.93
		2016	1,206,110	174	6,932	1.88	130.49
		2017	302,345	43	7,031	0.46	32.65
		2018	2,061,053	301	6,847	3.24	222.12
	Water Damage and Freezing	2014	452,204	49	9,229	0.59	54.29
		2015	424,868	54	7,868	0.61	47.75
		2016	230,378	29	7,944	0.31	24.92
		2017	285,359	30	9,512	0.32	30.81
		2018	768,888	66	11,650	0.71	82.86
	All Other Physical Damage	2014	216,961	23	9,433	0.28	26.05
		2015	85,054	14	6,075	0.16	9.56
		2016	98,498	19	5,184	0.21	10.66
		2017	61,145	15	4,076	0.16	6.60
		2018	154,692	22	7,031	0.24	16.67
	Vandalism & Malicious Mischief	2014	8,421	1	8,421	0.01	1.01
		2015	38,972	8	4,872	0.09	4.38
		2016	26,281	4	6,570	0.04	2.84
		2017	36,192	4	9,048	0.04	3.91
		2018	27,074	6	4,512	0.06	2.92
	Total	2014	981,610	132	7,436	0.40	29.46
		2015	788,505	120	6,571	0.34	22.16
		2016	1,561,267	226	6,908	0.61	42.23
		2017	685,041	92	7,446	0.25	18.49
		2018	3,011,707	395	7,625	1.06	81.14
300	Wind and Hail	2014	185,908	58	3,205	0.56	18.09
		2015	320,588	84	3,817	0.79	30.21
		2016	727,116	162	4,488	1.51	67.81
		2017	348,083	86	4,047	0.81	32.87
		2018	3,355,843	547	6,135	5.18	318.00
	Water Damage and Freezing	2014	9,159	4	2,290	0.04	0.89
		2015	102,931	29	3,549	0.27	9.70
		2016	66,391	14	4,742	0.13	6.19
		2017	73,985	15	4,932	0.14	6.99
		2018	63,597	16	3,975	0.15	6.03
	All Other Physical Damage	2014	27,456	13	2,112	0.13	2.67
		2015	64,914	22	2,951	0.21	6.12
		2016	103,879	31	3,351	0.29	9.69
		2017	32,167	10	3,217	0.09	3.04
		2018	148,685	33	4,506	0.31	14.09
	Vandalism & Malicious Mischief	2014	1,416	2	708	0.02	0.14
		2015	1,080	1	1,080	0.01	0.10
		2016	25,439	4	6,360	0.04	2.37
		2017	308	2	154	0.02	0.03
		2018	4,341	2	2,171	0.02	0.41
	Total	2014	223,939	77	2,908	0.19	5.45
		2015	489,513	136	3,599	0.32	11.53
		2016	922,825	211	4,374	0.49	21.52
		2017	454,543	113	4,023	0.27	10.73
		2018	3,572,466	598	5,974	1.42	84.63

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSSES BY CAUSE
EXTENDED COVERAGE

Territory	Cause of Loss	Year	Incurred Losses	Incurred Claims	Average Loss	Frequency per-100	Pure Premium
310	Wind and Hail	2014	1,655,196	425	3,895	0.79	30.73
		2015	1,613,482	367	4,396	0.65	28.57
		2016	3,331,331	698	4,773	1.22	58.09
		2017	2,718,605	515	5,279	0.91	47.88
		2018	11,046,764	1,321	8,362	2.36	197.44
	Water Damage and Freezing	2014	1,412,119	198	7,132	0.37	26.21
		2015	1,296,912	162	8,006	0.29	22.96
		2016	897,066	124	7,234	0.22	15.64
		2017	1,350,615	149	9,065	0.26	23.79
		2018	1,309,945	197	6,649	0.35	23.41
	All Other Physical Damage	2014	1,180,474	262	4,506	0.49	21.91
		2015	859,888	160	5,374	0.28	15.22
		2016	785,422	176	4,463	0.31	13.70
		2017	867,327	172	5,043	0.30	15.28
		2018	1,637,219	260	6,297	0.46	29.26
	Vandalism & Malicious Mischief	2014	75,981	21	3,618	0.04	1.41
		2015	115,872	25	4,635	0.04	2.05
		2016	22,398	13	1,723	0.02	0.39
		2017	92,063	18	5,115	0.03	1.62
		2018	52,870	13	4,067	0.02	0.94
	Total	2014	4,323,770	906	4,772	0.42	20.07
		2015	3,886,154	714	5,443	0.32	17.20
		2016	5,036,217	1,011	4,981	0.44	21.96
		2017	5,028,610	854	5,888	0.38	22.14
		2018	14,046,798	1,791	7,843	0.80	62.77
320	Wind and Hail	2014	1,041,986	200	5,210	0.79	40.91
		2015	943,605	229	4,121	0.86	35.60
		2016	1,469,469	284	5,174	1.05	54.27
		2017	1,546,878	286	5,409	1.06	57.58
		2018	3,386,648	474	7,145	1.79	128.07
	Water Damage and Freezing	2014	377,440	73	5,170	0.29	14.82
		2015	470,422	61	7,712	0.23	17.75
		2016	363,956	51	7,136	0.19	13.44
		2017	354,699	58	6,116	0.22	13.20
		2018	633,430	76	8,335	0.29	23.95
	All Other Physical Damage	2014	611,445	150	4,076	0.59	24.00
		2015	719,196	109	6,598	0.41	27.14
		2016	352,473	88	4,005	0.32	13.02
		2017	599,050	90	6,656	0.33	22.30
		2018	733,775	119	6,166	0.45	27.75
	Vandalism & Malicious Mischief	2014	8,548	2	4,274	0.01	0.34
		2015	25,536	8	3,192	0.03	0.96
		2016	243,623	7	34,803	0.03	9.00
		2017	27,749	8	3,469	0.03	1.03
		2018	61,592	10	6,159	0.04	2.33
	Total	2014	2,039,419	425	4,799	0.42	20.02
		2015	2,158,759	407	5,304	0.38	20.36
		2016	2,429,521	430	5,650	0.40	22.43
		2017	2,528,376	442	5,720	0.41	23.53
		2018	4,815,445	679	7,092	0.64	45.53

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSSES BY CAUSE
EXTENDED COVERAGE

Territory	Cause of Loss	Year	Incurred Losses	Incurred Claims	Average Loss	Frequency per-100	Pure Premium
330	Wind and Hail	2014	91,071	28	3,253	1.12	36.36
		2015	54,043	15	3,603	0.59	21.37
		2016	134,022	49	2,735	1.94	52.93
		2017	118,903	26	4,573	1.05	47.89
		2018	154,596	26	5,946	1.07	63.54
	Water Damage and Freezing	2014	8,721	3	2,907	0.12	3.48
		2015	8,265	1	8,265	0.04	3.27
		2016	527	1	527	0.04	0.21
		2017	137,284	2	68,642	0.08	55.29
		2018	21,613	4	5,403	0.16	8.88
	All Other Physical Damage	2014	14,756	3	4,919	0.12	5.89
		2015	21,680	8	2,710	0.32	8.57
		2016	46,666	6	7,778	0.24	18.43
		2017	52,113	7	7,445	0.28	20.99
		2018	22,240	6	3,707	0.25	9.14
	Vandalism & Malicious Mischief	2014	0	0	0	0.00	0.00
		2015	0	0	0	0.00	0.00
		2016	0	0	0	0.00	0.00
		2017	0	0	0	0.00	0.00
		2018	0	0	0	0.00	0.00
	Total	2014	114,548	34	3,369	0.34	11.43
		2015	83,988	24	3,500	0.24	8.30
		2016	181,215	56	3,236	0.55	17.89
		2017	308,300	35	8,809	0.35	31.04
		2018	198,449	36	5,512	0.37	20.39
340	Wind and Hail	2014	2,817,591	516	5,460	1.07	58.38
		2015	3,062,580	515	5,947	1.01	60.35
		2016	3,980,796	690	5,769	1.36	78.29
		2017	4,440,504	723	6,142	1.45	88.97
		2018	6,968,972	847	8,228	1.74	142.86
	Water Damage and Freezing	2014	1,464,842	199	7,361	0.41	30.35
		2015	1,784,093	219	8,147	0.43	35.16
		2016	1,536,029	187	8,214	0.37	30.21
		2017	1,607,014	175	9,183	0.35	32.20
		2018	2,240,479	205	10,929	0.42	45.93
	All Other Physical Damage	2014	1,942,256	290	6,697	0.60	40.24
		2015	1,838,548	267	6,886	0.53	36.23
		2016	2,396,154	320	7,488	0.63	47.12
		2017	1,662,979	246	6,760	0.49	33.32
		2018	2,237,090	255	8,773	0.52	45.86
	Vandalism & Malicious Mischief	2014	235,186	49	4,800	0.10	4.87
		2015	243,174	39	6,235	0.08	4.79
		2016	114,730	28	4,098	0.06	2.26
		2017	153,822	29	5,304	0.06	3.08
		2018	122,897	25	4,916	0.05	2.52
	Total	2014	6,459,875	1,054	6,129	0.55	33.46
		2015	6,928,395	1,040	6,662	0.51	34.13
		2016	8,027,709	1,225	6,553	0.60	39.47
		2017	7,864,319	1,173	6,704	0.59	39.39
		2018	11,569,438	1,332	8,686	0.68	59.29

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LOSSES BY CAUSE
EXTENDED COVERAGE

Territory	Cause of Loss	Year	Incurred Losses	Incurred Claims	Average Loss	Frequency per-100	Pure Premium
350	Wind and Hail	2014	561,273	121	4,639	0.51	23.49
		2015	648,359	154	4,210	0.62	26.10
		2016	881,799	202	4,365	0.80	35.04
		2017	1,607,725	246	6,535	1.00	65.39
		2018	2,480,938	336	7,384	1.41	103.84
	Water Damage and Freezing	2014	337,024	46	7,327	0.19	14.11
		2015	576,535	57	10,115	0.23	23.21
		2016	327,476	41	7,987	0.16	13.01
		2017	325,011	43	7,558	0.17	13.22
		2018	349,121	45	7,758	0.19	14.61
	All Other Physical Damage	2014	315,560	59	5,348	0.25	13.21
		2015	237,727	54	4,402	0.22	9.57
		2016	275,576	60	4,593	0.24	10.95
		2017	455,807	80	5,698	0.33	18.54
		2018	684,704	98	6,987	0.41	28.66
	Vandalism & Malicious Mischief	2014	59,953	13	4,612	0.05	2.51
		2015	66,145	9	7,349	0.04	2.66
		2016	61,418	8	7,677	0.03	2.44
		2017	63,695	12	5,308	0.05	2.59
		2018	3,862	2	1,931	0.01	0.16
	Total	2014	1,273,810	239	5,330	0.25	13.33
		2015	1,528,766	274	5,579	0.28	15.39
		2016	1,546,269	311	4,972	0.31	15.36
		2017	2,452,238	381	6,436	0.39	24.94
		2018	3,518,625	481	7,315	0.50	36.82
360	Wind and Hail	2014	1,167,752	271	4,309	0.58	24.91
		2015	992,676	233	4,260	0.48	20.66
		2016	1,465,938	328	4,469	0.68	30.35
		2017	3,171,106	544	5,829	1.15	67.31
		2018	2,767,586	356	7,774	0.78	60.48
	Water Damage and Freezing	2014	829,843	100	8,298	0.21	17.70
		2015	689,909	97	7,112	0.20	14.36
		2016	523,195	83	6,304	0.17	10.83
		2017	1,031,535	95	10,858	0.20	21.89
		2018	1,028,459	136	7,562	0.30	22.47
	All Other Physical Damage	2014	874,560	129	6,780	0.28	18.66
		2015	797,585	117	6,817	0.24	16.60
		2016	660,063	112	5,893	0.23	13.66
		2017	767,943	97	7,917	0.21	16.30
		2018	920,716	150	6,138	0.33	20.12
	Vandalism & Malicious Mischief	2014	57,826	10	5,783	0.02	1.23
		2015	54,664	6	9,111	0.01	1.14
		2016	19,754	4	4,939	0.01	0.41
		2017	42,447	9	4,716	0.02	0.90
		2018	54,648	7	7,807	0.02	1.19
	Total	2014	2,929,981	510	5,745	0.27	15.63
		2015	2,534,834	453	5,596	0.24	13.19
		2016	2,668,950	527	5,064	0.27	13.81
		2017	5,013,031	745	6,729	0.40	26.60
		2018	4,771,409	649	7,352	0.35	26.07

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSSES BY CAUSE
EXTENDED COVERAGE

Territory	Cause of Loss	Year	Incurred Losses	Incurred Claims	Average Loss	Frequency per-100	Pure Premium
370	Wind and Hail	2014	55,293	14	3,950	0.45	17.59
		2015	27,796	4	6,949	0.12	8.65
		2016	55,413	15	3,694	0.46	17.11
		2017	32,691	12	2,724	0.38	10.46
		2018	107,233	23	4,662	0.77	35.84
	Water Damage and Freezing	2014	42,654	5	8,531	0.16	13.57
		2015	145,505	10	14,551	0.31	45.27
		2016	9,818	6	1,636	0.19	3.03
		2017	47,777	7	6,825	0.22	15.28
		2018	130,083	13	10,006	0.43	43.48
	All Other Physical Damage	2014	38,179	5	7,636	0.16	12.15
		2015	30,945	5	6,189	0.16	9.63
		2016	36,905	4	9,226	0.12	11.40
		2017	41,000	2	20,500	0.06	13.12
		2018	48,699	9	5,411	0.30	16.28
	Vandalism & Malicious Mischief	2014	0	0	0	0.00	0.00
		2015	205	0	0	0.00	0.06
		2016	95	0	0	0.00	0.03
		2017	2,196	1	2,196	0.03	0.70
		2018	379	1	379	0.03	0.13
	Total	2014	136,126	24	5,672	0.19	10.83
		2015	204,451	19	10,761	0.15	15.90
		2016	102,231	25	4,089	0.19	7.89
		2017	123,664	22	5,621	0.18	9.89
		2018	286,394	46	6,226	0.38	23.93
380	Wind and Hail	2014	87,860	25	3,514	0.31	10.94
		2015	193,601	31	6,245	0.37	23.24
		2016	207,162	27	7,673	0.32	24.83
		2017	336,695	43	7,830	0.52	40.81
		2018	297,204	38	7,821	0.47	36.44
	Water Damage and Freezing	2014	275,315	27	10,197	0.34	34.29
		2015	179,509	27	6,648	0.32	21.55
		2016	195,197	19	10,274	0.23	23.39
		2017	165,174	16	10,323	0.19	20.02
		2018	283,215	24	11,801	0.29	34.73
	All Other Physical Damage	2014	118,949	15	7,930	0.19	14.81
		2015	102,201	10	10,220	0.12	12.27
		2016	91,637	14	6,546	0.17	10.98
		2017	87,996	16	5,500	0.19	10.67
		2018	197,307	26	7,589	0.32	24.19
	Vandalism & Malicious Mischief	2014	438	0	0	0.00	0.05
		2015	1,792	1	1,792	0.01	0.22
		2016	562	0	0	0.00	0.07
		2017	0	0	0	0.00	0.00
		2018	1,763	1	1,763	0.01	0.22
	Total	2014	482,562	67	7,202	0.21	15.03
		2015	477,103	69	6,915	0.21	14.32
		2016	494,558	60	8,243	0.18	14.82
		2017	589,865	75	7,865	0.23	17.87
		2018	779,489	89	8,758	0.27	23.90

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

LOSSES BY CAUSE
EXTENDED COVERAGE

Territory	Cause of Loss	Year	Incurred Losses	Incurred Claims	Average Loss	Frequency per-100	Pure Premium
390	Wind and Hail	2014	62,233	15	4,149	0.19	7.83
		2015	198,978	22	9,044	0.27	24.08
		2016	194,678	31	6,280	0.37	23.28
		2017	250,775	48	5,224	0.59	30.84
		2018	254,447	34	7,484	0.42	31.71
	Water Damage and Freezing	2014	158,874	21	7,565	0.26	20.00
		2015	174,254	23	7,576	0.28	21.09
		2016	73,024	7	10,432	0.08	8.73
		2017	196,253	17	11,544	0.21	24.14
		2018	77,577	7	11,082	0.09	9.67
	All Other Physical Damage	2014	64,093	13	4,930	0.16	8.07
		2015	184,532	24	7,689	0.29	22.33
		2016	80,522	19	4,238	0.23	9.63
		2017	193,330	19	10,175	0.23	23.78
		2018	279,973	21	13,332	0.26	34.89
	Vandalism & Malicious Mischief	2014	15,121	3	5,040	0.04	1.90
		2015	13,503	2	6,752	0.02	1.63
		2016	43,346	4	10,837	0.05	5.18
		2017	0	0	0	0.00	0.00
		2018	53,326	2	26,663	0.02	6.64
	Total	2014	300,321	52	5,775	0.16	9.45
		2015	571,267	71	8,046	0.21	17.28
		2016	391,570	61	6,419	0.18	11.71
		2017	640,358	84	7,623	0.26	19.69
		2018	665,323	64	10,396	0.20	20.73
Statewide	Wind and Hail	2014	20,534,761	4,411	4,655	0.74	34.53
		2015	19,362,674	4,119	4,701	0.66	31.15
		2016	86,875,593	18,332	4,739	2.90	137.39
		2017	27,772,674	4,847	5,730	0.77	43.92
		2018	533,456,292	48,987	10,890	7.79	847.87
	Water Damage and Freezing	2014	15,876,110	2,067	7,681	0.35	26.70
		2015	18,995,874	2,455	7,738	0.39	30.56
		2016	14,713,407	2,005	7,338	0.32	23.27
		2017	17,724,284	1,971	8,993	0.31	28.03
		2018	26,972,411	2,718	9,924	0.43	42.87
	All Other Physical Damage	2014	9,537,857	1,741	5,478	0.29	16.04
		2015	8,011,488	1,386	5,780	0.22	12.89
		2016	8,794,131	1,656	5,310	0.26	13.91
		2017	8,799,445	1,363	6,456	0.22	13.92
		2018	13,955,113	1,983	7,037	0.32	22.18
	Vandalism & Malicious Mischief	2014	1,259,512	261	4,826	0.04	2.12
		2015	1,577,514	298	5,294	0.05	2.54
		2016	1,021,038	183	5,579	0.03	1.61
		2017	807,083	169	4,776	0.03	1.28
		2018	1,154,800	194	5,953	0.03	1.84
	Total	2014	47,208,240	8,480	5,567	0.36	19.85
		2015	47,947,550	8,258	5,806	0.33	19.28
		2016	111,404,169	22,176	5,024	0.88	44.04
		2017	55,103,486	8,350	6,599	0.33	21.79
		2018	575,538,616	53,882	10,681	2.14	228.69

2. CREDIBILITY FACTOR DEVELOPMENT AND APPLICATION

The volume of North Carolina data is sufficiently large that it is fully credible in both the statewide and class rate level reviews.

To distribute the statewide change by territory, a credibility procedure was used on the five-year (non-hurricane for Extended Coverage) loss costs. The credibility standard used was based on the 'frequency with severity modification' model discussed in "Credibility of the Pure Premium" by Mayerson, Bowers and Jones. The full credibility standard is based on a normal distribution with a 90% probability of meeting the test and a 10% maximum departure from the expected value, translated to house years. The full credibility standards are 500,000 house years for Fire and 330,000 house years for Extended Coverage. Partial credibility (Z_p) is calculated using the square root rule:

$$Z_p = \sqrt{\frac{Five\ Year\ House\ Years}{Full\ Credibility\ Standard}}$$ (truncated to one decimal place)

The Rate Bureau has used the same credibility procedure in all dwelling insurance rate filings made in the last three years.

See Section D and prefiled testimony of P. Anderson, M. Berry and P. Ericksen.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

3. LOSS DEVELOPMENT FACTOR DERIVATION AND APPLICATION ON BOTH PAID AND INCURRED BASES AND IN BOTH NUMBERS AND DOLLARS OF CLAIMS

See Section D and prefiled testimony of M. Berry and P. Ericksen.

Paragraphs (3)(a) through (3)(g) are not applicable to dwelling insurance.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

4. TRENDING FACTOR DEVELOPMENT AND APPLICATION

(a) In this filing, historical and prospective annual loss trends were selected to trend the losses to one year beyond the assumed effective date. In previous filings, this was accomplished using Current Cost Factors and Loss Projection Factors based on external indices and Loss Trend Adjustment Factors reflecting the differences between the historical experience and the external indices. See Section D and pre-filed testimony of P. Anderson, M. Berry and P. Ericksen.

(b) See prefiled testimony of P. Anderson, M. Berry and P. Ericksen.

(c) Not applicable for dwelling insurance.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

5. CHANGES IN PREMIUM BASE RESULTING FROM RATING EXPOSURE TRENDS

(a) See Section D and prefiled testimony of P. Anderson, M. Berry and P. Ericksen. The Rate Bureau made a dwelling insurance rate level filing in 2019 that used the same exposure trend procedure.

(b) Not applicable to dwelling insurance.

6. LIMITING FACTOR DEVELOPMENT AND APPLICATION

(a) There were no limitations.

(b) There were no limitations.

(c) See pages C-13-15.

(d) There were no limitations.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

7. OVERHEAD EXPENSE DEVELOPMENT AND APPLICATION OF COMMISSION AND BROKERAGE, OTHER ACQUISITION EXPENSES, GENERAL EXPENSES, TAXES, LICENSES, AND FEES

(a) Exhibit (7)(a) provides all information relating to expense provisions contained in the filing. The Rate Bureau made a dwelling insurance rate level filing in 2019 that used the same procedure for overhead expense development and application of commission and brokerage, other acquisition expense, general expenses, taxes, licenses and fees.

(b) Not applicable to dwelling insurance.

(c) Not applicable to dwelling insurance.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

The following provides a description of the derivation of dwelling insurance expense provisions. The underlying expense data are provided by the North Carolina Rate Bureau and are displayed on pages D-22-27.

The filed expense provision methodology makes a distinction between those provisions that require trending and those that do not. For example, since commission and brokerage, and taxes, licenses and fees vary directly with premium, no additional trend is required. In contrast, general expense, other acquisition expense, and loss adjustment expense do not vary directly with premium and are subject to trend.

The provisions for commission and brokerage expenses, 11.3% of written premium for Fire and 9.1% of written premium for Extended Coverage, and the provisions for taxes, licenses, and fees, 2.7% of written premium for Fire and 2.6% of written premium for Extended Coverage, are based on the data shown on pages D-22 and D-25 for the latest three years.

Since general expenses and other acquisition expenses are relative to earned premiums and loss adjustment expenses are relative to losses, separate trend factors are required for premiums, losses, and expenses.

General Expense and Other Acquisition Expense - Based on the 2017-2019 experience on pages D-22 and D-25, general expenses average 5.5% of earned premium for Fire and 4.1% of earned premium for Extended Coverage, and other acquisition expenses average 9.0% of earned premium for Fire and 7.2% of earned premium for Extended Coverage. Since these expenses are incurred throughout the twelve-month effective period, both the numerator and denominator of these factors are trended to 3/1/2022 (six months beyond the 9/1/2021 trend effective date).

The average date of payment of the 2017-2019 expenses used to calculate the provisions is 7/1/2018. Similarly, the average date of earning of the 2017-2019 premiums is 7/1/2018. Assuming policies are written with an effective period of one year, the average date of writing is therefore six months earlier, or 1/1/2018. The average date of writing of policies under the proposed rates, and the average date of payment of the expenses on these policies, is six months after the assumed effective date of 9/1/2021, or 3/1/2022. Therefore, the expenses in the numerator are projected 44 months (from 7/1/2018 to 3/1/2022) and the premiums in the denominator are projected 50 months (from 1/1/2018 to 3/1/2022).

The trend factor for expenses in the numerator is based on the rates of change inherent in the Consumer Price Index - All Items, the Consumer Price Index - All Items less Energy and the Compensation Cost Index, displayed on pages D-20-21. Based on a weighted average of the rates of change in these indices, an average annual change of 2.2% was selected. This average annual change is projected 44 months (from 7/1/2018 to 3/1/2022).

To trend the premiums in the denominator, the 2018 Premium Trend Factor is applied. The Premium Trend Factors are shown on page D-18.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

Loss Adjustment Expense

Fire: Based on the 2015-2019 experience shown on page D-24, loss adjustment expenses (both allocated and unallocated) average 8.7% of incurred losses, after excluding the highest- and lowest-valued years. The average date of loss in these data is 7/1/2017. Both the numerator and denominator are trended 62 months, from 7/1/2017 to 9/1/2022 (12 months beyond the trend effective date of 9/1/2021).

Extended Coverage: Based on the 2015-2019 experience shown on page D-27, loss adjustment expenses (both allocated and unallocated) average 11.5% of incurred losses, after excluding the highest- and lowest-valued years. The average date of loss in these data is 7/1/2017. Both the numerator and denominator are trended 62 months, from 7/1/2017 to 9/1/2022 (12 months beyond the trend effective date of 9/1/2021).

Please note that a separate loss adjustment expense factor is used for modeled hurricane losses. (See prefiled testimony of P. Anderson and S. Fiete.)

The trend factor used for expenses in the numerator is determined in a similar way as for general and other acquisition expenses. The 2.2% selected average annual change is projected 62 months for Fire and Extended Coverage (from 7/1/2017 to 9/1/2022).

To trend the losses in the denominator, the 2017 Loss Trend Factor is applied. The Loss Trend Factors are shown on page D-16.

No alternate expense trend methodology has been considered within the last three years.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

8. PERCENT RATE CHANGE

The overall statewide rate change by coverage is shown on page A-2. The statewide rate changes are applied uniformly by coverage amount, protection class, construction and deductible.

The proposed rate changes are dependent on the actual implementation date of the new rates, because any such change will affect all of the trending periods used in the filing. Any change in the trending periods will affect all of the losses, fixed expenses, and premiums used in the calculation of the rate level indication.

If the effective date were to be changed, advance notice of one hundred twenty (120) days is required for an orderly implementation of the change in rates. This is the amount of time required to calculate the new rates based on the new effective date and distribute the necessary information to member companies.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

9. FINAL PROPOSED RATES

The proposed rates are shown in Section B.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

10. INVESTMENT EARNINGS, CONSISTING OF INVESTMENT INCOME AND REALIZED PLUS UNREALIZED CAPITAL GAINS, FROM LOSS, LOSS EXPENSE AND UNEARNED PREMIUM RESERVES

(a) See attached Exhibit (10)(a) and the prefiled testimony of P. Anderson, P. Ericksen and G. Zanjani.

(b) Not applicable to dwelling insurance.

(c) Not applicable to dwelling insurance.

NORTH CAROLINA

DWELLING FIRE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

A.	Unearned Premium Reserve		
	1.	Direct Earned Premium for Accident Year Ended 12/31/19	$41,313,406
	2.	Mean Unearned Premium Reserve, (1) x 0.4813	$19,884,142
	3.	Deduction for Prepaid Expenses	
		Commission and Brokerage	12.22%
		Taxes, Licenses and Fees	2.37%
		1/2 General Expenses	2.20%
		1/2 Other Acquisition	3.56%
		Total	20.35%
	4.	(2) x (3)	$4,046,423
	5.	Net Subject to Investment, (2) - (4)	$15,837,719
B.	Delayed Remission of Premium (Agents' Balances)		
	1.	Direct Earned Premium (A-1)	$41,313,406
	2.	Average Agents' Balances	0.203
	3.	Delayed Remission, (1) x (2)	$8,386,621
C.	Loss Reserve		
	1.	Direct Earned Premium (A-1)	$41,313,406
	2.	Expected Incurred Losses and Loss Adjustment Expense, (1) x 0.5997	$24,775,650
	3.	Expected Mean Loss Reserves, (2) x 0.964	$23,883,727
D.	Net Subject to Investment, (A-5) - (B-3) + (C-3)		$31,334,825
E.	Average Rate of Return		3.14%
F.	Investment Earnings on Net Subject to Investment, (D) x (E)		$983,914
G.	Average Rate of Return as a Percent of Direct Earned Premium, (F) / (A-1)		2.38%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes, (G) x (1 - 0.159)		2.00%

NORTH CAROLINA

DWELLING EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

A.	Unearned Premium Reserve	
1.	Direct Earned Premium for Accident Year Ended 12/31/19	$66,516,234
2.	Mean Unearned Premium Reserve, (1) x 0.4814	$32,020,915
3.	Deduction for Prepaid Expenses	
	Commission and Brokerage	9.29%
	Taxes, Licenses and Fees	2.15%
	1/2 General Expenses	2.82%
	1/2 Other Acquisition	4.99%
	Total	19.25%
4.	(2) x (3)	$6,164,026
5.	Net Subject to Investment, (2) - (4)	$25,856,889
B.	Delayed Remission of Premium (Agents' Balances)	
1.	Direct Earned Premium (A-1)	$66,516,234
2.	Average Agents' Balances	0.177
3.	Delayed Remission, (1) x (2)	$11,773,373
C.	Loss Reserve	
1.	Direct Earned Premium (A-1)	$66,516,234
2.	Expected Incurred Losses and Loss Adjustment Expense, (1) x 0.2361	$15,704,483
3.	Expected Mean Loss Reserves, (2) x 4.566	$71,706,669
D.	Net Subject to Investment, (A-5) - (B-3) + (C-3)	$85,790,185
E.	Average Rate of Return	3.14%
F.	Investment Earnings on Net Subject to Investment, (D) x (E)	$2,693,812
G.	Average Rate of Return as a Percent of Direct Earned Premium, (F) / (A-1)	4.05%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes, (G) x (1 - 0.159)	3.41%

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line A-1

Direct earned premiums are the earned premiums for dwelling insurance in North Carolina from Statutory Page 14 of the Annual Statement.

Line A-2

The mean unearned premium reserve is determined by multiplying the direct earned premiums in line (1) by the ratio of the mean unearned premium reserve to the collected earned premium for calendar year ended 12/31/19 for all companies writing dwelling insurance in North Carolina. These data are from Statutory Page 14 of the Annual Statement.

	Fire	EC
1. Collected Earned Premium for Calendar Year ended 12/31/19	$230,415,747	$287,004,527
2. Unearned Premium Reserve as of 12/31/18	$109,932,656	$127,836,607
3. Unearned Premium Reserve as of 12/31/19	$111,854,920	$148,478,317
4. Mean Unearned Premium Reserve, 1/2 [(2) + (3)]	$110,893,788	$138,157,462
5. Ratio, (4) ÷ (1)	0.4813	0.4814

Line A-3

Deduction for prepaid expenses:

Production costs and a large part of the other company expenses in connection with the writing and handling of dwelling policies, exclusive of claim adjustment expenses, are incurred when the policy is written and before the premium is paid. The deduction for these expenses is determined from data provided by the NCRB for the year ended 12/31/19.

Line B-2

Delayed remission of premium:

This deduction is necessary because of delay in remission and collection of premium to the companies, which amounts to approximately 50-75 days after the effective dates of the policies. Therefore, funds for the unearned premium reserve required during the initial days of all policies must be taken from the company's surplus.

1. Agents' balances for premiums due less than 90 days as a ratio to net written premium (based on data for all companies writing dwelling insurance in North Carolina)	0.1989	0.1732
2. Factor to include effect of agents' balances or uncollected premiums overdue for more than 90 days (based on data provided by A. M. Best)	1.021	1.021
3. Factor for agents' balances, (1) x (2)	0.203	0.177

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line C-2

The expected loss and loss adjustment expense ratio reflects the expense provisions for the year ended 12/31/19.

Line C-3

The mean loss reserve is determined by multiplying the incurred losses in line (2) by the North Carolina ratio of the mean loss reserves to the incurred losses in 2019 for dwelling insurance. This ratio is based on North Carolina companies' Statutory Page 14 annual statement data and has been adjusted to include loss adjustment expense reserves.

	Fire	EC
1. Incurred Losses for Calendar Year 2019	$67,537,148	$64,562,160
2. Loss Reserves as of 12/31/18	$71,679,352	$417,341,717
3. Loss Reserves as of 12/31/19	$51,559,349	$140,237,570
4. Mean Loss Reserve 2019, 1/2 [(2) + (3)]	$61,619,351	$278,789,644
5. Ratio, (4) ÷ (1)	0.912	4.318
6. Ratio of LAE Reserves to Loss Reserves (a)	0.213	0.213
7. Ratio of Incurred LAE to Incurred Losses (a)	0.147	0.147
8. Loss and LAE Reserve, [(5)x(1.0+(6))/(1.0+(7))]	0.964	4.566

(a) Based on 2019 All-Industry Insurance Expense Exhibit (source: A.M. Best)

Line E

The rate of return is the ratio of net investment income earned to mean cash and invested assets. Net investment income is computed for all companies writing dwelling insurance in North Carolina as follows:

Year	Net Investment Income Earned	Mean Cash and Invested Assets	Rate of Return
2019	$57,192,367	$1,824,300,163	3.14%

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line H

The average rate of Federal income tax was determined by applying the average tax rate for net investment income and the current tax rate applicable to realized capital gains (or losses) to the rates of return as calculated above.

	Rate of Return	Federal Income Tax Rate
Net Investment Income Earned	3.14%	0.159

The average rate of Federal income tax was determined by applying current tax rates to the distribution of investment income earned for all companies. These data are for 2019 from Best's Aggregates and Averages, Underwriting and Investment Exhibit, Part 1, Column 8.

Bonds	Taxable	$29,408,005	0.210
	Non-Taxable	$7,801,310	-
	Sub-Total	$37,209,315	0.166
Stocks	Taxable (a)	$8,917,061	0.105
	Non-Taxable	$1,595,409	-
	Sub-Total	$10,512,470	0.089
Mortgage Loans		$996,462	
Real Estate		$2,035,516	
Collateral Loans		$202	
Cash on Deposit		$2,500,836	
Short Term Investments		($92,602)	
All Other		$9,880,009	
Sub-Total		$15,320,423	0.210
Total		$63,042,208	0.164
Investment Deductions		$5,849,844	0.210
Net Investment Income Earned		$57,192,364	0.159

(a) Only 50% of dividend income on stock is subject to the full corporate income tax rate of 21%. The applicable tax rate is thus 10.5% (.21 x .5 = 10.5%)

NORTH CAROLINA

DWELLING FIRE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

A.	Unearned Premium Reserve		
	1.	Direct Earned Premium for Accident Year Ended 12/31/18	$48,399,271
	2.	Mean Unearned Premium Reserve, (1) x 0.4996	$24,180,276
	3.	Deduction for Prepaid Expenses	
		Commission and Brokerage	10.80%
		Taxes, Licenses and Fees	2.23%
		1/2 General Expenses	2.11%
		1/2 Other Acquisition	3.73%
		Total	18.87%
	4.	(2) x (3)	$4,562,818
	5.	Net Subject to Investment, (2) - (4)	$19,617,458
B.	Delayed Remission of Premium (Agents' Balances)		
	1.	Direct Earned Premium (A-1)	$48,399,271
	2.	Average Agents' Balances	0.206
	3.	Delayed Remission, (1) x (2)	$9,970,250
C.	Loss Reserve		
	1.	Direct Earned Premium (A-1)	$48,399,271
	2.	Expected Incurred Losses and Loss Adjustment Expense, (1) x 0.5517	$26,701,878
	3.	Expected Mean Loss Reserves, (2) x 0.494	$13,190,728
D.	Net Subject to Investment, (A-5) - (B-3) + (C-3)		$22,837,936
E.	Average Rate of Return		3.33%
F.	Investment Earnings on Net Subject to Investment, (D) x (E)		$760,503
G.	Average Rate of Return as a Percent of Direct Earned Premium, (F) / (A-1)		1.57%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes, (G) x (1 - 0.149)		1.34%

NORTH CAROLINA

DWELLING EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

A.	Unearned Premium Reserve	
1.	Direct Earned Premium for Accident Year Ended 12/31/18	$60,468,266
2.	Mean Unearned Premium Reserve, (1) x 0.4755	$28,752,660
3.	Deduction for Prepaid Expenses	
	Commission and Brokerage	8.94%
	Taxes, Licenses and Fees	1.99%
	1/2 General Expenses	2.34%
	1/2 Other Acquisition	4.23%
	Total	17.50%
4.	(2) x (3)	$5,031,716
5.	Net Subject to Investment, (2) - (4)	$23,720,944
B.	Delayed Remission of Premium (Agents' Balances)	
1.	Direct Earned Premium (A-1)	$60,468,266
2.	Average Agents' Balances	0.184
3.	Delayed Remission, (1) x (2)	$11,126,161
C.	Loss Reserve	
1.	Direct Earned Premium (A-1)	$60,468,266
2.	Expected Incurred Losses and Loss Adjustment Expense, (1) x 0.1406	$8,501,838
3.	Expected Mean Loss Reserves, (2) x 0.354	$3,009,651
D.	Net Subject to Investment, (A-5) - (B-3) + (C-3)	$15,604,434
E.	Average Rate of Return	3.33%
F.	Investment Earnings on Net Subject to Investment, (D) x (E)	$519,628
G.	Average Rate of Return as a Percent of Direct Earned Premium, (F) / (A-1)	0.86%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes, (G) x (1 - 0.149)	0.73%

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line A-1

Direct earned premiums are the earned premiums for dwelling insurance in North Carolina from Statutory Page 14 of the Annual Statement.

Line A-2

The mean unearned premium reserve is determined by multiplying the direct earned premiums in line (1) by the ratio of the mean unearned premium reserve to the collected earned premium for calendar year ended 12/31/18 for all companies writing dwelling insurance in North Carolina. These data are from Statutory Page 14 of the Annual Statement.

	Fire	EC
1. Collected Earned Premium for Calendar Year ended 12/31/18	$222,636,051	$261,481,286
2. Unearned Premium Reserve as of 12/31/17	$112,545,362	$120,812,171
3. Unearned Premium Reserve as of 12/31/18	$109,932,656	$127,836,607
4. Mean Unearned Premium Reserve, 1/2 [(2) + (3)]	$111,239,009	$124,324,389
5. Ratio, (4) ÷ (1)	0.4996	0.4755

Line A-3

Deduction for prepaid expenses:

Production costs and a large part of the other company expenses in connection with the writing and handling of dwelling policies, exclusive of claim adjustment expenses, are incurred when the policy is written and before the premium is paid. The deduction for these expenses is determined from data provided by the NCRB for the year ended 12/31/18.

Line B-2

Delayed remission of premium:

This deduction is necessary because of delay in remission and collection of premium to the companies, which amounts to approximately 50-75 days after the effective dates of the policies. Therefore, funds for the unearned premium reserve required during the initial days of all policies must be taken from the company's surplus.

1. Agents' balances for premiums due less than 90 days as a ratio to net written premium (based on data for all companies writing dwelling insurance in North Carolina)	0.2014	0.1805
2. Factor to include effect of agents' balances or uncollected premiums overdue for more than 90 days (based on data provided by A. M. Best)	1.021	1.021
3. Factor for agents' balances, (1) x (2)	0.206	0.184

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line C-2

The expected loss and loss adjustment expense ratio reflects the expense provisions for the year ended 12/31/18.

Line C-3

The mean loss reserve is determined by multiplying the incurred losses in line (2) by the North Carolina ratio of the mean loss reserves to the incurred losses in 2018 for dwelling insurance. This ratio is based on North Carolina companies' Statutory Page 14 annual statement data and has been adjusted to include loss adjustment expense reserves.

	Fire	EC
1. Incurred Losses for Calendar Year 2018	$147,266,683	$703,738,774
2. Loss Reserves as of 12/31/17	$66,350,617	$55,475,077
3. Loss Reserves as of 12/31/18	$71,679,352	$417,341,717
4. Mean Loss Reserve 2018, 1/2 [(2) + (3)]	$69,014,985	$236,408,397
5. Ratio, (4) ÷ (1)	0.469	0.336
6. Ratio of LAE Reserves to Loss Reserves (a)	0.187	0.187
7. Ratio of Incurred LAE to Incurred Losses (a)	0.127	0.127
8. Loss and LAE Reserve, [(5)x(1.0+(6))/(1.0+(7))]	0.494	0.354

(a) Based on 2018 All-Industry Insurance Expense Exhibit (source: A.M. Best)

Line E

The rate of return is the ratio of net investment income earned to mean cash and invested assets. Net investment income is computed for all companies writing dwelling insurance in North Carolina as follows:

Year	Net Investment Income Earned	Mean Cash and Invested Assets	Rate of Return
2018	$57,671,849	$1,734,094,329	3.33%

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line H

The average rate of Federal income tax was determined by applying the average tax rate for net investment income and the current tax rate applicable to realized capital gains (or losses) to the rates of return as calculated above.

	Rate of Return	Federal Income Tax Rate
Net Investment Income Earned	3.33%	0.149

The average rate of Federal income tax was determined by applying current tax rates to the distribution of investment income earned for all companies. These data are for 2018 from Best's Aggregates and Averages, Underwriting and Investment Exhibit, Part 1, Column 8.

Bonds	Taxable	$26,161,755	0.210
	Non-Taxable	$8,708,550	-
	Sub-Total	$34,870,305	0.158
Stocks	Taxable (a)	$7,974,536	0.105
	Non-Taxable	$4,005,063	-
	Sub-Total	$11,979,599	0.070
Mortgage Loans		$908,739	
Real Estate		$1,937,053	
Collateral Loans		$5,854	
Cash on Deposit		$1,985,735	
Short Term Investments		($116,536)	
All Other		$12,020,161	
Sub-Total		$16,741,006	0.210
Total		$63,590,910	0.155
Investment Deductions		$5,919,053	0.210
Net Investment Income Earned		$57,671,857	0.149

(a) Only 50% of dividend income on stock is subject to the full corporate income tax rate of 21%. The applicable tax rate is thus 10.5% (.21 x .5 = 10.5%)

NORTH CAROLINA

DWELLING FIRE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

A.	Unearned Premium Reserve		
	1.	Direct Earned Premium for Accident Year Ended 12/31/17	$47,992,199
	2.	Mean Unearned Premium Reserve, (1) x 0.5347	$25,661,429
	3.	Deduction for Prepaid Expenses	
		Commission and Brokerage	10.82%
		Taxes, Licenses and Fees	2.29%
		1/2 General Expenses	2.40%
		1/2 Other Acquisition	3.82%
		Total	19.33%
	4.	(2) x (3)	$4,960,354
	5.	Net Subject to Investment, (2) - (4)	$20,701,075
B.	Delayed Remission of Premium (Agents' Balances)		
	1.	Direct Earned Premium (A-1)	$47,992,199
	2.	Average Agents' Balances	0.209
	3.	Delayed Remission, (1) x (2)	$10,030,370
C.	Loss Reserve		
	1.	Direct Earned Premium (A-1)	$47,992,199
	2.	Expected Incurred Losses and Loss Adjustment Expense, (1) x 0.5437	$26,093,359
	3.	Expected Mean Loss Reserves, (2) x 0.522	$13,620,733
D.	Net Subject to Investment, (A-5) - (B-3) + (C-3)		$24,291,438
E.	Average Rate of Return		3.05%
F.	Investment Earnings on Net Subject to Investment, (D) x (E)		$740,889
G.	Average Rate of Return as a Percent of Direct Earned Premium, (F) / (A-1)		1.54%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes, (G) x (1 - 0.234)		1.18%

NORTH CAROLINA

DWELLING EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

A.	Unearned Premium Reserve		
	1.	Direct Earned Premium for Accident Year Ended 12/31/17	$62,065,299
	2.	Mean Unearned Premium Reserve, (1) x 0.4914	$30,498,888
	3.	Deduction for Prepaid Expenses	
		Commission and Brokerage	9.25%
		Taxes, Licenses and Fees	2.23%
		1/2 General Expenses	2.22%
		1/2 Other Acquisition	3.84%
		Total	17.54%
	4.	(2) x (3)	$5,349,505
	5.	Net Subject to Investment, (2) - (4)	$25,149,383
B.	Delayed Remission of Premium (Agents' Balances)		
	1.	Direct Earned Premium (A-1)	$62,065,299
	2.	Average Agents' Balances	0.189
	3.	Delayed Remission, (1) x (2)	$11,730,342
C.	Loss Reserve		
	1.	Direct Earned Premium (A-1)	$62,065,299
	2.	Expected Incurred Losses and Loss Adjustment Expense, (1) x 0.1441	$8,943,610
	3.	Expected Mean Loss Reserves, (2) x 0.886	$7,924,038
D.	Net Subject to Investment, (A-5) - (B-3) + (C-3)		$21,343,079
E.	Average Rate of Return		3.05%
F.	Investment Earnings on Net Subject to Investment, (D) x (E)		$650,964
G.	Average Rate of Return as a Percent of Direct Earned Premium, (F) / (A-1)		1.05%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes, (G) x (1 - 0.234)		0.80%

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line A-1

Direct earned premiums are the earned premiums for dwelling insurance in North Carolina from Statutory Page 14 of the Annual Statement.

Line A-2

The mean unearned premium reserve is determined by multiplying the direct earned premiums in line (1) by the ratio of the mean unearned premium reserve to the collected earned premium for calendar year ended 12/31/17 for all companies writing dwelling insurance in North Carolina. These data are from Statutory Page 14 of the Annual Statement.

	Fire	EC
1. Collected Earned Premium for Calendar Year ended 12/31/17	$213,782,422	$249,790,305
2. Unearned Premium Reserve as of 12/31/16	$116,086,201	$124,686,420
3. Unearned Premium Reserve as of 12/31/17	$112,545,362	$120,812,171
4. Mean Unearned Premium Reserve, 1/2 [(2) + (3)]	$114,315,782	$122,749,296
5. Ratio, (4) ÷ (1)	0.5347	0.4914

Line A-3

Deduction for prepaid expenses:

Production costs and a large part of the other company expenses in connection with the writing and handling of dwelling policies, exclusive of claim adjustment expenses, are incurred when the policy is written and before the premium is paid. The deduction for these expenses is determined from data provided by the NCRB for the year ended 12/31/17.

Line B-2

Delayed remission of premium:

This deduction is necessary because of delay in remission and collection of premium to the companies, which amounts to approximately 50-75 days after the effective dates of the policies. Therefore, funds for the unearned premium reserve required during the initial days of all policies must be taken from the company's surplus.

1. Agents' balances for premiums due less than 90 days as a ratio to net written premium (based on data for all companies writing dwelling insurance in North Carolina)	0.2046	0.1856
2. Factor to include effect of agents' balances or uncollected premiums overdue for more than 90 days (based on data provided by A. M. Best)	1.021	1.021
3. Factor for agents' balances, (1) x (2)	0.209	0.189

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line C-2

The expected loss and loss adjustment expense ratio reflects the expense provisions for the year ended 12/31/17.

Line C-3

The mean loss reserve is determined by multiplying the incurred losses in line (2) by the North Carolina ratio of the mean loss reserves to the incurred losses in 2017 for dwelling insurance. This ratio is based on North Carolina companies' Statutory Page 14 annual statement data and has been adjusted to include loss adjustment expense reserves.

	Fire	EC
1. Incurred Losses for Calendar Year 2017	$123,225,922	$74,001,415
2. Loss Reserves as of 12/31/16	$55,733,024	$68,978,452
3. Loss Reserves as of 12/31/17	$66,350,617	$55,475,077
4. Mean Loss Reserve 2017, 1/2 [(2) + (3)]	$61,041,821	$62,226,765
5. Ratio, (4) ÷ (1)	0.495	0.841
6. Ratio of LAE Reserves to Loss Reserves (a)	0.197	0.197
7. Ratio of Incurred LAE to Incurred Losses (a)	0.136	0.136
8. Loss and LAE Reserve, [(5)x(1.0+(6))/(1.0+(7))]	0.522	0.886

(a) Based on 2017 All-Industry Insurance Expense Exhibit (source: A.M. Best)

Line E

The rate of return is the ratio of net investment income earned to mean cash and invested assets. Net investment income is computed for all companies writing dwelling insurance in North Carolina as follows:

Year	Net Investment Income Earned	Mean Cash and Invested Assets	Rate of Return
2017	$51,111,117	$1,677,388,358	3.05%

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line H

The average rate of Federal income tax was determined by applying the average tax rate for net investment income and the current tax rate applicable to realized capital gains (or losses) to the rates of return as calculated above.

	Rate of Return	Federal Income Tax Rate
Net Investment Income Earned	3.05%	0.234

The average rate of Federal income tax was determined by applying current tax rates to the distribution of investment income earned for all companies. These data are for 2017 from Best's Aggregates and Averages, Underwriting and Investment Exhibit, Part 1, Column 8.

Bonds	Taxable	$23,383,712	0.350
	Non-Taxable	$9,714,629	-
	Sub-Total	$33,098,341	0.247
Stocks	Taxable (a)	$7,611,742	0.105
	Non-Taxable	$1,789,178	-
	Sub-Total	$9,400,920	0.085
Mortgage Loans		$755,495	
Real Estate		$1,839,630	
Collateral Loans		$672	
Cash on Deposit		$980,828	
Short Term Investments		($156,684)	
All Other		$10,386,831	
Sub-Total		$13,806,772	0.350
Total		$56,306,033	0.245
Investment Deductions		$5,186,760	0.350
Net Investment Income Earned		$51,119,273	0.234

(a) Only 30% of dividend income on stock is subject to the full corporate income tax rate of 35%. The applicable tax rate is thus 10.5% (.35 x .3 = 10.5%)

NORTH CAROLINA

DWELLING FIRE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

A.	Unearned Premium Reserve		
	1.	Direct Earned Premium for Accident Year Ended 12/31/16	$50,573,659
	2.	Mean Unearned Premium Reserve, (1) x 0.5107	$25,827,968
	3.	Deduction for Prepaid Expenses	
		Commission and Brokerage	10.63%
		Taxes, Licenses and Fees	2.37%
		1/2 General Expenses	2.31%
		1/2 Other Acquisition	3.39%
		Total	18.70%
	4.	(2) x (3)	$4,829,830
	5.	Net Subject to Investment, (2) - (4)	$20,998,138
B.	Delayed Remission of Premium (Agents' Balances)		
	1.	Direct Earned Premium (A-1)	$50,573,659
	2.	Average Agents' Balances	0.201
	3.	Delayed Remission, (1) x (2)	$10,165,305
C.	Loss Reserve		
	1.	Direct Earned Premium (A-1)	$50,573,659
	2.	Expected Incurred Losses and Loss Adjustment Expense, (1) x 0.5559	$28,113,897
	3.	Expected Mean Loss Reserves, (2) x 1.033	$29,041,656
D.	Net Subject to Investment, (A-5) - (B-3) + (C-3)		$39,874,489
E.	Average Rate of Return		3.01%
F.	Investment Earnings on Net Subject to Investment, (D) x (E)		$1,200,222
G.	Average Rate of Return as a Percent of Direct Earned Premium, (F) / (A-1)		2.37%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes, (G) x (1 - 0.221)		1.85%

NORTH CAROLINA

DWELLING EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

A.	Unearned Premium Reserve	
1.	Direct Earned Premium for Accident Year Ended 12/31/16	$68,124,747
2.	Mean Unearned Premium Reserve, (1) x 0.4971	$33,864,812
3.	Deduction for Prepaid Expenses	
	Commission and Brokerage	9.56%
	Taxes, Licenses and Fees	2.25%
	1/2 General Expenses	2.14%
	1/2 Other Acquisition	3.58%
	Total	17.53%
4.	(2) x (3)	$5,936,502
5.	Net Subject to Investment, (2) - (4)	$27,928,310
B.	Delayed Remission of Premium (Agents' Balances)	
1.	Direct Earned Premium (A-1)	$68,124,747
2.	Average Agents' Balances	0.182
3.	Delayed Remission, (1) x (2)	$12,398,704
C.	Loss Reserve	
1.	Direct Earned Premium (A-1)	$68,124,747
2.	Expected Incurred Losses and Loss Adjustment Expense, (1) x 0.1482	$10,096,088
3.	Expected Mean Loss Reserves, (2) x 0.442	$4,462,471
D.	Net Subject to Investment, (A-5) - (B-3) + (C-3)	$19,992,077
E.	Average Rate of Return	3.01%
F.	Investment Earnings on Net Subject to Investment, (D) x (E)	$601,762
G.	Average Rate of Return as a Percent of Direct Earned Premium, (F) / (A-1)	0.88%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes, (G) x (1 - 0.221)	0.69%

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line A-1

Direct earned premiums are the earned premiums for dwelling insurance in North Carolina from Statutory Page 14 of the Annual Statement.

Line A-2

The mean unearned premium reserve is determined by multiplying the direct earned premiums in line (1) by the ratio of the mean unearned premium reserve to the collected earned premium for calendar year ended 12/31/16 for all companies writing dwelling insurance in North Carolina. These data are from Statutory Page 14 of the Annual Statement.

	Fire	EC
1. Collected Earned Premium for Calendar Year ended 12/31/16	$221,593,784	$241,893,067
2. Unearned Premium Reserve as of 12/31/15	$110,269,649	$115,797,891
3. Unearned Premium Reserve as of 12/31/16	$116,086,201	$124,686,420
4. Mean Unearned Premium Reserve, 1/2 [(2) + (3)]	$113,177,925	$120,242,156
5. Ratio, (4) ÷ (1)	0.5107	0.4971

Line A-3

Deduction for prepaid expenses:

Production costs and a large part of the other company expenses in connection with the writing and handling of dwelling policies, exclusive of claim adjustment expenses, are incurred when the policy is written and before the premium is paid. The deduction for these expenses is determined from data provided by the NCRB for the year ended 12/31/16.

Line B-2

Delayed remission of premium:

This deduction is necessary because of delay in remission and collection of premium to the companies, which amounts to approximately 50-75 days after the effective dates of the policies. Therefore, funds for the unearned premium reserve required during the initial days of all policies must be taken from the company's surplus.

1. Agents' balances for premiums due less than 90 days as a ratio to net written premium (based on data for all companies writing dwelling insurance in North Carolina)	0.1965	0.1784
2. Factor to include effect of agents' balances or uncollected premiums overdue for more than 90 days (based on data provided by A. M. Best)	1.021	1.021
3. Factor for agents' balances, (1) x (2)	0.201	0.182

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line C-2

The expected loss and loss adjustment expense ratio reflects the expense provisions for the year ended 12/31/16.

Line C-3

The mean loss reserve is determined by multiplying the incurred losses in line (2) by the North Carolina ratio of the mean loss reserves to the incurred losses in 2016 for dwelling insurance. This ratio is based on North Carolina companies' Statutory Page 14 annual statement data and has been adjusted to include loss adjustment expense reserves.

	Fire	EC
1. Incurred Losses for Calendar Year 2016	$70,550,363	$126,737,675
2. Loss Reserves as of 12/31/15	$78,177,895	$33,833,302
3. Loss Reserves as of 12/31/16	$55,733,024	$68,978,452
4. Mean Loss Reserve 2016, 1/2 [(2) + (3)]	$66,955,460	$51,405,877
5. Ratio, (4) ÷ (1)	0.949	0.406
6. Ratio of LAE Reserves to Loss Reserves (a)	0.261	0.261
7. Ratio of Incurred LAE to Incurred Losses (a)	0.158	0.158
8. Loss and LAE Reserve, [(5)x(1.0+(6))/(1.0+(7))]	1.033	0.442

(a) Based on 2016 All-Industry Insurance Expense Exhibit (source: A.M. Best)

Line E

The rate of return is the ratio of net investment income earned to mean cash and invested assets. Net investment income is computed for all companies writing dwelling insurance in North Carolina as follows:

Year	Net Investment Income Earned	Mean Cash and Invested Assets	Rate of Return
2016	$48,019,546	$1,597,608,236	3.01%

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line H

The average rate of Federal income tax was determined by applying the average tax rate for net investment income and the current tax rate applicable to realized capital gains (or losses) to the rates of return as calculated above.

	Rate of Return	Federal Income Tax Rate
Net Investment Income Earned	3.01%	0.221

The average rate of Federal income tax was determined by applying current tax rates to the distribution of investment income earned for all companies. These data are for 2016 from Best's Aggregates and Averages, Underwriting and Investment Exhibit, Part 1, Column 8.

Bonds	Taxable	$22,730,939	0.350
	Non-Taxable	$10,564,051	-
	Sub-Total	$33,294,990	0.239
Stocks	Taxable (a)	$7,489,366	0.105
	Non-Taxable	$1,972,096	-
	Sub-Total	$9,461,462	0.083
Mortgage Loans		$665,613	
Real Estate		$1,810,152	
Collateral Loans		$780	
Cash on Deposit		$378,097	
Short Term Investments		($17,642)	
All Other		$7,536,112	
Sub-Total		$10,373,112	0.350
Total		$53,129,564	0.233
Investment Deductions		$5,107,215	0.350
Net Investment Income Earned		$48,022,349	0.221

(a) Only 30% of dividend income on stock is subject to the full corporate income tax rate of 35%. The applicable tax rate is thus 10.5% (.35 x .3 = 10.5%)

NORTH CAROLINA

DWELLING FIRE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

A.	Unearned Premium Reserve		
	1.	Direct Earned Premium for Accident Year Ended 12/31/15	$49,930,252
	2.	Mean Unearned Premium Reserve, (1) x 0.4631	$24,475,810
	3.	Deduction for Prepaid Expenses	
		Commission and Brokerage	11.38%
		Taxes, Licenses and Fees	2.45%
		1/2 General Expenses	2.29%
		1/2 Other Acquisition	3.29%
		Total	19.41%
	4.	(2) x (3)	$4,750,755
	5.	Net Subject to Investment, (2) - (4)	$19,725,055
B.	Delayed Remission of Premium (Agents' Balances)		
	1.	Direct Earned Premium (A-1)	$49,930,252
	2.	Average Agents' Balances	0.205
	3.	Delayed Remission, (1) x (2)	$10,235,702
C.	Loss Reserve		
	1.	Direct Earned Premium (A-1)	$49,930,252
	2.	Expected Incurred Losses and Loss Adjustment Expense, (1) x 0.5493	$27,426,687
	3.	Expected Mean Loss Reserves, (2) x 0.586	$16,072,039
D.	Net Subject to Investment, (A-5) - (B-3) + (C-3)		$25,561,392
E.	Average Rate of Return		3.15%
F.	Investment Earnings on Net Subject to Investment, (D) x (E)		$805,184
G.	Average Rate of Return as a Percent of Direct Earned Premium, (F) / (A-1)		1.61%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes, (G) x (1 - 0.223)		1.25%

NORTH CAROLINA

DWELLING EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

A.	Unearned Premium Reserve	
1.	Direct Earned Premium for Accident Year Ended 12/31/15	$65,057,929
2.	Mean Unearned Premium Reserve, (1) x 0.4976	$32,372,825
3.	Deduction for Prepaid Expenses	
	Commission and Brokerage	9.59%
	Taxes, Licenses and Fees	2.29%
	1/2 General Expenses	2.24%
	1/2 Other Acquisition	3.63%
	Total	17.75%
4.	(2) x (3)	$5,746,176
5.	Net Subject to Investment, (2) - (4)	$26,626,649
B.	Delayed Remission of Premium (Agents' Balances)	
1.	Direct Earned Premium (A-1)	$65,057,929
2.	Average Agents' Balances	0.186
3.	Delayed Remission, (1) x (2)	$12,100,775
C.	Loss Reserve	
1.	Direct Earned Premium (A-1)	$65,057,929
2.	Expected Incurred Losses and Loss Adjustment Expense, (1) x 0.1437	$9,348,824
3.	Expected Mean Loss Reserves, (2) x 0.511	$4,777,249
D.	Net Subject to Investment, (A-5) - (B-3) + (C-3)	$19,303,123
E.	Average Rate of Return	3.15%
F.	Investment Earnings on Net Subject to Investment, (D) x (E)	$608,048
G.	Average Rate of Return as a Percent of Direct Earned Premium, (F) / (A-1)	0.93%
H.	Average Rate of Return as a Percent of Direct Earned Premium after Federal Income Taxes, (G) x (1 - 0.223)	0.72%

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line A-1

Direct earned premiums are the earned premiums for dwelling insurance in North Carolina from Statutory Page 14 of the Annual Statement.

Line A-2

The mean unearned premium reserve is determined by multiplying the direct earned premiums in line (1) by the ratio of the mean unearned premium reserve to the collected earned premium for calendar year ended 12/31/15 for all companies writing dwelling insurance in North Carolina. These data are from Statutory Page 14 of the Annual Statement.

	Fire	EC
1. Collected Earned Premium for Calendar Year ended 12/31/15	$223,334,819	$226,811,458
2. Unearned Premium Reserve as of 12/31/14	$108,709,303	$109,909,322
3. Unearned Premium Reserve as of 12/31/15	$110,269,649	$115,797,891
4. Mean Unearned Premium Reserve, 1/2 [(2) + (3)]	$109,489,476	$112,853,607
5. Ratio, (4) ÷ (1)	0.4902	0.4976

Line A-3

Deduction for prepaid expenses:

Production costs and a large part of the other company expenses in connection with the writing and handling of dwelling policies, exclusive of claim adjustment expenses, are incurred when the policy is written and before the premium is paid. The deduction for these expenses is determined from data provided by the NCRB for the year ended 12/31/15.

Line B-2

Delayed remission of premium:

This deduction is necessary because of delay in remission and collection of premium to the companies, which amounts to approximately 50-75 days after the effective dates of the policies. Therefore, funds for the unearned premium reserve required during the initial days of all policies must be taken from the company's surplus.

1. Agents' balances for premiums due less than 90 days as a ratio to net written premium (based on data for all companies writing dwelling insurance in North Carolina)	0.2003	0.182
2. Factor to include effect of agents' balances or uncollected premiums overdue for more than 90 days (based on data provided by A. M. Best)	1.021	1.021
3. Factor for agents' balances, (1) x (2)	0.205	0.186

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line C-2

The expected loss and loss adjustment expense ratio reflects the expense provisions for the year ended 12/31/15.

Line C-3

The mean loss reserve is determined by multiplying the incurred losses in line (2) by the North Carolina ratio of the mean loss reserves to the incurred losses in 2015 for dwelling insurance. This ratio is based on North Carolina companies' Statutory Page 14 annual statement data and has been adjusted to include loss adjustment expense reserves.

	Fire	EC
1. Incurred Losses for Calendar Year 2015	$104,490,797	$70,202,684
2. Loss Reserves as of 12/31/14	$34,562,766	$32,119,812
3. Loss Reserves as of 12/31/15	$78,177,895	$33,833,302
4. Mean Loss Reserve 2015, 1/2 [(2) + (3)]	$56,370,331	$32,976,557
5. Ratio, (4) ÷ (1)	0.539	0.470
6. Ratio of LAE Reserves to Loss Reserves (a)	0.269	0.269
7. Ratio of Incurred LAE to Incurred Losses (a)	0.167	0.167
8. Loss and LAE Reserve, [(5)x(1.0+(6))/(1.0+(7))]	0.586	0.511

(a) Based on 2015 All-Industry Insurance Expense Exhibit (source: A.M. Best)

Line E

The rate of return is the ratio of net investment income earned to mean cash and invested assets. Net investment income is computed for all companies writing dwelling insurance in North Carolina as follows:

Year	Net Investment Income Earned	Mean Cash and Invested Assets	Rate of Return
2015	$49,322,923	$1,567,822,822	3.15%

NORTH CAROLINA

DWELLING FIRE AND EXTENDED COVERAGE INSURANCE

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line H

The average rate of Federal income tax was determined by applying the average tax rate for net investment income and the current tax rate applicable to realized capital gains (or losses) to the rates of return as calculated above.

	Rate of Return	Federal Income Tax Rate
Net Investment Income Earned	3.15%	0.223

The average rate of Federal income tax was determined by applying current tax rates to the distribution of investment income earned for all companies. These data are for 2015 from Best's Aggregates and Averages, Underwriting and Investment Exhibit, Part 1, Column 8.

Bonds	Taxable	$22,250,842	0.350
	Non-Taxable	$11,053,799	-
	Sub-Total	$33,304,641	0.234
Stocks	Taxable (a)	$7,417,666	0.105
	Non-Taxable	$1,536,107	-
	Sub-Total	$8,953,773	0.087
Mortgage Loans		$559,969	
Real Estate		$1,696,990	
Collateral Loans		$730	
Cash on Deposit		$176,196	
Short Term Investments		$80,094	
All Other		$9,524,324	
Sub-Total		$12,038,303	0.350
Total		$54,296,717	0.235
Investment Deductions		$4,970,931	0.350
Net Investment Income Earned		$49,325,786	0.223

(a) Only 30% of dividend income on stock is subject to the full corporate income tax rate of 35%. The applicable tax rate is thus 10.5% (.35 x .3 = 10.5%)

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DWELLING PROPERTY INSURANCE

11. IDENTIFICATION OF APPLICABLE STATISTICAL PLANS AND PROGRAMS AND A CERTIFICATION OF COMPLIANCE WITH THEM

(a) ISO Personal Lines Statistical Plan (Other Than Automobile)
ISO Personal Lines Statistical Agent Plan (Other Than Automobile)
ISO 2018 Call for Dwelling Fire and Extended Coverage Statistics
ISO 2018 Call for Dwelling Fire and Extended Coverage Statistical Agent Plan Statistics
ISS Personal Lines Statistical Plans - All Coverages
ISS 2018 Dwelling Fire and Extended Coverage Call
AAIS Personal Lines Statistical Plan
AAIS 2018 Call for Dwelling Fire and Extended Coverage Statistics
NISS Statistical Plan - All Coverages - Part IV, North Carolina
NISS 2018 Quarterly Call
NISS 2018 Calendar Year Annual Statement
NISS 2018 Financial Reconciliation Call
Annual Statement for Calendar Years 2018 and 2019
Insurance Expense Exhibit for Calendar Years 2018 and 2019
RB Calls for 2018 and 2019 North Carolina Expense Experience

(b) The North Carolina Rate Bureau certifies that there is no evidence known to it or, insofar as it is aware following reasonable inquiry, to the statistical agencies involved that the data which were collected under the statistical plans identified in response (11) (a) above and used in the filing are not materially true and accurate representations of the experience of the companies whose data underlie such experience. While the Rate Bureau is aware that the collected data sometimes require corrections or adjustments, the Rate Bureau's review of the data, the data collection process, and the ratemaking process indicates that the aggregate data are reasonable and reliable for ratemaking purposes. See also the prefiled testimony of P. Ericksen and M. Berry.

(c) The attached Exhibit (11) (c) contains general descriptions of the editing procedures used to ensure data were collected in accordance with the applicable statistical plans.

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DWELLING PROPERTY INSURANCE

ISO Editing Procedures

1. Upon receipt of the data from each reporting company, checks are made to ensure that each record (i.e., the data reported for each exposure) has valid and readable information. This includes a check that the appropriate alpha-numeric codes have been utilized.

2. The records are then checked to ensure that each of the fields has a valid code in it (e.g., company numbers must be entered as four-digit numerals).

3. Relationship edits which evaluate the interrelationship between codes are then performed. For example, if a record indicates North Carolina, Homeowners, Form 3, checks are made to ascertain that applicable interrelationships are maintained.

4. Distributional edits are performed to make sure that the reporting company has not erred in miscoding its data into a single class, territory, or other rating criteria due a systems problem or other error.

5. The resulting combined data from all the company records are reconciled with Statutory Page 14 Annual Statement data for that company.

6. After all of the ISO data are aggregated, a consolidated review of the data is conducted to determine overall reasonableness and accuracy. In this procedure the data are compared with previous statewide and territory figures. Areas of concern are identified, and results are verified by checking back to the source data.

ISS Editing Procedures

The following narrative sets forth a general description of the editing procedures utilized by ISS to review North Carolina statistical data. All North Carolina experience submitted to the ISS by affiliated companies undergoes standard procedures to ensure that the data is reported in accordance with the ISS's approved statistical plans.

ISS's review of the data takes place on two levels: analysis of individual company data and analysis of the aggregate data of all the companies combined. These two separate functions will be treated in that order.

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DWELLING PROPERTY INSURANCE

ISS Editing Procedures (continued)

Analysis of Company Data

Analysis of company data includes: completeness checks, editing for valid coding and checking the distribution of data among the various data elements.

1. Completeness Checks (Balancing and Reconciliation):

   Balancing and reconciliation procedures are used to determine completeness of reporting. Completeness means that the ISS has received and processed all of the data due to be filed with the ISS. First, totals of each company's processed data are compared to separate transmittal totals supplied by the company. This step ensures that ISS has processed completely the experience included in the company's submission of data and that no errors occur during this processing. As a second check for completeness, the reported statistical data is reconciled to Statutory Page 14 totals from the company's Annual Statement. It is a useful procedure in determining completeness because the annual statement represents an independent source of information.

2. Editing of Codes:

   Format and Readability

   Statistical data reported by affiliated companies must be filed in accordance with ISS's approved statistical plans. This includes the requirement that the data must conform to the specific formats and technical specifications in order for ISS to properly read and process these submissions. The initial edit is a test of each company's submission to ensure it has been reported using the proper record format and that it meets certain technical requirements for the line of insurance being reported. Key fields are tested to ensure that only numeric information has been reported in fields defined as numeric, and that the fields have been reported in the proper position in the record.

   Relational Edits

   The data items of information filed with the insurance company's experience are reported by using codes defined under ISS's statistical plans. For example, the various types of Policy Forms written on Homeowners policies in North Carolina are defined in the Personal Lines Statistical Plan. Each definition for each data element has a unique code assigned to it which distinguishes it from other definitions. All data items applicable to North Carolina are defined in a similar manner in each of ISS's statistical plans and have codes assigned to properly identify each definition.

   All records reported to ISS are subjected to validation of the reported codes. This validation, called editing, is performed to assure that companies are reporting properly defined ISS Statistical Plan codes for North Carolina experience.

   The purpose of the edit is to validate the statistical codes reported in each record. This validation is called a Relation Edit. A relational edit verifies that a reported code is valid in combination with one or more related data items. Relational edit tests are accomplished primarily through the use of specific edit tables applicable to each line of insurance.

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DWELLING PROPERTY INSURANCE

ISS Editing Procedures (continued)

In most cases, the experience data in the record is used in conjunction with the related codes and compared to an establishment or discontinued date for the code being validated. This ensures that specific codes are not being utilized beyond the range of time during which they are valid.

An example of a relational edit involves territory coding. Many territory code numbers are available under each statistical plan for various states, with various effective dates. However, only codes defined for North Carolina for the specific line being processed are valid in combination with North Carolina reported experience. Further, if a new code is erected, that code will be considered valid only if the date reported in the statistical record is equal or subsequent to the establishment date of the code.

3. Distributional Analysis:
The validation of the codes is not by itself sufficient to assure the credibility of company data. Having assured the reporting of valid codes, the statistical agent must verify that valid entries are indeed reliable. Therefore, the data is also reviewed for reasonable distributions. The primary focus of this review is to establish that the statistical data reported by the company is a credible reflection of the company's experience.

The distribution of company experience by specific data elements such as state, territory, policy form, and construction, for example, for the current reporting period is compared to company profiles of prior periods. In addition, ratios relevant to the line of insurance such as average premium, average loss, volume, loss ratio and loss frequency are compared to industry averages. This historical comparison can highlight changes in the pattern of reporting.

The distributional analysis serves as an additional verification that systematic errors are not introduced during the production of data files submitted to ISS by our affiliated companies. Disproportionate amounts of premiums and/or losses in a particular class or territory, for example, can be detected using this technique.

4. Validation of Aggregate Data
After the individual company has been reviewed, the data for all reporting companies is compiled to produce aggregate reports. The aggregate data represents the combined experience of many companies. This data is also subjected to similar review procedures. To ensure completeness, run to run control techniques are applied. This involves balancing the totals of the aggregate runs to previously verified control totals. In this manner the aggregate data is monitored to ensure the inclusion of the appropriate company data.

The aggregate data is also reviewed for credibility through distributional analysis similar to that performed on the individual company data. Earned exposures (where applicable) and premiums and incurred losses and claims are used to calculate pure premiums, claim frequencies and claim costs for comparison to past averages. The analysis of the aggregate data centers on determining consistency over time by comparing several years of experience, by coverage and class, or territory, for example. Through the application of these techniques, ISS is able to provide reliable insurance statistical data in North Carolina.

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DWELLING PROPERTY INSURANCE

NISS Editing Procedures

a. Every report received is checked for completeness. Every submission must include (1) an affidavit; (2) a letter of transmittal setting forth company control totals for the data being sent; (3) the data submitted via the NISS website.

b. Individual company submissions are balanced to the company letter of transmittal to ensure that all data have been received and processed. After all data has been received, the company reports are reconciled to the Annual Statement Statutory Page 14 amounts. The NISS Financial Reconciliation identifies any amounts needed to reconcile any differences between the company reported data and Annual Statement amounts.

c. Every company record submitted to NISS is verified through NISS edit software for its coding accuracy and conformance with NISS record layouts and instructions. NISS edits verify the accuracy of each code for each data element. Where possible, each data element is subjected to a relational edit whereby it will be checked for accuracy in conjunction with another field.

d. Individual company submissions are also subjected to a series of reasonability tests to determine that the current submission is consistent with previous company submissions, known changes in this line of business and statewide trends. NISS compares current year data to the previous year. This comparison is performed and analyzed by grouping data.

e. After all of the NISS data are combined, a review of this consolidated data is also performed. The aggregate data is compared on a year to year basis to again verify its reasonableness, similar to those checks employed on an individual company submission.

AAIS Editing Procedures

The American Association of Insurance Services functions as an official statistical agent in the State of North Carolina for a number of lines of insurance, including Homeowners. In this capacity, it provides for the administration of statistical programs in accordance with approved statistical plans on behalf of the Commissioner of Insurance. These plans, which were filed according to the requirements of the State of North Carolina, serve to ensure a high quality of data reliability.

1. All statistical plans constitute permanent calls for data, which is due at AAIS within 60 days following the close of the period covered by the report.

2. The AAIS data collection procedure consists of several consecutive steps in order to further verify receipt of accurate and complete data from each company and ultimately aggregate the data into the final experience format.

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DWELLING PROPERTY INSURANCE

AAIS Editing Procedures (continued)

3. The data collection procedure begins with the company uploading their data file into the AAIS secure online Statistical Data Management Application (SDMA). The SDMA verifies certain key fields, calculates transmittal totals for verification, and houses the edit program. The key fields are company number, line of insurance, transaction code and report period (quarter and year). All invalid key fields must be corrected before the data proceeds to the next step. Once all key fields have been validated, the data moves on to the edit program.

4. The edit program has several functions and reports. They are:

   a. Data is balanced to transmittal totals and submitting companies are verifying this upon submission of their data using our Statistical Data Management Application (SDMA).
   b. Each statistical field is edited to the valid codes in the statistical plan for the line being processed. Many fields are also cross edited. An example is deductible type and amount. All invalid codes are identified with an asterisk to the right of the code.
   c. Edit reports consist of a listing of invalid records, error summary report, month report, state report and field error detail report.
   d. Data distributions are monitored by the Statistical Reporting staff in conjunction with AAIS Actuaries. Material quality problems are logged by the Data Governance Steering Committee and the offending affiliate is notified of the error.
   e. Along with the edit and distribution reports, there are additional review procedures in place to identify procedural reporting errors that may exist (e.g., cancellations and coverage changes). A great deal of time is spent on this item because of its importance to the validity of the reported data.
   f. The Statistical Data Management Application (SDMA) performs analysis of a company's data and provides the company with a customized letter stating that their data was accepted by AAIS. Throughout the submission and editing process, the SDMA provides a status for the submission indicating the type of action required. Depending on the severity of errors, companies are requested to make corrections or resubmit data.

5. AAIS provides assistance to all of its affiliated companies to ensure a continued high level of data quality. Statistical coding seminars designed to instruct company coders and respond to questions are scheduled annually. In addition to the seminars, AAIS has developed Statistical Training Manuals for some lines and pre-edit programs for company in-house use. Technical Services staff is available to train company personnel in all aspects of data collection, coding, statistical reporting and data processing.

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DWELLING PROPERTY INSURANCE

12. INVESTMENT EARNINGS ON CAPITAL AND SURPLUS

Not applicable to dwelling insurance.

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DWELLING PROPERTY INSURANCE

13. LEVEL OF CAPITAL AND SURPLUS NEEDED TO SUPPORT PREMIUM WRITINGS WITHOUT ENDANGERING THE SOLVENCY OF MEMBER COMPANIES

(a) The weighted average premium to surplus ratios (weighted by North Carolina Dwelling Fire and Extended Coverage Direct Premiums Written) for the calendar years 2010-2019 for the company groups which wrote the coverages in each of those years:

	Fire			Extended Coverage	
Year	**Direct**	**Net**		**Direct**	**Net**
2019	0.92	0.93		0.88	0.91
2018	0.90	0.82		1.05	0.82
2017	0.85	0.86		0.85	0.87
2016	0.82	0.80		0.78	0.80
2015	0.82	0.78		0.78	0.78
2014	0.84	0.80		0.82	0.81
2013	0.89	0.86		0.85	0.85
2012	1.23	1.06		0.98	0.92
2011	1.31	1.14		1.04	0.99
2010	1.15	0.95		0.96	0.87
Average	0.97	0.90		0.90	0.86

Note: These data are based on statutory filings as compiled by the NAIC.

(b) The estimate of the future premium to surplus ratio is based on the 10-year average of the past premium to surplus ratios. See the pre-filed testimony of G. Zanjani.

(c) The necessary level of capital and surplus to support particular coverages varies by line, and the Rate Bureau regards the ratios shown in (a) as indicative of levels typical within the industry for the lines of business covered by this filing. The actual level of capital and surplus needed to support premium writings without endangering the solvency of a company is dependent upon (among others) the financial structure and investments unique to each company, the relationship of the company with affiliated companies as a group (and the experience of the affiliated companies), the mix of business of each company, and the conditions of the economy as they affect each company's individual circumstances. The Rate Bureau is advised that the National Association of Insurance Commissioners, as one of several criteria, generally considers that a premium to surplus ratio for an individual company of 3 to 1 warrants close regulatory attention and monitoring with respect to the company's solvency position.

(d) The Rate Bureau has determined the premium to surplus ratio for dwelling insurance in North Carolina based on the weighted average premium to surplus ratios for insurance groups writing dwelling insurance in North Carolina, where the weights are the actual premiums written for dwelling insurance. The premium to surplus ratios of the insurers actually writing this business in North Carolina is representative of the leverage relevant for this line and state. The Rate Bureau has not further allocated surplus within these insurers across lines and states in this or other filings in North Carolina.

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DWELLING PROPERTY INSURANCE

14. OTHER INFORMATION REQUIRED BY THE COMMISSIONER

(a) See the pre-filed testimony of P. Ericksen, P. Anderson, M. Berry, G. Zanjani, J. Vander Weide, M. Mao and S. Fiete.

(b) Not applicable to dwelling insurance.

(c) Not applicable to dwelling insurance.

(d) See attached Exhibit 14(d).

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DWELLING PROPERTY INSURANCE

The following are changes in methodology or presentation used in this filing as compared to the methodologies or presentation used in the August 14, 2019 filing:

1. In this filing, the exposures that were used in the hurricane model runs were first trended to the period the rates will be in effect (i.e., six months beyond the assumed effective date of 9/1/2021). No trend was applied to the modeled hurricane losses. In the previous filing, trend was applied to the modeled losses and not the exposures.

2. In this filing, historical and prospective annual loss trends were selected to trend the losses to the period the rates will be in effect (i.e., one year beyond the assumed effective date). In previous filings, this was accomplished using Current Cost Factors and Loss Projection Factors based on external indices and Loss Trend Adjustment Factors reflecting the differences between the historical experience and the external indices.

3. In this filing, the number of years used in the excess wind procedure was reduced to 30 years in order to be more responsive to the more recent loss experience for the various types of non-hurricane windstorms and hailstorms. In the previous filing, 62 years of loss experience, which was all of the available experience, was used.

4. In this filing, for the rate level calculations by territory, the Non-Hurricane Base Class Loss Costs by territory were trended to the period the rates will be in effect and loaded for LAE in order to match the Modeled Hurricane Base Class Loss Costs. In the rate level calculation by territory in the previous filing, the Non-Hurricane Base Class Loss Costs were trended to the latest year of the review, the Modeled Hurricane Base Class Loss Costs were not trended, and neither loss costs were loaded for LAE. In both filings, trend and LAE are reflected in the Indicated Base Class Loss Costs by territory (Column (8) on page C-9 and Column (10) on page C-11) by distributing the Indicated Statewide Base Class Loss Cost (which is trended and loaded for LAE) to each territory.

5. In this filing, the projected Beach and FAIR Plan hurricane losses used in the Compensation for Assessment Risk analysis were determined by using the Beach and FAIR Plans' modeled losses for the previous storm season (the 2019 storm season) and adjusting those losses to the 2020 storm season based on the impact of changes in the underlying exposures and the hurricane models, because the modeled losses for the 2020 storm season were not available. In the previous filing, the modeled losses for the then-current storm season were available and were used.

6. In this filing, the proforma profit analysis reflects investment income on reinsurance balances. In the previous filing, this adjustment was not included.

See also the pre-filed testimony of P. Ericksen, P. Anderson, M. Berry, G. Zanjani, M. Mao and S. Fiete.

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

SECTION F - NEW RATING FACTORS

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

OVERVIEW

This filing proposes Age of Construction rating factors for Buildings coverage. The proposed relativities are being implemented on a revenue-neutral basis through the application of territorial off-balance factors.

Data Used

The Age of Construction rating factor analysis is based upon five accident years of North Carolina data ending 12/31/2018. Only data reported to Insurance Services Office (ISO) and Independent Statistical Services (ISS) was used in the analysis. Data reported to National Independent Statistical Services (NISS) was excluded because the loss records lacked sufficient detail. Data reported under the "pre-1960" statistical plan code was also removed.

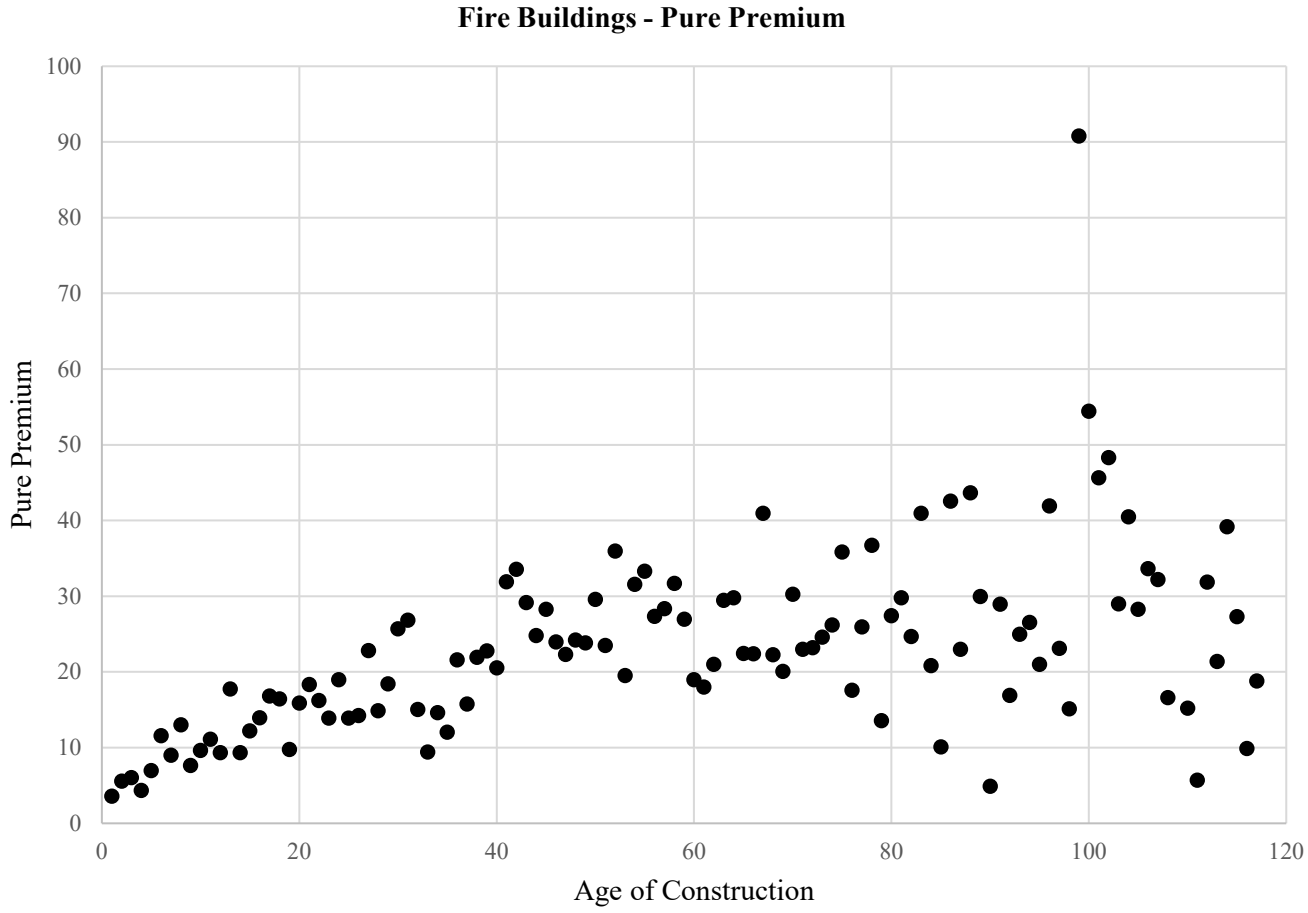
NORTH CAROLINA

DWELLING PROPERTY INSURANCE

AGE OF CONSTRUCTION ANALYSIS

Methodology

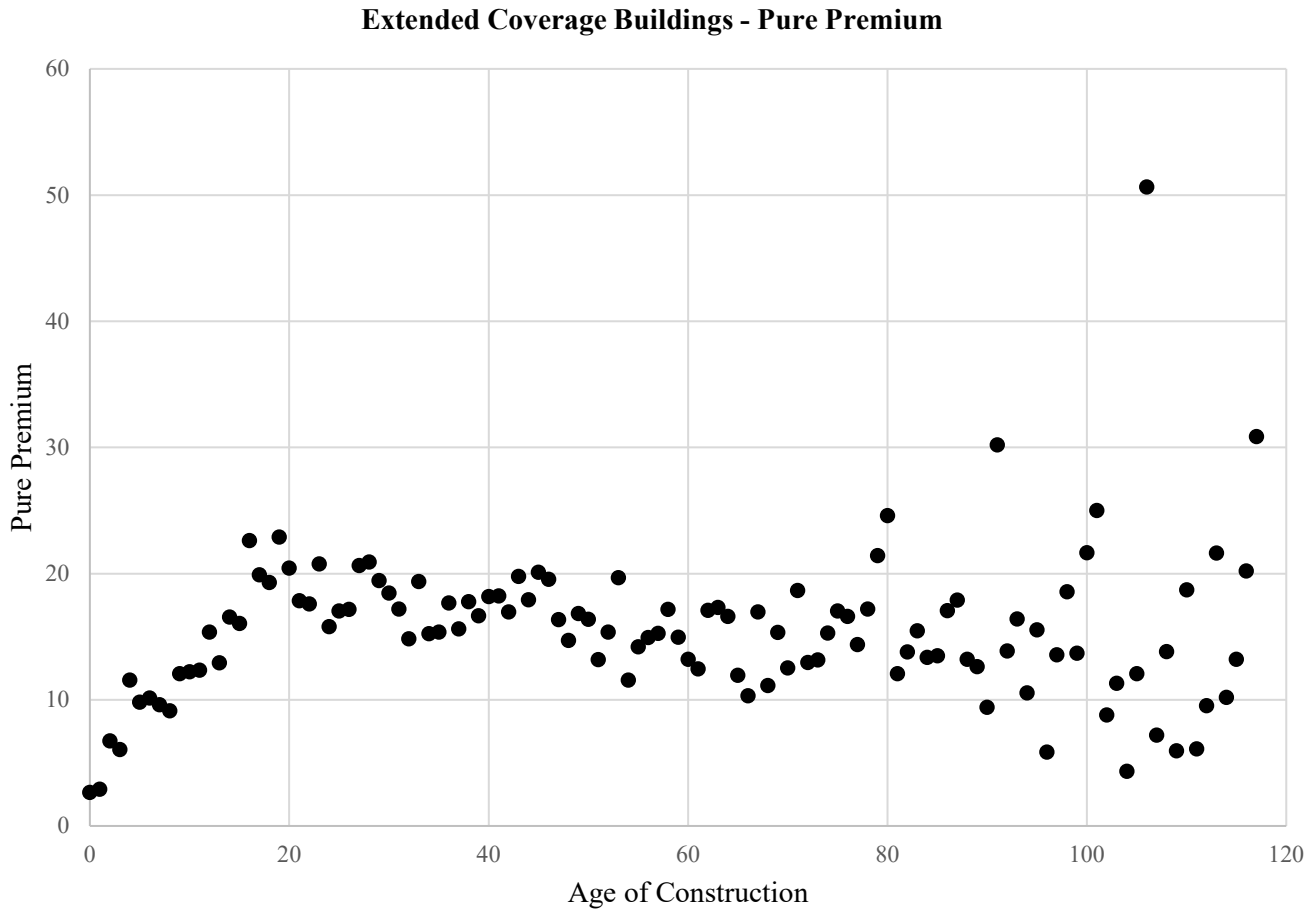
The indicated Age of Construction rating factors are the result of applying a one-way pure premium methodology to the five years of North Carolina experience ending 12/31/2018. The reported losses used were developed to ultimate and adjusted to the base value for all rating variables. Average pure premiums were then calculated by dividing the adjusted losses by earned house years:



NORTH CAROLINA

DWELLING PROPERTY INSURANCE

AGE OF CONSTRUCTION ANALYSIS

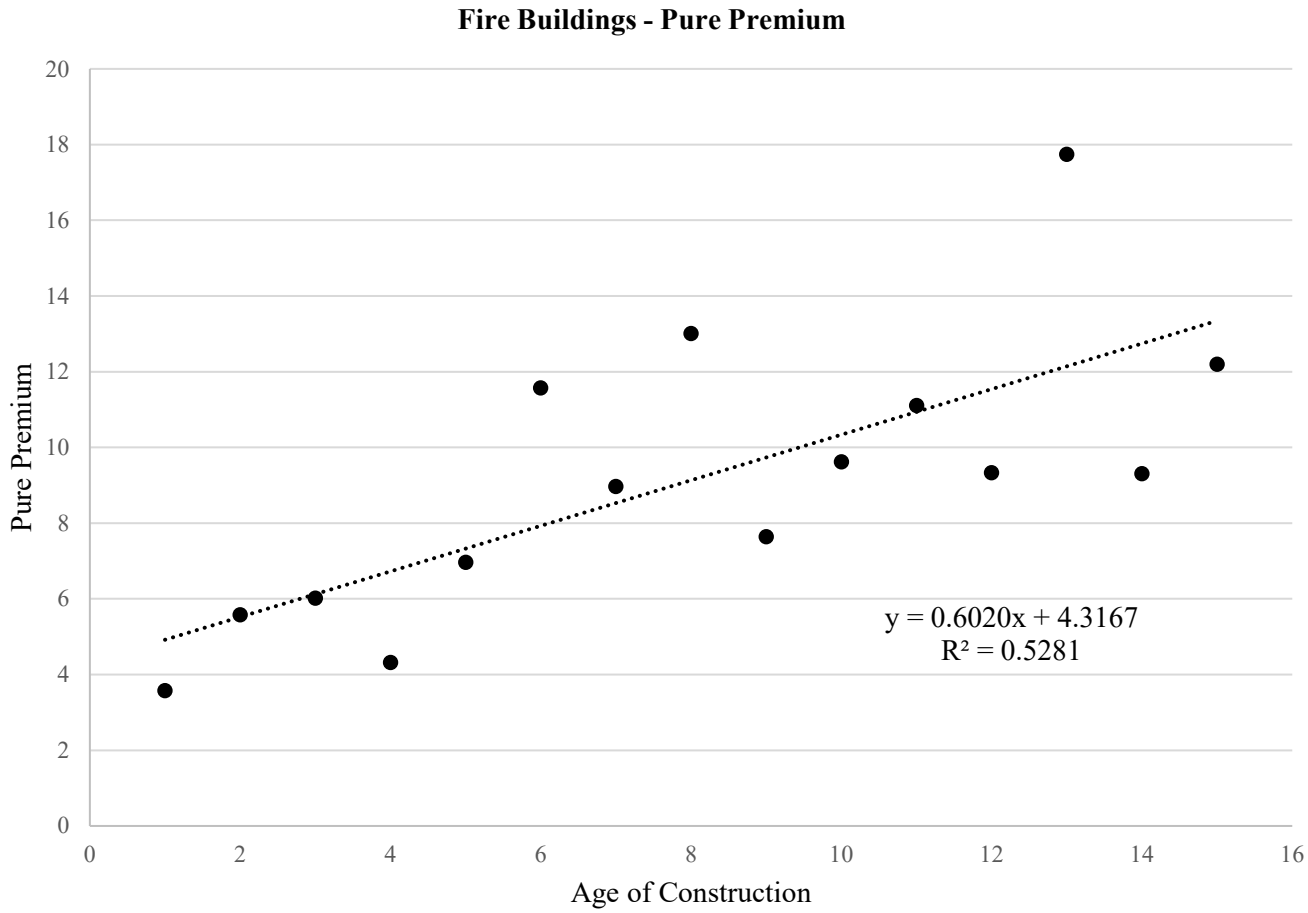


Next, the cutoff age for receiving a credit was selected such that the pure premium at the cutoff age was roughly equal to average pure premium for all dwellings older than that age. Using this criterion, 15 years was selected to be the cutoff age for credits. Finally, the indicated relativities were calculated by fitting a straight line to the pure premiums from ages 0 to 15:

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

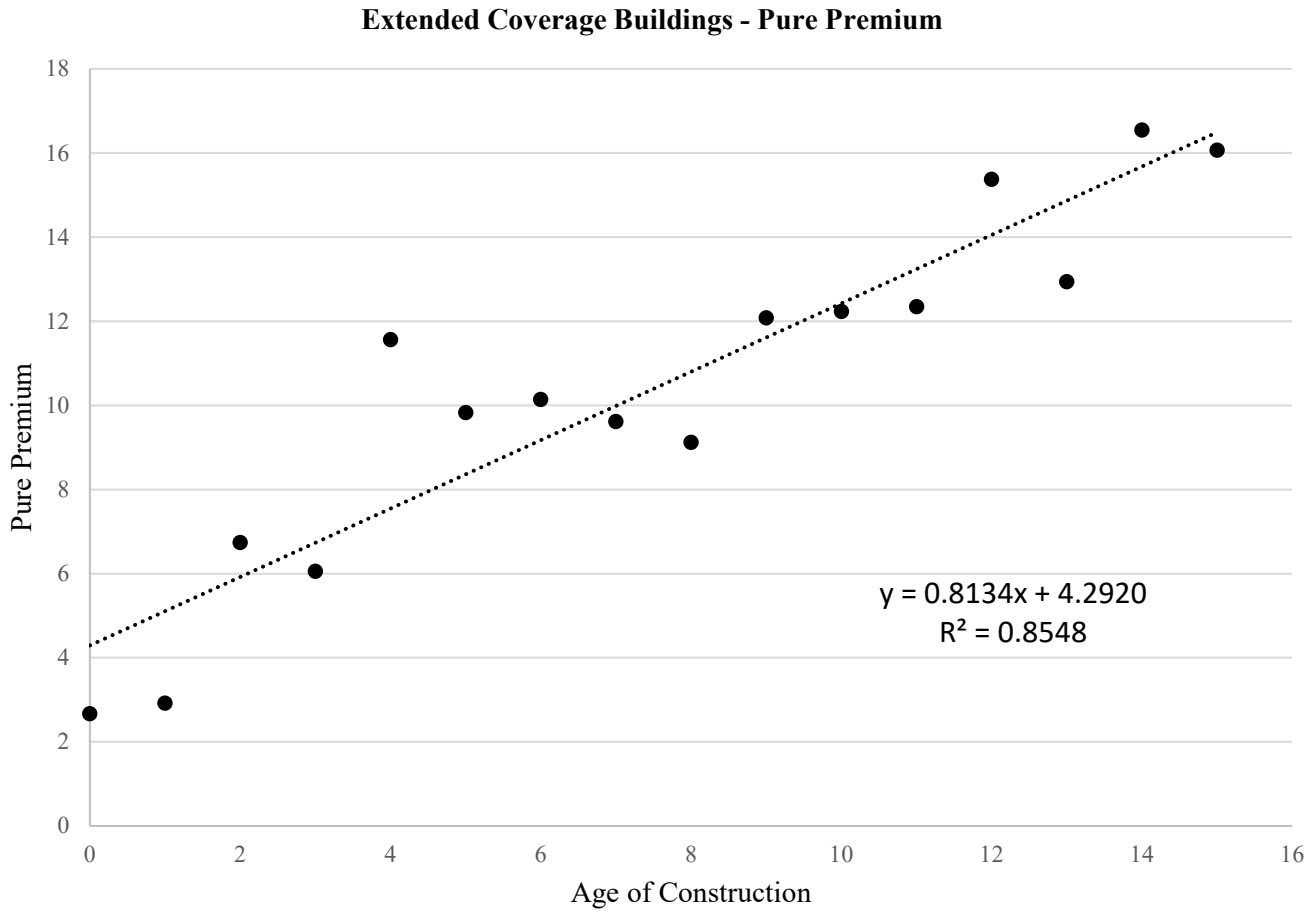
AGE OF CONSTRUCTION ANALYSIS



NORTH CAROLINA

DWELLING PROPERTY INSURANCE

AGE OF CONSTRUCTION ANALYSIS



NORTH CAROLINA

DWELLING PROPERTY INSURANCE

AGE OF CONSTRUCTION ANALYSIS

The indicated Age of Construction relativities show significant credits for newer homes. In order to temper the impacts that the indicated changes would have on policyholders, the proposed factors were calculated by applying a constant discount factor of 1.0% for each year of decrement from the base age of 15 years:

Proposed Age of Construction Rating Factors				
	Fire Buildings		**Extended Coverage Buildings**	
Age of Construction	Indicated Factor	Proposed Factor	Indicated Factor	Proposed Factor
0	0.323	0.860	0.600	0.860
1	0.369	0.869	0.627	0.869
2	0.414	0.878	0.653	0.878
3	0.459	0.886	0.680	0.886
4	0.504	0.895	0.707	0.895
5	0.549	0.904	0.733	0.904
6	0.594	0.914	0.760	0.914
7	0.639	0.923	0.786	0.923
8	0.684	0.932	0.813	0.932
9	0.729	0.941	0.840	0.941
10	0.774	0.951	0.866	0.951
11	0.820	0.961	0.893	0.961
12	0.865	0.970	0.920	0.970
13	0.910	0.980	0.946	0.980
14	0.955	0.990	0.973	0.990
15+	1.000	1.000	1.000	1.000

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

OFF-BALANCE FACTORS

In order to implement the revised rating factors on a statewide (and territory) revenue-neutral basis, it is necessary to incorporate an "off-balance" factor in the calculation of the revised base class rates by territory.

The off-balance factor represents the rate level effect that would result if the revised factors were to be implemented without any adjustment to the current base class rates. Hence, by dividing out the off-balance factor in the calculation of the revised base class rates, the revised rating factors will have no effect on the average rate for all insureds. The off-balance factor by territory is calculated by re-rating the underlying policies using the revised factors and taking the ratio of the revised premium-at-present-rate to the original premium-at-present-rate.

The maximum decrease and increase for policyholders were also calculated by territory. These maximum changes reflect the revised factors as well as the application of the off-balance factor.

The data used in the calculation of the off-balance factors is based upon the combined accident year ending 12/31/2018 data of companies writing dwelling insurance in North Carolina and reporting their data to Insurance Services Office (ISO) or Independent Statistical Service, Inc. (ISS).

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

OFF-BALANCE FACTORS
FIRE

Territory	Off-Balance Factor	Maximum Decrease	Maximum Increase
110	0.990	-13.1%	+1.0%
120	0.985	-12.7%	+1.6%
130	0.984	-12.6%	+1.7%
140	0.982	-12.4%	+1.8%
150	0.989	-13.0%	+1.1%
160	0.982	-12.4%	+1.8%
170	0.995	-13.6%	+0.5%
180	0.991	-13.2%	+0.9%
190	0.995	-13.6%	+0.5%
200	0.996	-13.8%	+0.4%
210	0.995	-13.6%	+0.5%
220	0.989	-13.0%	+1.1%
230	0.994	-13.5%	+0.6%
240	0.992	-13.3%	+0.8%
250	0.971	-11.5%	+3.0%
260	0.996	-13.7%	+0.4%
270	0.979	-12.2%	+2.1%
280	0.989	-13.2%	+1.1%
290	0.979	-12.2%	+2.1%
300	0.997	-13.7%	+0.3%
310	0.995	-13.6%	+0.5%
320	0.994	-13.5%	+0.6%
330	0.997	-13.7%	+0.4%
340	0.990	-13.1%	+1.0%
350	0.993	-13.4%	+0.7%
360	0.992	-13.3%	+0.8%
370	0.993	-13.4%	+0.8%
380	0.988	-13.0%	+1.2%
390	0.992	-13.3%	+0.8%
Statewide	0.989	-13.8%	+3.0%

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

OFF-BALANCE FACTORS
EXTENDED COVERAGE

Territory	Off-Balance Factor	Maximum Decrease	Maximum Increase
110	0.990	-13.1%	+1.0%
120	0.985	-12.7%	+1.6%
130	0.984	-12.6%	+1.6%
140	0.982	-12.4%	+1.8%
150	0.989	-13.0%	+1.1%
160	0.983	-12.5%	+1.7%
170	0.995	-13.6%	+0.5%
180	0.991	-13.2%	+0.9%
190	0.995	-13.6%	+0.5%
200	0.995	-13.6%	+0.5%
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240	0.992	-13.3%	+0.8%
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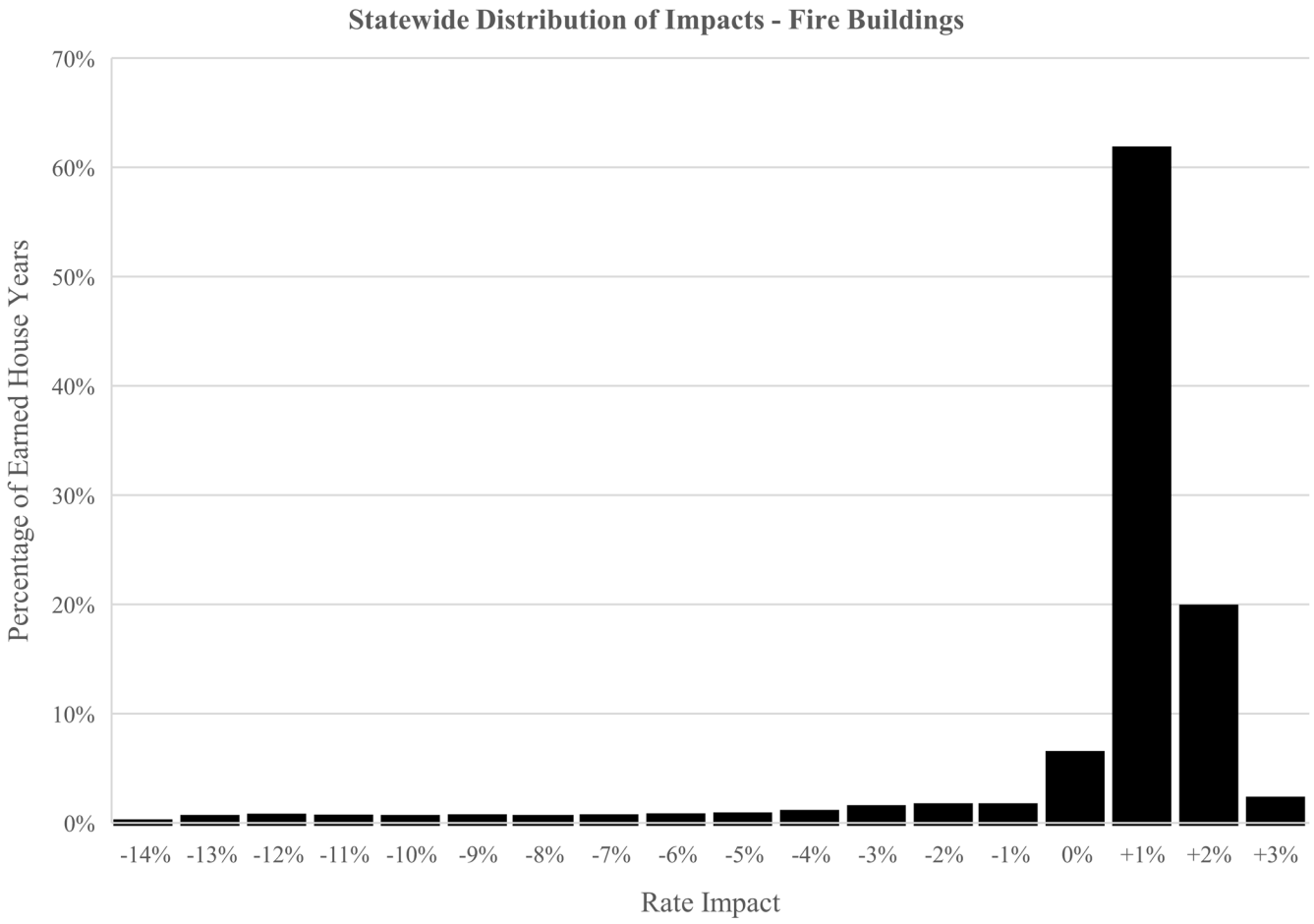
340	0.990	-13.1%	+1.0%
350	0.993	-13.4%	+0.7%
360	0.992	-13.3%	+0.8%
370	0.992	-13.3%	+0.9%
380	0.989	-13.0%	+1.1%
390	0.992	-13.3%	+0.9%
Statewide	0.987	-13.8%	+3.2%

NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DISTRIBUTION OF IMPACTS

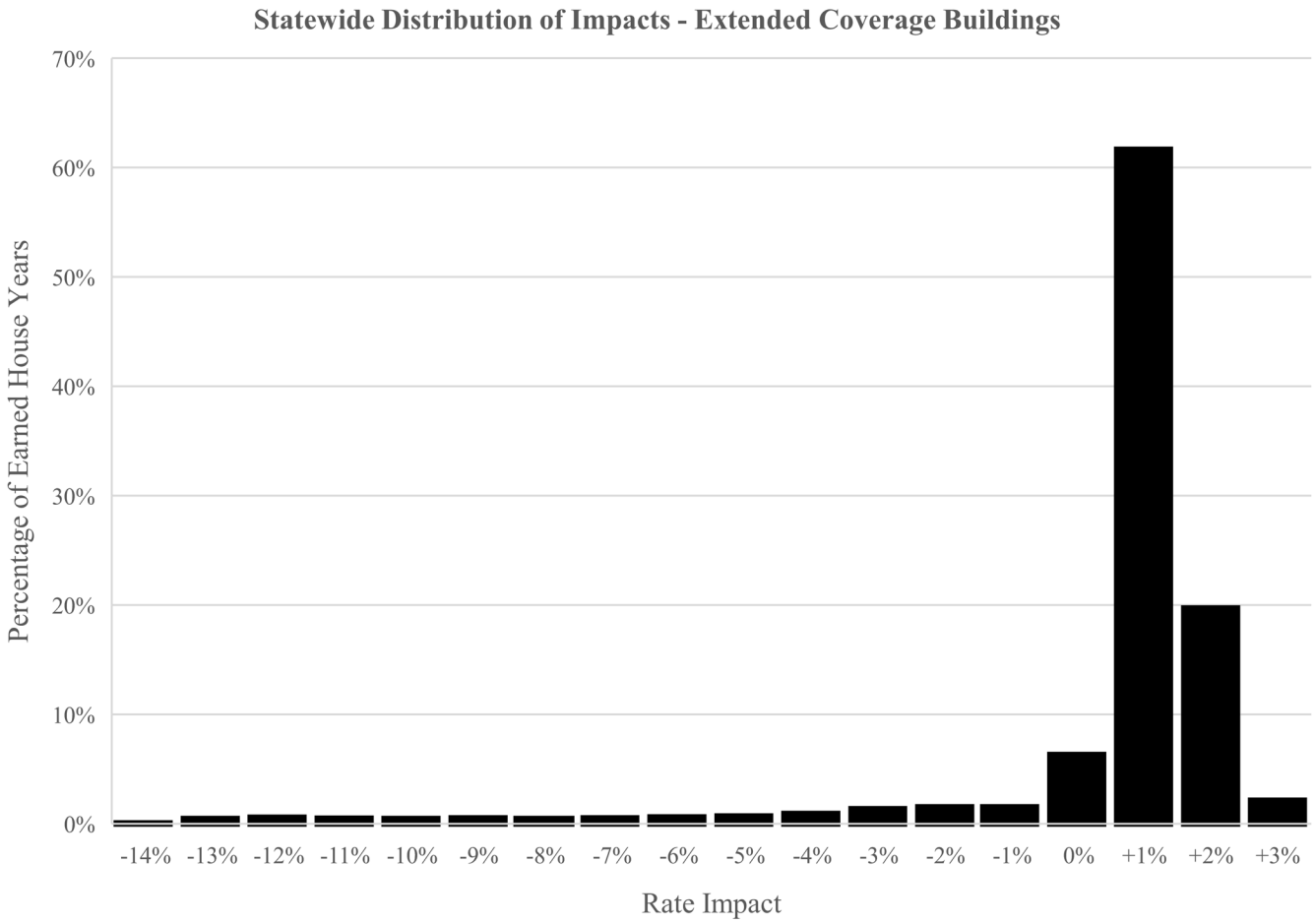
The following histograms display the estimated impacts to policyholders that would result from implementing the proposed rating factors on a statewide basis. These impacts also reflect the effects of the updates to the base rates that result from the off-balance factors.



NORTH CAROLINA

DWELLING PROPERTY INSURANCE

DISTRIBUTION OF IMPACTS



Notice to Manualholders

PERSONAL LINES
DWELLING POLICY PROGRAM MANUAL – MULTISTATE RULES
NOTICE DP-MU-2014-RU-001

CAUTION

Refer to state Notices for announcement of the use of this revision in individual jurisdictions.

INSTRUCTIONS TO MANUALHOLDERS

If your company has adopted this revision, you should insert the enclosed page(s) into your manual.

EFFECTIVE DATE

Refer to individual state Notices for effective date language.

CHANGE(S)

This notice presents the 2014 revisions to the Dwelling Policy Program Manual – General Rules. The following rules were revised:

- Rule **102.** Perils Insured Against has been revised to more closely reflect coverages provided by the individual Dwelling Policy forms.
- Rule **104.** Protection Classification Information has been revised to refer manual users to the ISO Community Mitigation Classification (CMC) Manual when determining the ISO Public Protection Classification information.
- Rule **210.** Refer To Company has been revised to introduce a facultative reinsurance rule.
- Rule **402.** Coverage **C** – Personal Property In Buildings Subject To Commercial Class Rates Or Specific Rates has been revised to complement changes made in Division Five of the Commercial Lines Manual (CLM).
- Rule **501.** Coverage **B** – Other Structures has been revised to add instructions which advise that no entry is needed in the policy Declarations for Coverage **B** since this coverage is automatically provided on a blanket basis for up to 10% of the Coverage **A** limit in all Dwelling policy forms.
- Rule **502.** Coverage **D** – Fair Rental Value and Coverage **E** – Additional Living Expense has been revised to add instructions which advise that no entry is needed in the policy Declarations for Coverage **D** in Form **DP 00 01** and for Coverages **D** and **E** in Forms **DP 00 02** and **DP 00 03** since these coverages are automatically provided for up to 20% of the Coverage **A** limit available. In addition, we have made changes to complement the companion forms filing.
- Rule **505.** Building Items Condo Unit-owner – **DP 00 01** Or **DP 00 02** has been revised to delete Paragraph **B.** to complement a change in the companion forms filing.
- Rule **510.** Theft Coverage has been revised to change the base deductible for Theft Coverage to $500 and introduce a new deductible factor for the $250 option. In addition, the factors for $1,000 and $2,500 have been revised to correspond with this change.
- Rule **513.** Limited Water Back-up And Sump Discharge Or Overflow Coverage has been revised to reflect that increased limits of coverage are now available.
- Rule **515.** Motorized Golf Cart – Physical Loss Coverage has been revised to delete text referencing the separate deductible for each involved golf cart.
- Rule **517.** Limited Fungi, Wet Or Dry Rot, Or Bacteria Coverage has been revised to reinforce that the limits provided are on an aggregate basis and to delete text to condense and streamline the rule.

Rule **211.** Additional Insured has been introduced to complement Additional Insured Described Location Endorsement **DP 04 41.**

Exceptions to the General Rules were previously filed and implemented on an individual state basis for eventual multistate application. Now that the exceptions apply in most states, the following exceptions are being relocated to the General Rules:

- Rule **303.** Ordinance Or Law Coverage – All Forms (Table **303.B.3.a.(1)(a)** and Table **303.B.3.a.(2)**)
- Rule **406.** Deductibles, multistate text in Paragraphs **A.** and **B.**
- Rule **503.** Ordinance Or Law Coverage For Coverage **B** – Specific Structures, Building Items And Improvements, Alterations And Additions (Paragraph **C.2.**)
- Rule **509.** Earthquake Coverage (Paragraphs **E.3., E.4., E.5.** and **F.**)

The following rules have been revised to make minor editorial revisions:

- Rule **204.** Multiple Locations
- Rule **205.** Multiple Policies
- Rule **304.** Permitted Incidental Occupancies
- Rule **404.** Mobile Or Trailer Homes – **DP 00 01** Only
- Rule **407.** Automatic Increase In Insurance
- Rule **408.** Protective Devices
- Rule **409.** Actual Cash Value Loss Settlement Windstorm Or Hail Losses To Roof Surfacing – **DP 00 02, DP 00 03** And **DP 00 01** With **DP 00 08**
- Rule **410.** Building Code Effectiveness Grading
- Rule **504.** Improvements, Alterations And Additions Tenant And Co-op Unit-owner – **DP 00 01** Or **DP 00 02**
- Rule **511.** Sinkhole Collapse Coverage

COMPANION REVISION

We are simultaneously revising our forms, which are being distributed under separate Notices.

REVISED PAGE(S)

DP-i thru DP-viii

DP-1 thru DP-23

PAGE CHECKLIST

Included in this distribution is a page checklist displaying the latest page numbers and edition dates.

REFERENCE INFORMATION (FOR COMPANY USE ONLY)

Circular Reference(s):

- Refer to individual state Notices for the approval/implementation circular references.
- LI-DP-2013-097 (07/01/2013) Dwelling Policy Program 2014 Multistate Loss Costs Revision To Be Submitted
- LI-DP-2013-096 (07/01/2013) Dwelling Policy Program 2014 Multistate Rules Revision To Be Submitted

Filing Reference(s):

- DP-2013-RRU13
- DP-2013-RLC13

MANUAL DISTRIBUTION NOTICE

We want to know:

- If this mailing was **not** properly addressed.
- If you have **not** received the correct quantity.
- If you wish to **change** the quantity you are now receiving.

Company Personnel:

- Contact your company manual coordinator at your home office.

Producers:

- Contact:

  Customer Support
  Verisk Analytics
  545 Washington Boulevard
  Jersey City, New Jersey 07310-1686
  800-888-4476

  For more information, please visit our paper products request center at **www.iso.com/paperproducts**.

  Follow Verisk Customer Support on Twitter! ***www.twitter.com/verisksupport***

DWELLING POLICY PROGRAM MANUAL
PAGE CHECKLIST – MULTISTATE

THIS MANUAL PAGE CHECKLIST DISPLAYS THE LATEST PAGE INFORMATION AS OF **7-14.**

NOTE: ALWAYS USE THE EDITION NUMBER TO DETERMINE THE LATEST PAGE.

IF YOUR MANUAL PAGES DO NOT COINCIDE WITH THIS LISTING, CONTACT CUSTOMER SUPPORT FOR THE NECESSARY MATERIAL TO UPDATE YOUR MANUAL.

PAGE NUMBER	EDITION		PAGE NUMBER	EDITION	
	NUMBER	DATE		NUMBER	DATE
DP-MU-2014-RU-001	–	7-14	DP-1 thru DP-23	2nd	7-14
DP-i thru DP-viii	2nd	7-14			

DWELLING POLICY PROGRAM MANUAL
GENERAL RULES
TABLE OF CONTENTS

RULE NO. **PAGE NO.**

PART V – ADDITIONAL COVERAGES AND INCREASED LIMITS RULES

DWELLING POLICY PROGRAM MANUAL
GENERAL RULES
INDEX

PART I
COVERAGE AND DEFINITION TYPE RULES

RULE 100.
INTRODUCTION

A. About The Dwelling Manual

The Dwelling Policy Program provides property and related coverages using the forms and endorsements referred to in this Manual. The rates, rules, forms and endorsements of the company shall apply in all cases not provided for in this Manual. This program does not apply to Farm Property. Refer to the company for its method of insuring farm property.

B. Manual Structure

1. Contents

The Dwelling Policy Program Manual contains the rules, classifications and rating provisions for the issuance of the Dwelling Policy. The Manual is divided into two sections, multistate general rules and state rules and rates.

The multistate general rules section contains rules common to most states. Any departures, additions, etc. to these rules, unique to individual jurisdictions, are contained in the state rules and rates section.

The general rules do **not** contain premiums, rates, charges or credits expressed in dollars and cents. They do, however, contain rating factors that are applied to state premiums.

2. General Rules

These rules are grouped into the following categories:

a. Part **I** – Coverage And Definition Type Rules,

b. Part **II** – Servicing Type Rules,

c. Part **III** – Base Premium Computation Rules,

d. Part **IV** – Adjusted Base Premium Computation Rules, and

e. Part **V** – Additional Coverages And Increased Limits Rules.

3. State Rules And Rates/ISO Loss Costs

These rules are grouped into the following categories:

a. Exceptions and Additional Rules,

b. Special State Requirements,

c. Territory Definitions,

d. Key Premium/Key Factor Tables, and

e. Premiums, Rates, Charges and Credits.

C. Company Rates/ISO Loss Costs

1. Definition

This Manual contains either ISO loss costs or individual company rates. A loss cost is that portion of the premium which covers only losses and the costs associated with settling losses.

2. Company Rates

All rules in this Manual are designed to be utilized with rates. All references in the rules and examples to rates and/or premiums (including base premiums) shall be interpreted to mean those established by the individual insurance company.

3. Loss Cost Conversion

Each insurance company must provide manualholders with either its own rates or with procedures to convert ISO loss costs to rates and/or premiums. If an insurer provides its own rates, use them in place of the ISO loss costs in this Manual. If an insurer does not provide its own rates, manualholders must convert ISO loss costs in this Manual to rates and/or premiums before applying any of the rules. Refer to the company for special instructions – including rounding procedures – on how to do this.

RULE 101.
FORMS, COVERAGES, MINIMUM LIMITS OF LIABILITY

A. Forms

The Dwelling Policy Program makes available the following policy forms:

1. Dwelling Property 1 Basic Form **DP 00 01,**

2. Dwelling Property 2 Broad Form **DP 00 02,** and

3. Dwelling Property 3 Special Form **DP 00 03.**

B. Coverages

1. Forms **DP 00 02** and **DP 00 03** provide the following coverages. These coverages are written as separate items in the policy or in separate policies:

a. Coverage **A** – Dwelling

b. Coverage **B** – Other Structures

c. Coverage **C** – Personal Property

d. Coverage **D** – Fair Rental Value

e. Coverage **E** – Additional Living Expense

2. Form **DP 00 01** provides Coverages **A** through **D;** Coverage **E** is available by endorsement.

RULE 101.
FORMS, COVERAGES, MINIMUM LIMITS OF LIABILITY
(Cont'd)

C. Minimum Limits Of Liability

The following coverages are subject to a minimum limit of liability:

Coverages	Minimum Limit
Coverage **A** – Dwelling	$12,000 (Form **DP 00 02**) $15,000 (Form **DP 00 03**)
Coverage **C** – Personal Property	$4,000 without Coverage **A** (Forms **DP 00 02** and **DP 00 03**)
There are **no** minimum limits for Form **DP 00 01**	

Table 101.C. Minimum Limits Of Liability

RULE 102.
PERILS INSURED AGAINST

The following is a general description of the coverages provided by the individual Dwelling Policy Forms. The policy should be consulted for exact contract conditions.

Perils	DP 00 01 Basic Form	DP 00 02 Broad Form	DP 00 03 Special Form
Fire or Lightning, Internal Explosion	Yes	Yes	Yes
Extended Coverage meaning Windstorm or Hail, Explosion, Riot or Civil Commotion, Aircraft, Vehicles, Smoke, Volcanic Eruption	Optional*	Yes	Yes
Vandalism or Malicious Mischief	Optional**	Yes	Yes
Damage by burglars, Falling objects, Weight of ice, snow or sleet, Accidental discharge or overflow of water or steam, Sudden and accidental tearing apart of a heating system or appliance for heating water, Freezing, Sudden and accidental damage from artificially generated electrical current.	No	Yes	Yes
Additional risks with certain exceptions	No	No	Yes***
* May only be written with the perils of Fire or Lightning, Internal Explosion ** May only be written with Extended Coverage *** Special Coverage (Coverages **A** and **B**)			

Table 102. Perils Insured Against

RULE 103. ELIGIBILITY

A Dwelling Policy may be issued to provide insurance under:

A. Coverage **A** – on a dwelling building:

1. Used solely for residential purposes except that certain incidental occupancies or up to 5 roomers or boarders are permitted;

2. Containing not more than four apartments; and

3. Which may be in a townhouse or rowhouse structure; or

4. In course of construction.

B. Coverage **A** – on a mobile or trailer home:

1. Using Form **DP 00 01** only;

2. Used solely for residential purposes except that certain incidental occupancies or up to 5 roomers or boarders are permitted;

3. Containing not more than one apartment;

4. For a policy period of not longer than one year; and

5. At the permanent location described in the policy.

C. Coverage **B:**

1. At the same location as the dwelling eligible for insurance under Coverage **A;**

2. Not used for business purposes except a permitted incidental occupancy or when rented for use as a private garage;

3. At a separate location when used in connection with the insured location but not for business purposes.

D. Coverage **C** in:

1. A dwelling, mobile or trailer home eligible under Coverage **A;** or

2. A dwelling with rental apartments including furnishings, equipment and appliances in halls or utility rooms; or

3. Any apartment, cooperative or condominium unit used as private living quarters of the insured or rented to others.

E. Coverage **D** for the loss of the fair rental value of:

1. A building eligible for insurance under Coverage **A** or **B;** or

2. Private living quarters eligible under Coverage **C.**

F. Coverage **E** for the additional living expenses incurred to maintain the insured's household.

RULE 104. PROTECTION CLASSIFICATION INFORMATION

Determine the ISO Public Protection Classification; refer to ISO's Community Mitigation Classifications (CMC) Manual, applicable to the municipality or classified area where the insured property is located.

RULE 105. SEASONAL DWELLING DEFINITION

A seasonal dwelling is a dwelling with continuous unoccupancy of three or more consecutive months during any one year period.

RULE 106.
CONSTRUCTION DEFINITIONS

A. Frame

Exterior wall of wood or other combustible construction, including wood iron-clad, stucco on wood or plaster on combustible supports or aluminum or plastic siding over frame.

B. Masonry Veneer

Exterior walls of combustible construction veneered with brick or stone.

C. Masonry

Exterior walls constructed of masonry materials such as adobe, brick, concrete, gypsum block, hollow concrete block, stone, tile or similar materials and floors and roof of combustible construction. (Disregarding floors resting directly on the ground).

D. Superior Construction

1. Non-Combustible

Exterior walls and floors and roof constructed of, and supported by metal, asbestos, gypsum, or other noncombustible materials.

2. Masonry Non-Combustible

Exterior walls constructed of masonry materials (as described in Paragraph **C.**) and floors and roof of metal or other non-combustible materials.

3. Fire Resistive

Exterior walls and floors and roof constructed of masonry or other fire resistive materials.

E. Mixed (Masonry/Frame)

A combination of both frame and masonry construction shall be classed and coded as frame when the exterior walls of frame construction (including gables) exceed 33 1/3% of the total exterior wall area; otherwise class as masonry.

RULE 107.
SINGLE AND SEPARATE BUILDINGS DEFINITION

A. Single Building

All buildings or sections of buildings which are accessible through unprotected openings shall be considered as a single building.

B. Separate Building

1. Buildings which are separated by space shall be considered separate buildings.

2. Buildings or sections of buildings which are separated by:

a. A 6 inch reinforced concrete or an 8 inch masonry party wall; or

b. A documented minimum two hour non-combustible wall which has been laboratory tested for independent structural integrity under fire conditions;

which pierces or rises to the underside of the roof and which pierces or extends to the innerside of the exterior wall shall be considered separate buildings. Accessibility between buildings with independent walls or through masonry party walls described above shall be protected by at least a Class A Fire Door installed in a masonry wall section.

RULE 108. – 200.
RESERVED FOR FUTURE USE

PART II
SERVICING TYPE RULES

RULE 201.
POLICY PERIOD

The policy may be written for a period of:

A. One year and may be extended for successive policy periods by extension certificate based upon the forms, premiums and endorsements then in effect for the company.

B. Three years prepaid at three times the annual premium.

C. Three years in annual installments. Each annual installment shall be the annual premium then in effect for the company. Use Deferred Premium Payment Endorsement **DP 04 32.**

For maintaining common anniversary dates, a policy may be written for a period less than one year or less than three years on a pro rata basis.

RULE 202.
CHANGES OR CANCELLATIONS

If insurance is increased, cancelled or reduced, the additional or return premium shall be computed on a pro rata basis, subject to the minimum premium.

RULE 203.
MANUAL PREMIUM REVISION

A manual premium revision shall be made in accordance with the following procedures:

A. The effective date of such revision shall be as announced.

B. The revision shall apply to any policy or endorsement in the manner outlined in the announcement of the revision.

C. Unless otherwise provided at the time of the announcement of the premium revision, the revision shall not affect:

1. In-force policy forms, endorsements or premiums, until the policy is renewed; or

2. In the case of a Deferred Premium Payment Plan, in-force policy premiums, until the anniversary following the effective date of the revision.

RULE 204.
MULTIPLE LOCATIONS

A policy may be issued to provide insurance at more than one Described Location in the same state provided:

A. The same form and deductible applies at each location;

B. A separate policy Declarations page is completed for each location; or

C. The policy Declarations page is completed by:

1. Showing the total policy premium for all locations in the premium payments section.

2. Showing the deductible by entry of the deductible amount and adding "at each location".

3. Inserting the form number that applies.

4. Adding an appropriate reference to the Additional Dwelling Declarations or company equivalent.

RULE 205.
MULTIPLE POLICIES

A. Application

Insurance may be provided on the same property under two or more Dwelling policies in one or more companies as follows:

1. The same form and endorsements must apply to all policies.

2. The same deductible amount must apply to all policies.

B. Endorsement

Use Premium Sharing – Two Or More Policies Endorsement **DP 04 30.**

C. Premium

The premium for each policy is developed as follows:

1. Compute the premium for the total limits of liability from the manual of the company issuing each policy.

2. Allocate the premium determined in Paragraph **1.** based on the ratio of each policy's limit of liability to the total limits of liability for all policies.

RULE 205.
MULTIPLE POLICIES (Cont'd)

D. Example

The following example is a premium computation between two companies using a $50,000 Coverage **A** Limit. The premiums shown are only for illustration.

Each Company's	Company A	Company B
Percentage share	70%	30%
Premium for $50,000 Cov. **A**	$240	$200
Each Company's Policy Premium	168 (70% of 240)	60 (30% of 200)
Total Premium	(168 + 60) = 228	

Table 205.D. Example

RULE 206.
MINIMUM PREMIUM

A. For prepaid policies a minimum **annual** premium shall be charged for each policy.

B. When policies are written under a premium payment plan, no payment shall be less than the minimum premium for each annual period.

C. The minimum premium may include all chargeable endorsements or coverages for Fire or Fire and Allied Lines if written at inception of the policy.

D. The minimum annual premium shall **not** include charges for Theft or Earthquake Coverage, except when Earthquake is the only peril covered under the policy.

E. Refer to company for minimum premium.

RULE 207.
TRANSFER OR ASSIGNMENT

Subject to the consent of the company, all rules of this Manual and any necessary adjustments of premium, a policy may be endorsed to effect:

A. Transfer to another location within the same state; or

B. Assignment from one insured to another in the event of transfer of title of the dwelling.

RULE 208.
WAIVER OF PREMIUM

A. When a policy is endorsed after the inception date, an amount of additional or return premium may be waived.

B. Refer to company for amount that may be waived.

RULE 209.
WHOLE DOLLAR PREMIUM RULE

Each premium shown on the policy and endorsements shall be rounded to the nearest whole dollar. A premium of fifty cents ($.50) or more shall be rounded to the next higher whole dollar.

In the event of cancellation by the company, the return premium may be carried to the next higher whole dollar.

RULE 210.
REFER TO COMPANY

Refer to company for:

A. Rating or classifying any risk for which there is no manual rate.

B. Situations where a portion of the property coverage is reinsured on a facultative basis.

The following rating procedure is available for the determination of the applicable premium:

1. Manual rules and rates shall apply to the portion of the property limit of liability retained by the company.

2. For any portion of the limit(s) of liability obtained by means of facultative reinsurance, the premium shall be the facultative cost for such insurance increased by a charge up to but not exceeding 50% of the facultative cost.

With respect to premium developed in accordance with this Paragraph **2.,** the company is responsible for maintaining complete files, including all details relating to selection of the premium charge.

Whenever a risk is rated on a refer-to-company basis each company is responsible for complying with regulatory or statutory rate filing or disclosure requirements.

Note

Rates shall not be inadequate, excessive or unfairly discriminatory.

RULE 211.
ADDITIONAL INSURED

A. Coverage Description

1. In addition to the named insured shown in the Declarations, another person or organization may be considered an insured in this policy with respect to Coverage **A** – Dwelling and Coverage **B** – Other Structure at the Described Location listed in the Schedule, or elsewhere in the policy. The interest of such persons or organization and the Described Location to which it applies may be acknowledged by naming them in the endorsement referenced in Paragraph **C.**

2. Such persons or organizations are entitled to receive notification if the policy is canceled or nonrenewed by the insurer.

RULE 211.
ADDITIONAL INSURED (Cont'd)

B. Premium Computation

No additional charge is made for use of this endorsement.

C. Endorsement

Use Additional Insured Endorsement **DP 04 41.**

RULES 212. – 300.
RESERVED FOR FUTURE USE

PART III
BASE PREMIUM COMPUTATION RULES

RULE 301.
BASE PREMIUM COMPUTATION

To compute the Base Premium, use the Key Premiums and Key Factors that are displayed in Rule **301.** Refer to state company rates/ISO loss costs.

A. Fire (All Forms), Extended Coverage (DP 00 01), Broad Form (DP 00 02), Or Special Form (DP 00 03) For Coverage A – Dwelling/Coverage C – Personal Property

1. From the Key Premium Table in this Manual, select the Key Premium for the classifications or coverages that apply to the risk.

2. From the Key Factor Table in this Manual, determine the Key Factor for the desired limit of liability. If the desired limit of liability is not shown in the table, **interpolate** as illustrated in Paragraph **B.** of this rule.

3. Multiply the Key Premium by the Key Factor and round to the nearest whole dollar to develop the Base Premium ($.50 or more rounded to the next higher whole dollar).

B. Interpolation Example

1. When the desired limit of liability is **less** than the highest limit shown, interpolate the Key Factors using the nearest limit above and below the desired limit, for example:

a. $25,500 desired limit; the nearest limits are $25,000 and $26,000.

b. For $25,000 the Key Factor is 1.082; for $26,000 the Key Factor is 1.098. Figure the difference between the two Key Factors and divide by 10. This provides a factor per $100.

$$\begin{array}{r} 1.098 \\ -\ 1.082 \\ \hline .016 \end{array} \div 10 = .0016$$

c. Multiply the factor per $100 times five, and add 1.082: the Key Factor for $25,000:

$$\begin{array}{r} .0016 \\ \times\ 5 \\ \hline .0080 \end{array} + 1.082 = 1.090$$

d. The result, 1.090, is the Key Factor for this example.

2. The factors shown in the interpolation example are for illustration only and are not necessarily the factors shown in the Key Factor Table of this Manual.

RULE 302.
VANDALISM AND MALICIOUS MISCHIEF – DP 00 01

Develop the Base Premium by multiplying the same limit of liability selected for Extended Coverage by the Vandalism and Malicious Mischief rate. Refer to state company rates/ISO loss costs.

RULE 303.
ORDINANCE OR LAW COVERAGE – ALL FORMS

A. Applicability By Form

1. DP 00 01

Coverage is **not** automatically included in this form but may be added by endorsement. See Paragraph **B.** for rating instructions.

2. DP 00 02 And DP 00 03

A limited amount of coverage is automatically included at each Described Location to pay for the increased costs necessary to comply with the enforcement of an ordinance or law. This amount is equal to 10% of the limit of liability that applies to:

a. Coverage **A** or Unit-owner Building Items if the insured is an owner of a Described Location; or

b. Coverage **B** if the insured is an owner of a Described Location which is not insured for Coverage **A** or Unit-owner Building Items; or

c. Improvements, Alterations and Additions if the insured is a tenant of a Described Location.

This amount may be increased by endorsement. See Paragraph **B.** for rating instructions.

RULE 303.
ORDINANCE OR LAW COVERAGE – ALL FORMS
(Cont'd)

B. New Or Increased Coverage

1. Ordinance Or Law Coverage

The policy may be endorsed to add (Form **DP 00 01**) or increase (Form **DP 00 02/DP 00 03**) basic Ordinance or Law Coverage to accommodate the increased costs known or estimated by the insured for material and labor to repair or replace the damaged property and to demolish the undamaged portion of damaged property and clear the site of resulting debris according to the ordinance or law.

2. Endorsement

For Form **DP 00 01,** use Ordinance Or Law Coverage Endorsement **DP 04 74.** For Form **DP 00 02** or **DP 00 03,** use Ordinance Or Law – Increased Amount Of Coverage Endorsement **DP 04 71.**

3. Premium Determination

a. Described Location Including Coverage A

(1) Form DP 00 01

(a) Fire And Extended Coverage

The premium is computed by multiplying the Base Premium by the appropriate factor selected from the following table:

Percentage Of Coverage A	
Total Amount	**Factors**
10%	1.03
25%	1.08
50%	1.15
75%	1.23
100%	1.30
For each add'l 25% increment, add:	.08

Table 303.B.3.a.(1)(a) Factors

(b) Vandalism And Malicious Mischief

Multiply the rate per $1,000 used to determine the Vandalism and Malicious Mischief Base Premium by the dollar amount of coverage added. Then multiply the result by .30.

(2) DP 00 02 Or DP 00 03 – Fire, Broad Or Special Forms

The premium is computed by multiplying the Base Premium by the appropriate factor selected from the following table:

Percentage Of Coverage A		
Increase In Amount	**Total Amount**	**Factors**
15%	25%	1.05
40%	50%	1.12
65%	75%	1.20
90%	100%	1.27
For each add'l 25% increment, add:		.08

Table 303.B.3.a.(2) Factors

b. Described Location Not Including Coverage A, But Including Coverage B – Specific Structures, Unit-owner Building Items, And/Or Improvements, Alterations And Additions

See Rule **503.** for rating instructions.

RULE 304.
PERMITTED INCIDENTAL OCCUPANCIES

A. Coverage Description

1. One of the incidental occupancies described in Paragraph **B.** is permitted in a premises eligible for coverage under a Dwelling Policy, if:

a. The policy provides insurance under Coverage **A, B** or **C;**

b. The incidental occupancy is operated by the insured who is the owner or a resident of the premises; and

c. There are no more than two persons at work in the incidental occupancy.

2. Use Permitted Incidental Occupancies Endorsement **DP 04 20.**

B. Permitted Incidental Occupancies

1. Offices, Schools or Studios meaning offices for business or professional purposes, and private schools or studios for music, dance, photography and other instructional purposes.

2. Small Service Occupancies meaning occupancies primarily for service rather than sales. For example: barber or beauty shop, tailor or dressmaker, telephone exchanges or shoe repair shops using handwork only.

3. Storage of merchandise if the value of the merchandise does not exceed $10,000.

RULE 304.
PERMITTED INCIDENTAL OCCUPANCIES (Cont'd)

C. Amount Of Insurance

The amounts of insurance for the contents of the incidental occupancy and merchandise in storage shall be stated as separate contents items in the policy Declarations.

D. Premium Computation

Determine the Coverage **C** Base Premium under Rule **301.,** using the single Key Factor for the total amount of insurance for:

1. Household personal property,

2. Contents of the incidental occupancy, and

3. Merchandise in storage.

RULE 305.
LOSS SETTLEMENT OPTIONS

A. Functional Replacement Cost Loss Settlement – Forms DP 00 02 And DP 00 03 Only

1. Introduction

The policy provides building loss settlement on a replacement cost basis if, at the time of loss, the amount of insurance on the damaged building represents at least 80% of the full replacement cost of the building immediately before the loss.

2. Coverage Description

The policy may be endorsed to provide building loss settlement exclusively on a functional replacement cost basis if, at the time of loss, the amount of insurance on the damaged building is 80% or more of the functional replacement cost of the building immediately before the loss. Functional Replacement Cost means the amount which it would cost to repair or replace the damaged building with less costly common construction materials and methods which are functionally equivalent to obsolete, antique or custom construction materials and methods.

3. Premium Computation

Develop the Base Premium in accordance with Rule **301.** for the amount of insurance selected for this option.

4. Endorsement

Use Functional Replacement Cost Loss Settlement Endorsement **DP 05 30.**

B. Actual Cash Value Loss Settlement – Forms DP 00 02 And DP 00 03 Only

1. Introduction

The policy provides building loss settlement on a replacement cost basis if, at the time of loss, the amount of insurance on the damaged building represents at least 80% of the full replacement cost of the building immediately before the loss.

2. Coverage Description

The policy may be endorsed to provide building loss settlement exclusively on an actual cash value basis if, on the inception date of the policy, the Coverage **A** limit of liability selected by the insured is less than 80% of the full replacement cost of the dwelling.

3. Premium Computation

The premium is computed by multiplying the Base Premium by the appropriate factor from the following table:

Coverage A Limit Of Liability Equals Less Than_____% Of Replacement Value	Factor
80%, but not less than 50%	1.05
Less than 50%	1.10

Table 305.B.3. Factors

4. Endorsement

Use Actual Cash Value Loss Settlement Endorsement **DP 04 76.**

RULES 306. – 400.
RESERVED FOR FUTURE USE

PART IV
ADJUSTED BASE PREMIUM COMPUTATION RULES

RULE 401.
SUPERIOR CONSTRUCTION

A. Introduction

Refer to the Construction Definition rule in this Manual for details.

B. Extended Coverage Rating Classification

For Extended Coverage rating purposes a dwelling classified as:

1. Fire Resistive is considered Wind Resistive.

2. Masonry Non-Combustible is considered Semi-Wind Resistive.

C. Premium Computation

Multiply the Masonry Base Premium by the appropriate factor selected from the following table:

Classifications	Fire	E.C., Broad & Special Forms
Fire Resistive & Masonry Non-Combustible	.50	.50
Non-Combustible	.50	1.00

Table 401.C. Superior Construction Factors

RULE 402.
COVERAGE C – PERSONAL PROPERTY IN BUILDINGS SUBJECT TO COMMERCIAL CLASS RATES OR SPECIFIC RATES

A. Fire

If the building is classified in Division Five of the Commercial Lines Manual – Fire And Allied Lines, Rule **85.,** Paragraph **B.1., B.2., B.3.** or **B.4.,** use the appropriate factor selected from the following table:

Types Of Construction	B.1. Or B.2.*	All Other B.2. Classifications, B.3., B.4. Or Is Rated Specifically
1. Fire Resistive, Masonry Non-Comb. & Non-Comb. Multiply the Masonry Coverage **C** Base Premium by:	.50	1.00
2. All Other Construction Multiply the Masonry Coverage **C** or Frame Base Premium by:	1.00	2.00
* Hotels and Motels Without Restaurant Only		

Table 402.A. Coverage C – Personal Property In Buildings

B. Extended Coverage, Vandalism And Malicious Mischief, Broad Or Special Form

Multiply the Coverage **C** Base Premium by 1.00.

RULE 403.
DWELLING UNDER CONSTRUCTION

A. Coverage Description

Two methods are provided for insuring this exposure.

1. Named Insured Is The Intended Occupant

A builder (contractor) may be designated as an additional insured. The policy may be cancelled upon completion of the dwelling. Use Dwelling Under Construction Endorsement **DP 11 43.**

2. Named Insured Is Not The Intended Occupant

The policy shall specify building is in course of construction and permission is granted to complete.

For other coverage bases, refer to the Commercial Lines Manual.

B. Premium Computation

1. Multiply the Coverage **A** Owner Occupied Base Premium by .65.

2. Multiply the Coverage **A** Non-Owner Occupied Base Premium by 1.00.

RULE 404.
MOBILE OR TRAILER HOMES – DP 00 01 ONLY

Refer to the state company rates/ISO loss costs.

Rule **410.** does not apply to Mobile or Trailer homes.

RULE 405.
TOWNHOUSE OR ROWHOUSE

A. Individual Family Units

Determine the total number of individual family units within a Fire Division. For example, a two family dwelling attached to a one family dwelling is considered **three** individual family units within a Fire Division if both dwellings are not separated by a fire wall. Four attached two family dwellings are considered **eight** individual family units within a Fire Division if they are not separated by fire walls. A policy may be issued for:

1. Coverage **A** when the dwelling contains one, two, three or four individual family units within a Fire Division.

2. Coverage **C** in a dwelling with one or more individual family units within a Fire Division.

RULE 405.
TOWNHOUSE OR ROWHOUSE (Cont'd)

B. Premium Computation

Number Of Individual Family Units	Use Coverage A* Or C Base Premium
1, 2, 3 or 4	1, 2, 3 or 4 families
5 or more	5 or more families
* Refer to Commercial Lines Manual for Building Coverage when it contains five or more individual family units within a Fire Division	

Table 405.B. Townhouse Or Rowhouse

RULE 406.
DEDUCTIBLES

All policies are subject to a deductible that applies to loss from all perils except Earthquake. A separate deductible type applies to Earthquake Coverage as described in Rule **509.**

For Theft Coverage, the deductible amount may differ from the deductible amount that applies to Fire and Allied Lines perils.

Refer to the Earthquake and Theft Coverage rules for the applicable deductible provision.

A. Base Deductible

$500 Deductible.

B. Optional Deductibles

1. All Perils Deductibles

To compute the premium for these options, multiply the Base Premium for the Base Deductible by the factors selected from the state exception pages.

2. Windstorm Or Hail Deductibles

When the policy covers the peril of Windstorm or Hail, the following deductible options may be used in conjunction with a deductible applicable to all other perils covered under Extended Coverage, Broad or Special Forms.

a. Percentage Deductibles

(1) Deductible Amounts

This option provides for higher Windstorm or Hail percentage deductibles of 1%, 2%, 5%, 7.5% and 10% of the limit of liability that applies to Coverage **A, B, D** or **E,** whichever is greatest, when the dollar amount of the percentage deductible selected exceeds the amount of the All Other Perils deductible. This option is not available for policies covering only personal property.

(2) Endorsement

Use Windstorm Or Hail Percentage Deductible Endorsement **DP 03 12.**

(3) Declarations Instructions

Enter, on the policy Declarations, the percentage amount that applies to Windstorm or Hail and the dollar amount that applies to All Other Perils. For example:

Deductible – Windstorm or Hail 2% of the Coverage **A** limit and $500 for All Other Perils.

(4) Deductible Application

In the event of a Windstorm or Hail loss to covered property, the dollar amount is deducted from the total of the loss for all coverages.

(5) Coverage Options

The deductible factors for Coverage **A, B, D** or **E** and coverage options for buildings and non-building structures differ by the deductible percentage amounts that apply to Windstorm or Hail, deductible amounts that apply to other perils, and the Coverage **A, B, D** or **E** limit.

The deductible factors for Coverage **C** and other personal property coverage options differ by the deductible percentage amounts that apply to Windstorm or Hail and the deductible amounts that apply to other perils.

(6) Use Of Factors

The factors for the Windstorm or Hail Deductibles incorporate the factors for the All Perils Deductibles. Do not use the factors for the All Perils Deductibles when rating a policy with a higher Windstorm or Hail deductible.

(7) Deductible Factors

To compute the premium for this provision, multiply the Extended Coverage, Broad or Special Form Base Premium for the Base Deductible for each coverage insured under the policy by the factor selected from the state exception pages.

RULE 406.
DEDUCTIBLES (Cont'd)

b. Higher Fixed-dollar Deductibles

(1) Deductible Amounts

This option provides for higher Windstorm or Hail fixed-dollar deductible amounts of $1,000, $2,000, $5,000, $7,500 and $10,000 when the dollar amount of the higher fixed-dollar deductible selected exceeds the amount of the All Other Perils deductible. This option is not available for policies covering only personal property.

(2) Endorsement

An endorsement is not required.

(3) Declarations Instructions

Separately enter, on the policy Declarations, the deductible amounts that apply to Windstorm or Hail and All Other Perils. For example: $1,000 for Windstorm or Hail and $500 for All Other Perils.

(4) Deductible Application

In the event of a Windstorm or Hail loss to covered property, the dollar amount is deducted from the total of the loss for all coverages.

(5) Coverage Options

The deductible factors for Coverage **A, B, D** or **E** and coverage options for buildings and non-building structures differ by the deductible amounts that apply to Windstorm or Hail and to other perils and the Coverage **A, B, D** or **E** limit.

The deductible factors for Coverage **C** and other personal property coverage options differ by the deductible amounts that apply to Windstorm or Hail and other perils.

(6) Use Of Factors

The factors for the Windstorm or Hail Deductibles incorporate the factors for the All Perils Deductibles. Do not use the factors for the All Perils Deductibles when rating a policy with a higher Windstorm or Hail deductible.

(7) Deductible Factors

To compute the premium for this provision, multiply the Extended Coverage, Broad or Special Form Base Premium for the Base Deductible for each coverage insured under the policy by the factor selected from the state exception pages.

RULE 407.
AUTOMATIC INCREASE IN INSURANCE

A. Coverage Description

The policy may be endorsed to provide automatic annual increases in the Coverage **A** and **B** limits of liability.

B. Premium Computation

1. The premium is computed by multiplying the Base Premium by the appropriate factors selected from the following table as follows:

Amount Of Annual Increase	Factor
4%	1.02
6%	1.03
8%	1.04
Each Add'l 4% over 8% add:	.02

Table 407.B.1. Factors

2. The premium for a three-year policy is 3.2 times the annual policy premium.

C. Endorsement

Use Automatic Increase In Insurance Endorsement **DP 04 11.**

RULE 408.
PROTECTIVE DEVICES

A. Protective Devices Factors

Approved and properly maintained installations of fire alarms and automatic sprinklers in the dwelling may be recognized for a reduced premium – computed by multiplying the Fire Base Premium by the selected factors below:

Protective Devices Factors

Type Of Installation*	Dwelling Factor	Mobile Or Trailer Home Factor
Central Station Reporting Fire Alarm	.90 to 1.00	.92 to 1.00
Fire Department Reporting Fire Alarm	.93 to 1.00	.95 to 1.00
Local Fire Alarm	.95	.97
Automatic Sprinklers In All Areas Including Attics, Bathrooms, Closets, Attached Structures	.80 to .90	.90 to .95
Automatic Sprinklers In All Areas Except Attic, Bathroom, Closet And Attached Structure Areas That Are Protected By A Fire Detector	.90 to 1.00	.95 to 1.00
* Refer to company for eligibility, types of systems and devices, installations, and available credits		

Table 408.A. Protective Devices Factors

B. Endorsement

Use Premises Alarm Or Fire Protection System Endorsement **DP 04 70.**

RULE 409.
ACTUAL CASH VALUE LOSS SETTLEMENT WINDSTORM OR HAIL LOSSES TO ROOF SURFACING – DP 00 02, DP 00 03 AND DP 00 01 WITH DP 00 08

A. Introduction

The policy provides settlement for building losses on a repair or replacement cost basis, subject to certain conditions.

B. Coverage Description

The policy may be endorsed to provide loss settlement exclusively on an Actual Cash Value basis for roof surfacing when damage is caused by the peril of Windstorm or Hail.

C. Premium Determination

To develop a premium for this option, multiply the Extended Coverage, if applicable, and Broad or Special Form Base Premium by a factor of .98.

D. Endorsement

Use Actual Cash Value Loss Settlement Windstorm Or Hail Losses To Roof Surfacing Endorsement **DP 04 75.**

RULE 410.
BUILDING CODE EFFECTIVENESS GRADING

This rule does not apply to Mobile or Trailer homes.

A. General Information

1. The Building Code Effectiveness Grading Schedule (BCEGS) develops a grade of 1 to 10 for a community based on the adequacy of its building code and the effectiveness of its enforcement of that code. Policies which cover the perils of Windstorm or Hail or Earthquake may be eligible for special rating treatment, subject to the criteria in the following paragraphs. The BCEGS factor applies, where applicable, in addition to the Public Protection Classification factors.

2. In some communities, two BCEGS classifications may be assigned. One classification for personal lines indicated next to "PERS" will apply to one- and two-family dwelling buildings and/or personal property contained in such buildings. The other classification indicated next to "COML" will apply to all other buildings occupied for residential, commercial and/or manufacturing purposes, including personal and business property contained therein. The ISO Community Mitigation Classifications will indicate the application of each grade.

3. Refer to the ISO Community Mitigation Classifications (CMC) Manual for the BCEGS classifications for a community and their effective dates.

B. Community Grading

1. The BCEGS classification applies to any building that has an original certificate of occupancy dated the year of the effective date of the community grading, or later. A rating factor has been developed for each community classification.

2. If a community is regraded subsequent to its initial grading, the factor for the revised grade applies to buildings that have an original certificate of occupancy dated the year of the effective date of the revised grading, or later.

3. Where certificates of occupancy are not issued, equivalent documentation acceptable to the company may be used.

4. If, due to an addition or alteration, the original building is changed to comply with the latest building code, the factor for the community classification applicable at the time the reconstruction is completed will apply to such building.

RULE 410.
BUILDING CODE EFFECTIVENESS GRADING (Cont'd)

5. The BCEGS classification may apply to Windstorm or Hail or Earthquake, or to both. Specific information is provided in the ISO Community Mitigation Classifications (CMC) Manual. If the grade in the manual does not apply to one of the perils, the factor should not be applied for that peril.

C. Individual Grading

Where buildings have been built in full conformance with the natural hazard mitigation elements of one of the nationally recognized building codes even though the community grade is greater than one, exception rating procedures may apply.

1. Any building may be classified as a 1 for Windstorm or Hail upon certification by a registered or licensed design professional, based on an on-site inspection, that such building is in compliance with one of the three nationally recognized building codes with respect to mitigation of the windstorm or hail hazard. This classification is effective only from the date of the certification.

2. Any building may be classified as a 1 for Earthquake upon certification by a registered or licensed design professional, based on an on-site inspection, that such building is in compliance with the earthquake mitigation elements of one of the three nationally recognized building codes. This classification is effective only from the date of the certification.

D. Ungraded Risks

Buildings which do **not** meet the criteria in Paragraph **B.** or **C.** for classification assignment are rated and coded as ungraded risks. Do not classify as a 10.

E. Premium Credit Computation

1. Community Grading

a. Windstorm Or Hail

Compute the premium credit as follows:

(1) For buildings which are eligible under Paragraph **B.** of this rule, and for personal property inside such buildings, multiply the Key Premium for Extended Coverage **(DP 00 01)** by the applicable factor in Paragraph **E.1.c.(1);** and

(2) Multiply the result from Paragraph **(1)** by the Key Factor for the desired amount of insurance.

b. Earthquake

When Earthquake Endorsement **DP 04 69** is attached to the policy, multiply the Earthquake Base Premium by the appropriate factor in Paragraph **E.1.c.(2)** located in the state exceptions.

c. Credit Factors

Refer to state exceptions for state-specific factors.

2. Individual Grading

For any building classified as a 1 based upon certification as set forth in Paragraph **C.,** use the appropriate factor listed under Paragraph **E.1.c.** located in the state exceptions.

RULES 411. – 499.
RESERVED FOR FUTURE USE

PART V
ADDITIONAL COVERAGES AND INCREASED LIMITS RULES

RULE 500.
MISCELLANEOUS LOSS COSTS

This rule is reserved to provide rates for various rating rules in this Manual. Refer to state company rates/ISO loss costs.

RULE 501.
COVERAGE B – OTHER STRUCTURES

A. Coverage Description

Coverage for other structures described as covered under Coverage **B** is automatically provided on a blanket basis for up to 10% of the Coverage **A** limit.

1. Under Form **DP 00 01,** use of this option reduces the Coverage **A** limit for the same loss.
2. Under Form **DP 00 02** or **DP 00 03,** this limit is additional insurance.

The blanket limit may not be increased.

No entry is needed in the policy Declarations for this coverage to apply.

B. Specific Structures Coverage

Coverage may be purchased for specific structures. Enter the limit of liability and description of each structure in the policy Declarations. Refer to Paragraph **C.** for premium computation instructions.

C. Premium Computation

1. Structure Rented To Others For Dwelling Purposes

Rate each structure separately as a Coverage **A** Dwelling, Non-Owner-Occupied under Rule **301.**

2. Structure Not Rented To Others For Dwelling Purposes

a. Policy includes Coverage **A** or structure does not have permitted incidental occupancy or is at same Described Location as the dwelling:

(1) Fire, Extended Coverage, Broad And Special Forms

Refer to the state company rates/ISO loss costs Rule **500.** Miscellaneous Rates.

(2) Vandalism And Malicious Mischief (DP 00 01)

Refer to the state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

b. Policy does not include Coverage **A** or structure has permitted incidental occupancy or is not at same Described Location as the dwelling:

(1) Fire, Extended Coverage, Broad And Special Forms

Rate each structure separately as a Coverage **A** item under Rule **301.** using the one Family Key Premium.

(2) Vandalism And Malicious Mischief (DP 00 01)

Refer to the state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

RULE 502.
COVERAGE D – FAIR RENTAL VALUE
COVERAGE E – ADDITIONAL LIVING EXPENSE

A. Introduction

Coverage is automatically provided in the forms on a limited basis as follows:

1. Form DP 00 01

a. Coverage D

Up to 20% of the Coverage **A** limit is available. Use of this option reduces the Coverage **A** limit for the same loss. No entry is needed in the policy Declarations for this coverage to apply.

b. Coverage E

Not automatically included in form. It may be added as noted in Paragraph **B.**

2. Form DP 00 02 Or DP 00 03

Coverage **D** and **E** combined – Up to 20% of the Coverage **A** limit is available for Coverage **D** and Coverage **E** combined as additional insurance. No entry is needed in the policy Declarations for this coverage to apply.

B. Coverage Description

Coverage may be increased or added as follows for all forms:

1. Coverage D

a. The amount recoverable each month under this coverage shall be based on the lost rental income less any expenses that do not continue during untenability.

b. Enter amount of increase in the policy Declarations.

c. For **DP 00 01,** the amount recoverable each month is limited to a fraction of the total rental value amount insured under the policy. This fraction is equal to one divided by the number of months dwelling is rented per year.

RULE 502.
COVERAGE D – FAIR RENTAL VALUE
COVERAGE E – ADDITIONAL LIVING EXPENSE (Cont'd)

DP 00 01 Example

Factors		
$10,000	=	Rental Value Coverage in Form (20% of Coverage **A** limit of $50,000)
+2,000	=	Additional Insurance (Shown under Coverage **D** in policy Declarations)
$12,000	=	Total Rental Value Amount Insured
Scenario A		
If dwelling is rented for entire year, then fraction = 1/12. $12,000 X 1/12 = Up to $1,000 available each month.		
Scenario B		
If dwelling is rented 8 months per year, then fraction = 1/8. $12,000 X 1/8 = Up to $1,500 available each month.		

Table 502.B.1.c. DP 00 01 Example

2. Coverage E

a. Enter initial limit **(DP 00 01)** or amount of increase **(DP 00 02** or **DP 00 03)** in policy Declarations.

b. For **DP 00 01,** the amount recoverable each month is limited to no more than 25% per month of the total additional living expense amount insured under the policy.

c. For **DP 00 01,** use Additional Living Expense Endorsement **DP 04 14.**

C. Premium Computation

1. Policy Includes Coverage A Or Coverage C

a. Fire, Extended Coverage, Broad And Special Forms

Refer to the state company rates/ISO loss costs Rule **500.** Miscellaneous Rates.

b. Vandalism And Malicious Mischief (DP 00 01)

Refer to the state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

2. Policy Does Not Include Coverage A Or Coverage C

a. Fire, Extended Coverage, Broad And Special Forms

(1) One To Four Family Dwelling

Multiply the Coverage **A** Key Premium by the Coverage **A** Key Factor, for:

(a) The Coverage **D** limit, times .53; or

(b) The Coverage **E** limit, times 1.00

(2) Five Or More Family Dwelling

Calculate the premium as instructed above using the Four Family Key Premium.

b. Vandalism And Malicious Mischief (DP 00 01)

Refer to the state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

RULE 503.
ORDINANCE OR LAW COVERAGE FOR COVERAGE B – SPECIFIC STRUCTURES, BUILDING ITEMS AND IMPROVEMENTS, ALTERATIONS AND ADDITIONS

A. Coverage Description

1. DP 00 01

The policy may be endorsed to add an amount of Ordinance or Law Coverage equal to the amounts noted in Paragraphs **1.** and **2.**

2. DP 00 02 Or DP 00 03

The basic 10% of coverage may be initially increased to the amounts noted in Paragraphs **A.2.a.** and **b.**

a. 50% of the total Coverage **B** or Unit-owner Building Items limit; or

b. 100% of the Improvements, Alterations and Additions limit.

B. Increased Limits

These amounts may be further increased in 25% increments.

C. Premium Determination

1. The premium for this additional coverage is determined based on the dollar amount of coverage added for **DP 00 01,** or the dollar amount of increase, represented by the increased percentage selected above the basic limit for **DP 00 02** or **DP 00 03.**

2. Multiply state company rates/ISO loss costs Rule **500.** Miscellaneous Rates by .30.

RULE 504. IMPROVEMENTS, ALTERATIONS AND ADDITIONS TENANT AND CO-OP UNIT-OWNER – DP 00 01 OR DP 00 02

A. Introduction

Named perils coverage is automatically provided in the forms for up to 10% of the Coverage **C** limit.

1. DP 00 01

Use of this option reduces the Coverage **C** limit for the same loss.

2. DP 00 02

This limit is additional insurance.

This limit may be increased for an additional premium.

B. Special Coverage

For Form **DP 00 02,** coverage may be extended to Special Coverage for an additional premium.

C. Stand Alone Coverage

Coverage may be written without Coverage **A, B, C, D** or **E.**

D. Premium Computation

1. Fire, Extended Coverage, Broad And Special Forms

a. If the policy includes Coverage **A, B, C, D** or **E,** refer to the state company rates/ISO loss costs Rule **500.** Miscellaneous Rates.

b. If the policy does not include Coverage **A, B, C, D** or **E,** multiply the Coverage **A.,** Four Family, Owner-occupied Key Premium (for the territory, protection and construction applying to the Described Location) by the Coverage **A** Key Factor for the amount of insurance desired.

2. Vandalism And Malicious Mischief (DP 00 01)

Refer to the state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

E. Endorsement

1. To provide Named Perils Coverage, use Improvements, Alterations And Additions Endorsement **DP 04 31.**

2. To provide Special Coverage, use Improvements, Alterations And Additions Endorsement **DP 04 31** and Special Coverage Endorsement **DP 04 65.**

RULE 505. BUILDING ITEMS CONDO UNIT-OWNER – DP 00 01 OR DP 00 02

A. Coverage Description

Unit-owners building items are not covered in the forms.

However, for an additional premium, coverage is available on a Named Perils or Special Coverage basis.

B. Stand Alone Coverage

Coverage may be written without Coverage **A, B, C, D** or **E.**

C. Premium Computation

1. Fire, Extended Coverage, Broad And Special Forms

a. If the policy includes Coverage **A, B, C, D** or **E,** refer to the state company rates/ISO loss costs Rule **500.** Miscellaneous Rates.

b. If the policy does not include Coverage **A, B, C, D** or **E,** multiply the Coverage **A.,** Four Family, Owner-Occupied Key Premium (for the territory, protection and construction applying to the Described Location) by the Coverage **A** Key Factor for the amount of insurance desired.

2. Vandalism And Malicious Mischief (DP 00 01)

Refer to the state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

D. Endorsement

1. To provide Named Perils Coverage, use Form **DP 00 01** or **DP 00 02** and Unit-owners Coverage Endorsement **DP 17 66.**

2. To provide Special Coverage, use Form **DP 00 02** and Unit-owners Coverage Endorsement **DP 17 66** and Special Coverage Endorsement **DP 04 65.**

RULE 506.
LOSS ASSESSMENT PROPERTY COVERAGE CO-OP OR CONDO UNIT-OWNER OR TENANT – DP 00 01 OR DP 00 02 DWELLING BUILDING OWNER – ALL FORMS

A. Coverage Description

1. Coverage for property loss assessment, for which the insured may be liable, is not included in the forms.

2. Coverage is available for an additional premium for all insured perils.

3. When coverage is desired for the peril of Earthquake, refer to Rule **509.C.** for policy writing and rating instructions.

B. Stand Alone Coverage

Coverage may be written without Coverage **A, B, C, D** or **E.**

C. Endorsement

Use Loss Assessment Property Coverage Endorsement **DP 04 63.**

D. Premium Computation

1. Fire, Extended Coverage, Broad And Special Forms

a. If the policy includes Coverage **A, B, C, D** or **E,** refer to the state company rates/ISO loss costs Rule **500.** Miscellaneous Rates.

b. If the policy does not include Coverage **A, B, C, D,** or **E,** multiply the Coverage **A.,** Four Family, Owner-Occupied Key Premium (for the territory, protection and construction applying to the described location) by the Coverage **A** Key Factor for the amount of insurance desired.

2. Vandalism And Malicious Mischief (DP 00 01)

Refer to the state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

RULE 507.
FIRE DEPARTMENT SERVICE CHARGE

The limit of $500 may be increased subject to the rules and rates of the company.

RULE 508.
TREES, SHRUBS AND OTHER PLANTS

A. Form DP 00 01

1. Coverage Description

Coverage for trees, shrubs and other plants is not provided in this form. However, for an additional premium, coverage is available for specified perils on two bases, with and without the peril of windstorm or hail. Coverage is limited to a $500 per item maximum.

Declare on the endorsement or elsewhere in the policy, as directed by the company, whether the peril of windstorm or hail applies.

2. Stand Alone Coverage

This coverage may be written without Coverage **A, B, C, D** or **E.**

3. Endorsement

Use Trees, Shrubs And Other Plants Endorsement **DP 04 17.**

B. Forms DP 00 02 Or DP 00 03

1. Coverage Description

Up to 5% of the Coverage **A** limit is available in the form (subject to a $500 per item maximum) for specified perils as additional insurance.

2. Windstorm Or Hail Coverage

Coverage for Windstorm or Hail is available up to 5% of Coverage **A** limit (subject to a $500 per item maximum) for an additional premium.

3. Endorsement

Use Windstorm Or Hail Endorsement **DP 04 18.**

RULE 508.
TREES, SHRUBS AND OTHER PLANTS (Cont'd)

C. Premium Computation

1. Fire, Extended Coverage, Broad And Special Forms

Refer to state company rates/ISO loss costs Rule **508.**

2. Vandalism And Malicious Mischief (DP 00 01)

Refer to state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

RULE 509.
EARTHQUAKE COVERAGE

A. Coverage Description

The policy may be endorsed to provide coverage against a loss resulting from the peril of Earthquake. This peril shall apply to all Property Coverages for the same limits provided in the policy. When added to the Fire policy, this peril shall apply to the same coverages and for the same limits that apply to the peril of Fire. Use Earthquake Endorsement **DP 04 69.**

B. Earthquake Only Coverage

When a policy is written to cover only the peril of Earthquake:

1. Use Form **DP 00 01** for Actual Cash Value Loss Settlement or **DP 00 02** for Replacement Cost;

2. Use Earthquake And Volcanic Eruption Endorsement **DP 16 13;** and

3. Multiply the rates in this rule by a **factor** of 1.10.

C. Loss Assessment Coverage

When the policy is extended to cover loss assessment resulting from loss by this peril, the limit of liability shall be based on the insured's proportionate interest in total value of all collectively owned buildings and structures of the corporation or association of property owners. Refer to company for rates. Use Loss Assessment Coverage For Earthquake Endorsement **DP 04 68.**

D. Deductible

Deductible percentage amounts of 5%, 10%, 15%, 20% and 25% of the limit of liability for Coverage **A** and Coverage **C** are included in this rule.

In the event of an Earthquake loss to covered property, the dollar amount is deducted from the total of the loss for Coverages **A, B** and **C.**

Earthquake rates/loss costs are displayed for the 5% and 10% deductible in the state company rates/ISO loss costs Rule **509.** Credit factors for deductible percentage amounts of 15%, 20% and 25% are provided in Paragraph **F.** Premium For Higher Deductibles of this rule.

E. Premium For Base Deductible

Develop the Base Premium as follows:

1. Determine whether Construction Table **A, B,** and/or **C** applies for the appropriate deductible. Refer to state company rates/ISO loss costs.

2. Determine the Earthquake territory according to the ZIP code of the residence premises from the State Territory Definitions section in this manual.

3. Add the results of the following three steps:

a. Multiply the Coverage **A** limit by the state company rates/ISO loss costs for Coverage **A** in the table;

b. Multiply the Coverage **C** limit by the state company rates/ISO loss costs for Coverage **C** in the table; and

c. Multiply the sum of the Additional Coverage **D** and **E** limits by the state company rates/ISO loss costs for Coverages **D** and **E** in the table.

4. For Building or Non-building Structure Items – All Forms:

Multiply the state company rates/ISO loss costs for Coverage **B** in the table by the appropriate limit of liability for the following Other Building Coverage options, as applicable, and add to the applicable premium determined in Paragraph **E.3.**

a. Coverage **B** – Specific Structures;

b. Improvements, Alterations and Additions – Increased Limits;

c. Building Items Coverage;

5. For Ordinance or Law – Basic and Increased Limit – All Forms:

When the basic Ordinance or Law Coverage limit is added or increased, the earthquake premium is developed based on the added or increased limit of insurance.

a. For Forms **DP 00 01, DP 00 02** and **DP 00 03,** multiply the rate determined in Paragraph **E.3.a.** by the appropriate factor selected from Rule **303.B.3.a.**

b. For Coverage **B** – Specific Structures, Improvements, Alterations and Additions and Building Items Coverage, the premium for this additional coverage is determined based on the dollar amount of added or increased coverage, represented by the increased percentage amount selected above the basic limit. The rate for each additional $1,000 of insurance is determined as follows: multiply the state company rates/ISO loss costs for Coverage **B** in the table by .30 and add to the applicable premium determined in Paragraph **E.**

RULE 509.
EARTHQUAKE COVERAGE (Cont'd)

F. Premium For Higher Deductibles

Multiply the Earthquake base premium determined in Paragraph **E.** for the 10% deductible by the appropriate factor from the following table:

Deductible Percentage	Frame	Masonry	Superior
15%	.80	.85	.75
20%	.65	.70	.60
25%	.50	.60	.45

Table 509.F. Higher Deductibles Factors

G. Building Code Effectiveness Grading

Refer to General Rule **410.** Building Code Effectiveness Grading for information which may affect Earthquake rating.

RULE 510.
THEFT COVERAGE

A. Introduction

A Fire policy insuring Coverage **A** or **C** may be extended, for an additional premium, to provide On and Off-Premises Coverage for the perils of Theft and Vandalism and Malicious Mischief (V.&M.M.) resulting from theft.

1. Owner-Occupied Dwellings, Co-Op Or Condo Units; And Apartments Occupied By Tenant (Named Insured)

a. Coverage Description

The policy may be extended to provide On or Off-Premises Coverage.

b. Minimum Limit Of Liability

The minimum limit of liability is $1,000 each for On and Off-Premises Coverage.

c. Off-Premises Coverage

Off-Premises Coverage is **only** available when On-Premises Coverage is purchased.

The limit of liability shall not be greater than that selected for On-Premises Coverage.

d. Endorsement

Use Broad Theft Coverage Endorsement **DP 04 72.**

2. Non-Owner-Occupied Dwellings, Co-op Or Condo Units; And Apartments Occupied By Tenant (Other Than Named Insured)

a. Coverage Description

The policy may be extended to provide On-Premises Coverage **only.**

b. Limit Of Liability

The minimum limit of liability is $1,000.

c. Endorsement

Use Limited Theft Coverage Endorsement **DP 04 73.**

B. Premium Computation

Refer to state company rates/ISO loss costs for the Base Deductible.

Compute the premiums separately for each premises in the manner and sequence that follows:

1. Theft And Vandalism And Malicious Mischief

a. Owner-Occupied Dwellings

Compute the premiums for the desired limit of liability separately for On and Off-Premises Coverage.

b. Non-Owner-Occupied Dwellings, (On-Premises Only)

Multiply the On-Premises premium computed above by a factor of 1.50.

2. Burglar Alarm Discount (On-Premises Only)

a. Approved and properly maintained installations of burglar alarms in the dwelling may be recognized for a reduced premium – developed by applying the selected factors to the premiums computed in Paragraph **B.1.a.** or **B.1.b.**

Type Of Installation*	Factor
Central Station Reporting Burglar Alarm	.95 to 1.00
Police Station Reporting Burglar Alarm	.97 to 1.00
Local Burglar Alarm	.98
* Refer to company for eligibility, types of systems and devices, installations and available credits.	

Table 510.B.2.a. Factors

b. Use Premises Alarm Or Fire Protection System Endorsement **DP 04 70.**

C. Deductibles

1. Base Deductible

$500 Deductible.

RULE 510.
THEFT COVERAGE (Cont'd)

2. Optional Deductibles

To compute the premium for this provision, multiply the premium for the Base Deductible computed in Paragraph **B.1.** by the factor listed in the following table:

Deductible*	Factor
$ 100	1.26
$ 250	1.05
$ 1,000	.84
$ 2,500	.68

* Refer to the state company rates pages for the minimum annual additional premium charge that applies per policy.

Table 510.C.2 Factors

RULE 511.
SINKHOLE COLLAPSE COVERAGE

A. Coverage Description

The policy may be endorsed to provide Sinkhole Collapse Coverage.

B. Premium Computation

1. Refer to state company rates/ISO loss costs; and

2. Multiply the rate per $1,000 by:

a. Coverage **A, B** and/or **C** amounts of insurance;

b. Improvements, Alterations and Additions – Increased Limits;

c. Other Building or Structure Options (for example, Bldg. Items Coverage);

d. Other Personal Property Coverage Options (for example, Merchandise in Storage); or

e. Ordinance or Law Coverage, basic amount and, if applicable, increased amount of coverage.

C. Endorsement

Use Sinkhole Collapse Endorsement **DP 04 99.**

RULE 512.
WINDSTORM OR HAIL COVERAGE – AWNINGS, SIGNS AND OUTDOOR RADIO AND TELEVISION EQUIPMENT

A. Coverage Description

The peril of Windstorm or Hail does **not** cover:

1. Awnings, Signs and Outdoor Radio and Television Equipment in **DP 00 01** or **DP 00 02;**

2. Outdoor Radio and Television Equipment in **DP 00 03;**

whether or not attached to a Dwelling Building or Other Structure.

B. Premium Computation

Coverage may be provided for an additional premium. Refer to the state company rates/ISO loss costs.

C. Endorsement

Use Windstorm Or Hail – Radio And Television Antennas, Awnings And Signs Endorsement **DP 04 19.**

RULE 513.
LIMITED WATER BACK-UP AND SUMP DISCHARGE OR OVERFLOW COVERAGE

A. Coverage Description

The policy forms exclude coverage for loss resulting from water or waterborne material which backs up through sewers or drains or which overflows or is discharged from a sump, sump pump or related equipment.

When the optional Limited Water Back-up And Sump Discharge Or Overflow Coverage endorsement is attached to the policy, coverage is provided with respect to direct physical loss, not caused by the negligence of an insured, to property covered, caused by water or waterborne material which originates from within the dwelling on the Described Location and backs up through sewers or drains or which overflows or is discharged from a sump, sump pump or related equipment. The basic limit is $5,000. Unless increased limits are selected, the basic limit must be entered on the coverage endorsement or the policy Declarations.

B. Increased Limits

The limit may be increased to $10,000, $15,000, $20,000 or $25,000. The limit selected is entered on the coverage endorsement or the policy Declarations.

C. Premium Computation

Refer to state company rates/ISO loss costs.

D. Endorsement

Use Limited Water Back-up And Sump Discharge Or Overflow Coverage Endorsement **DP 04 95.**

RULE 514.
ASSISTED LIVING CARE COVERAGE

A. Introduction

The policy provides coverage to named insureds and resident relatives who are members of the insured's household.

B. Coverage Description

1. The policy may be endorsed to provide personal property and additional living expense coverage to a person regularly residing in an Assisted Living Care facility, provided such person:

a. Is related to an insured by blood, marriage or adoption; and

b. Is not a member of that insured's household.

2. An assisted living care facility is a facility that provides assisted living services such as dining, therapy, medical supervision, housekeeping and social activities. It is **not** a hospice, prison or rehabilitation facility.

3. The endorsement provides the following basic limits of coverage:

a. $10,000 for Coverage **C** – Personal Property with limitations ranging from $100 to $500 for certain items of property; and

b. $6,000, at $500 per month, for Additional Living Expenses.

C. Premium

Refer to state company rates/ISO loss costs.

D. Endorsement

Use Assisted Living Care Coverage Endorsement **DP 04 59.**

RULE 515.
MOTORIZED GOLF CART – PHYSICAL LOSS COVERAGE

A. Coverage Description

The policy may be endorsed to provide coverage for physical loss to a motorized golf cart, including permanently installed accessories, equipment and parts, owned by an insured.

Also covered, for an amount equal to 10% of the limit of the highest scheduled cart, are accessories, equipment or parts designed or made solely for the cart that are **not** permanently installed provided such property is at the Described Location or in or upon the cart off the Described Location at the time of loss.

Coverage for loss caused by collision is optional and only applies if declared on the schedule of the endorsement.

B. Eligibility

To be eligible for coverage, the motorized golf cart shall be of the type designed to carry up to four people on a golf course for the purpose of playing golf and shall not have been built, or modified after manufacture, to exceed a speed of 25 m.p.h. on level ground.

Read the endorsement for all conditions of coverage.

C. Limit Of Liability

The limit of liability shall be selected by the insured. However, that limit should be representative of the actual cash value of the motorized golf cart including any permanently installed accessories, etc.

D. Deductible

A $500 deductible replaces any other deductible in the policy with respect to any one loss covered under the endorsement.

E. Premium Computation

Rate each cart separately using the rate per $500 of insurance. Refer to state company rates/ISO loss costs.

F. Endorsement

Use Owned Motorized Golf Cart – Physical Loss Coverage Endorsement **DP 05 28.**

RULE 516.
GRAVEMARKERS

A. Coverage Description

Coverage for gravemarkers, including mausoleums, is not included in the forms. The policy may be endorsed to provide $5,000 in coverage for gravemarkers, including mausoleums, on the Described Location.

B. Premium Computation

1. Fire, Extended Coverage, Broad And Special Forms

Refer to the state company rates/ISO loss costs Rule **500.** Miscellaneous Rates.

2. Vandalism And Malicious Mischief (DP 00 01)

Refer to the state company rates/ISO loss costs Rule **302.** Vandalism And Malicious Mischief.

C. Endorsement

Use Gravemarkers Endorsement **DP 04 58.**

RULE 517.
LIMITED FUNGI, WET OR DRY ROT, OR BACTERIA COVERAGE

A. Coverage Description

When the optional Limited Fungi, Wet Or Dry Rot, Or Bacteria Coverage Endorsement is attached to the policy, limited amounts of insurance are automatically provided as follows:

$10,000, on an aggregate basis, to pay for loss and associated costs to covered real or personal property, owned by an insured, that is damaged by fungi, wet or dry rot, or bacteria on the Described Location as defined in the coverage endorsement. If the basic limit is selected, it is entered on the coverage endorsement or the policy Declarations.

This Coverage applies only for the policy period in which the loss or costs occur.

If more than one location is insured under this policy, enter the address of such locations on this endorsement or the policy Declarations.

B. Increased Limits

Limits may be increased to $25,000 or $50,000. The limit selected is entered on the coverage endorsement or the policy Declarations.

C. Premium Computation

1. Basic Limits

There is no premium adjustment.

2. Increased Limits

Refer to state company rates/ISO loss costs for an additional charge.

D. Endorsement

Use Limited Fungi, Wet Or Dry Rot, Or Bacteria Coverage Endorsement **DP 04 22.**

RULES 518. – 600.
RESERVED FOR FUTURE USE

ISO

Notice to Manualholders

PERSONAL LINES
DWELLING POLICY PROGRAM MANUAL – NORTH CAROLINA RULES
NOTICE DP-NC-2020-RU-002

REFERENCE INFORMATION (FOR COMPANY USE ONLY)

Circular Reference(s):

- P-19-8 (12/09/2019) Revised Dwelling Fire and Extended Coverage Insurance Rates – North Carolina

Filing Reference(s):

- NCRI-132047825 (Bureau)

INSURANCE SERVICES OFFICE, INC.
545 Washington Boulevard, Jersey City, NJ 07310-1686

ADDITIONAL RULE(S)

RULE A1.
SPECIAL STATE REQUIREMENTS

A. Special Provisions Endorsement DP 32 32

Use this endorsement with all Dwelling Policies.

B. Windstorm Exterior Paint And Waterproofing Exclusion Endorsement DP 32 61

Use this endorsement with **all** Dwelling Policies covering Extended Coverage in Territories 110 and 120.

C. Company Rates/State Rates

References in the manual to "state company rates" means "state rates" in North Carolina.

D. Flood, Earthquake, Mudslide, Mudflow, Landslide, Or Windstorm Or Hail Insurance Notice

North Carolina law provides that an insurer selling property insurance that does not provide coverage for the perils of flood, earthquake, mudslide, mudflow, landslide, or windstorm or hail shall provide a specific notice (a "warning" set forth in the related statute) to the policyholder as to which of the listed perils are not covered under the policy.

The required notice must be:

1. Provided upon issuance and renewal of each policy;

2. In Times New Roman 16-point font or another equivalent font; and

3. Must be included in the policy on a separate page immediately before the Declarations page.

The following warning, citing which peril is not covered, must be furnished with each new policy and upon each renewal:

"WARNING: THIS PROPERTY INSURANCE POLICY DOES NOT PROTECT YOU AGAINST LOSSES FROM [FLOODS], [EARTHQUAKES], [MUDSLIDES], [MUDFLOWS], [LANDSLIDES], [WINDSTORM OR HAIL]. YOU SHOULD CONTACT YOUR INSURANCE COMPANY OR AGENT TO DISCUSS YOUR OPTIONS FOR OBTAINING COVERAGE FOR THESE LOSSES. THIS IS NOT A COMPLETE LISTING OF ALL OF THE CAUSES OF LOSSES NOT COVERED UNDER YOUR POLICY. YOU SHOULD READ YOUR ENTIRE POLICY TO UNDERSTAND WHAT IS COVERED AND WHAT IS NOT COVERED."

E. North Carolina Endorsement DP 32 46

Use this endorsement with all Dwelling Policies.

RULE A2.
RESTRICTION OF INDIVIDUAL POLICIES

If a Dwelling Policy would not be issued because of unusual circumstances or exposures, the named insured may request a restriction of the policy provided no reduction in premium is allowed. Such request shall be referred to the company.

RULE A3.
WINDSTORM OR HAIL EXCLUSION – TERRITORIES 110, 120, 130, 140, 150 AND 160 ONLY

A. Introduction

The peril of Windstorm or Hail may be excluded if:

1. The property is located in an area eligible for such coverage from the North Carolina Insurance Underwriting Association; and

2. A Windstorm or Hail Rejection Form is secured and maintained by the company.

B. Premium Computation

1. To compute the Extended Coverage Non-seasonal or Seasonal Base Premium or the Broad or Special Form Non-seasonal Base Premium:

(a) Determine the Extended Coverage, Broad or Special Form Key Premium as described in Rule **301.**

(b) Subtract the Windstorm Or Hail Exclusion Credit shown on the state rates from the Extended Coverage, Broad or Special Form Key Premium.

(c) Multiply the Extended Coverage, Broad or Special Form Key Premium excluding Windstorm or Hail Coverage developed in Paragraph **B.1.(b)** by the Key Factor for the desired limit of liability.

2. To compute the Seasonal Broad or Special Form Base Premium:

(a) Determine the **DP 00 01** Extended Coverage Key Premium as described in Rule **301.**

(b) Multiply the **DP 00 01** Extended Coverage Key Premium by the appropriate Seasonal factor shown in Table **301.A.#42(R)** or Table **301.A.#45(R)** to determine the Seasonal Broad or Special Form Key Premium.

(c) Subtract the Windstorm Or Hail Exclusion Base Credit shown on the state rates from the Seasonal Broad or Special Form Key Premium determined in Paragraph **B.2.(b).**

(d) Multiply the Seasonal Broad or Special Form Key Premium excluding Windstorm Or Hail Coverage developed in Paragraph **B.2.(c)** by the Key Factor for the desired limit of liability.

RULE A3.
WINDSTORM OR HAIL EXCLUSION – TERRITORIES 110, 120, 130, 140, 150 AND 160 ONLY (Cont'd)

C. Endorsement

Use Windstorm Or Hail Exclusion – North Carolina Endorsement **DP 32 87.**

When Windstorm Or Hail Exclusion – North Carolina Endorsement **DP 32 87** is attached to the policy, enter the following in Declarations:

"This policy does not provide coverage for the peril of Windstorm or Hail."

RULE A4.
REPLACEMENT COST COVERAGE – DP 00 01 ONLY

A. The policy may be endorsed to provide replacement cost coverage on buildings without deduction for depreciation.

B. This rule is intended to have limited application. Use it **only** on those **DP 00 01** policies that currently use it. Do **not** use it on any new policies.

Use Replacement Cost – North Carolina Endorsement **DP 32 62.**

RULE A5.
INSTALLMENT PAYMENT PLAN

When an annual policy is issued on an installment basis, the following rules apply:

A. The first installment shall be due on the effective date of the policy and the due date of the last installment shall be no later than one month prior to the policy anniversary date.

B. The premium calculated for the first installment payment, exclusive of installment charges, shall not be less than the pro rata charge for the period from the inception date of the policy to the due date of the next installment.

C. Refer to the state rates for the additional charge that shall be made for each installment.

RULE A6.
UNPROTECTED DWELLINGS – PROTECTION CLASS 9, 9E, 9S OR 10

A. Unprotected Dwellings

Unprotected dwellings are dwellings located in areas:

1. With no fire protection, in which case, Class 10 premiums apply; or

2. Designated as protection Class 9, 9E, 9S or 10, in which case, the premiums shown for these classifications apply.

B. Seasonal Dwelling

1. When the heating, plumbing and telephone facilities are suspended during the period of seasonal unoccupancy, attach Seasonal Dwelling – North Carolina Endorsement **DP 32 47** to the policy.

2. To determine the premium, multiply the premium developed in Paragraph **A.** by a factor of 1.10.

C. Vacancy Period Extension

The policy provides coverage for a vacant dwelling only if the period of vacancy does not exceed 60 consecutive days. This period may be extended by use of one of the two following options:

1. Vacancy And/Or Unoccupancy Permit Unprotected Dwellings – North Carolina Endorsement **DP 32 52**

The additional premium for this option shall be the lower of the following calculations:

a. Multiply the limits of liability shown in the policy for Coverages **A, B** and **C** and for other coverages by the rate displayed on the state rates Table **A6.C.1.a.(R).**

b. Multiply the policy premium for all perils and coverages by a factor of .10 for each additional 30 consecutive day period (or fraction thereof) of vacancy.

2. Two Thirds Vacancy Clause Unprotected Dwellings – North Carolina Endorsement **DP 32 53**

There is no additional premium for this option, but, during the additional period of vacancy, policy limits are reduced by 33 1/3%.

D. Unoccupancy Period Extension

The policy provides coverage for an unoccupied dwelling only if the period of unoccupancy does not exceed 90 consecutive days. This period may be extended – at no additional charge – for successive periods of up to:

1. 90 consecutive days each, for non-seasonal dwellings, or

2. 10 months each, for seasonal dwellings.

Use Vacancy And/Or Unoccupancy Permit – Unprotected Dwellings – North Carolina Endorsement **DP 32 52.**

RULE A7.
PRIMARY INSURANCE NOTICE

A. Endorsement

Coverage	DP 00 01	DP 00 02 And DP 00 03
A	DP 32 80	DP 32 83
B	DP 32 81	DP 32 84
C	DP 32 82	DP 32 85

Table A7.A. Primary Insurance Notice

Use the appropriate Primary Insurance Endorsement(s), specified in Table **A7.A.,** only with a North Carolina Joint Underwriting Association (NCJUA) or North Carolina Insurance Underwriting Association (NCIUA) policy insuring a dwelling building covered under Coverage **A,** structures covered under Coverage **B** or personal property covered under Coverage **C.**

These endorsements replace the Other Insurance Condition in the policy form and make the NCJUA or NCIUA policy primary insurance for the insured property specified on the endorsement. Primary Insurance may be written for Coverages **A, B** and/or **C.** When a Primary Insurance Endorsement is not attached to the policy, the Other Insurance Condition in the policy form is unchanged.

B. Rating

1. Primary Insurance

a. When the Coverage **A, B** or **C** Limit of Liability is less than 100% of actual cash value or replacement value, divide the selected limit by the ACV or replacement value, whichever applies. The result is the "Percent of Total Value".

b. Go to the First Loss Table and select the factor that corresponds to the "Percent of Total Value" computed in Paragraph **1.a.**

c. Multiply the total value of the dwelling (actual or replacement) by the factor selected in Paragraph **1.b.**

d. Use the resulting product as the limit for computing the Coverage **A, B** or **C** premium.

2. Coverage A Example

Replacement Value of Dwelling: $6,000,000

Primary Policy – Coverage **A** Limit: $1,500,000

a. Divide Coverage **A** Limit by Replacement Value limit ($1,500,000/$6,000,000 = 25% or 25.00 Percent of Total Value).

b. Find Factor that corresponds to Percent of Total Value.

c. Multiply Replacement Value by Factor from Column **2** ($6,000,000)(.712) = $4,272,000.

d. Use resulting product to compute Coverage **A** premium. (Rate the policy as if $4,272,000 is the Coverage **A** limit to be insured.)

Note

This procedure is used to determine the appropriate exposure basis for primary insurance. It does not increase the amount of coverage available.

RULE A7.
PRIMARY INSURANCE NOTICE Cont'd)

FIRST LOSS TABLE

(Used When Primary Coverage Provided)

% Of Total Value	Factor
1.00	.224
1.10	.229
1.20	.235
1.30	.241
1.40	.247
1.50	.252
1.60	.258
1.70	.264
1.80	.270
1.90	.275
2.00	.281
2.10	.284
2.20	.287
2.30	.290
2.40	.293
2.50	.296
2.60	.298
2.70	.301
2.80	.304
2.90	.307
3.00	.310
3.10	.316
3.20	.321
3.30	.327
3.40	.333
3.50	.339
3.60	.344
3.70	.350
3.80	.356
3.90	.362
4.00	.367
4.10	.373
4.20	.379
4.30	.385
4.40	.390
4.50	.396
4.60	.402
4.70	.408
4.80	.413
4.90	.419
5.00	.425
6.00	.448
7.00	.471
7.50	.482
8.00	.494
9.00	.517

% Of Total Value	Factor
10.00	.540
11.00	.551
12.00	.563
13.00	.574
14.00	.586
15.00	.597
16.00	.609
17.00	.620
18.00	.632
19.00	.643
20.00	.655
21.00	.660
22.00	.678
23.00	.689
24.00	.701
25.00	.712
26.00	.720
27.00	.721
28.00	.734
29.00	.741
30.00	.748
31.00	.756
32.00	.763
33.00	.770
34.00	.773
35.00	.776
36.00	.780
37.00	.784
38.00	.788
39.00	.792
40.00	.795
41.00	.799
42.00	.802
43.00	.804
44.00	.808
45.00	.811
46.00	.815
47.00	.818
48.00	.821
49.00	.824
50.00	.827
51.00	.830
52.00	.832
53.00	.834
54.00	.837
55.00	.839

% Of Total Value	Factor
56.00	.841
57.00	.844
58.00	.846
59.00	.848
60.00	.850
61.00	.853
62.00	.855
63.00	.857
64.00	.860
65.00	.862
66.00	.864
67.00	.867
68.00	.869
69.00	.871
70.00	.873
71.00	.876
72.00	.878
73.00	.880
74.00	.883
75.00	.885
76.00	.890
77.00	.894
78.00	.899
79.00	.903
80.00	.908
81.00	.913
82.00	.917
83.00	.922
84.00	.926
85.00	.931
86.00	.936
87.00	.940
88.00	.945
89.00	.949
90.00	.954
91.00	.959
92.00	.963
93.00	.968
94.00	.972
95.00	.977
96.00	.982
97.00	.986
98.00	.991
99.00	.995
100.00	1.000

RULE A8.
OPTIONAL RATING CHARACTERISTICS

Companies may use the following optional rating characteristics or any combination of such optional rating characteristics and Bureau filed characteristics to determine rates, as long as applicable legal requirements are satisfied. The resulting premium shall not exceed the premium that would have been determined using the rates, rating plans, classifications, schedules, rules and standards promulgated by the Bureau, except as provided by statute. The rating factor for any combination of the following optional risk characteristics cannot exceed 1.00, unless the resulting premium does not exceed the Bureau premium.

A. Policy characteristics not otherwise recognized in this manual. Examples include: account or multi-policy credit; tiers; continuity of coverage; coverages purchased; intra-agency transfers; payment history; payment options; prior insurance; and new and renewal status.

B. Policyholder/Insured personal characteristics not otherwise recognized in this manual. Examples include: smoker/non-smoker status; credit information; loss history; loss prevention training/education; age; work status; marital status; number of years owned; household composition; and good student/education.

C. Dwelling characteristics not otherwise recognized in this manual. Examples include: gated community; retirement community; limited access community; revitalized/renovated home; security, safety or loss deterrent systems or devices; age of home; and construction type and quality.

D. Affinity group or other group not otherwise recognized in this manual.

E. Any other rating characteristics or combination of characteristics if filed by a company and approved by the Commissioner.

RULE A9.
WINDSTORM MITIGATION PROGRAM

A. Introduction

With respect to risks located in Territories 110, 120, 130, 140, 150 and 160, premium credits shall be made available for insureds who build, rebuild or retrofit certain residential dwellings, in accordance with specified standards, to better resist hurricanes and other catastrophic windstorm events.

B. Eligibility

1. A dwelling may be eligible for a premium credit if:

a. The dwelling has been designed and constructed in conformity with, and has been certified as meeting, the Hurricane, Tornado and Hail and High Wind requirements of the Hurricane Fortified for Safer Living® (Fortified) program promulgated by the Institute for Business and Home Safety® (IBHS) prior to March 31, 2019;

b. The dwelling has been certified as meeting, either the Bronze, Silver or Gold hurricane mitigation measures in the Hurricane Fortified for Existing Homes® program promulgated by the IBHS prior to March 31, 2019;

c. The dwelling has been designed and constructed in conformity with, and has been certified as meeting, the Hurricane, Tornado and Hail and High Wind requirements of the FORTIFIED for Safer Living® program promulgated by the IBHS for use on or after March 31, 2019;

d. The dwelling has been certified as meeting either the Roof, Silver or Gold hurricane mitigation measures in the FORTIFIED Home™ program promulgated by the IBHS for use on or after March 31, 2019;

e. The dwelling contains Opening Protection in accordance with the qualification requirements set forth in Paragraph **D.1.c.;** or

f. The dwelling contains a Total Hip Roof.

2. The provisions of this rule do not apply:

a. To condominiums or tenant policies.

b. If the policy excludes the peril of Windstorm or Hail.

c. To dwellings under construction.

d. To Coverage **C** – Personal Property unless the policy also provides Coverage **A** – Dwelling.

e. To mobile homes certified under the Hurricane Fortified for Safer Living® or Hurricane Fortified for Existing Homes® programs promulgated by the IBHS prior to March 31, 2019.

RULE A9.
WINDSTORM MITIGATION PROGRAM (Cont'd)

3. To be eligible for a premium credit, mitigation features are not required for adjacent structures including, but not limited to, detached garages, storage sheds, barns, apartments, etc. located on the insured premises.

C. Proof of Compliance

The named insured must submit proof that the windstorm loss mitigation features and/or construction techniques have been implemented for each of the following:

1. IBHS Hurricane Fortified for Safer Living®

The named insured shall provide a copy of the proper designation certificate from the IBHS issued for the dwelling.

2. IBHS Hurricane Fortified for Existing Homes®

The named insured shall provide a copy of the proper designation certificate from the IBHS issued for the dwelling. The credit will apply for five years from the date of designation. In order to continue receiving the mitigation credit after five years, the dwelling must be re-inspected and re-designated by the IBHS. If the IBHS designation expires, the applicable mitigation credit will expire upon renewal.

3. IBHS FORTIFIED for Safer Living®

The named insured shall provide a copy of the proper designation certificate from the IBHS issued for the dwelling.

4. IBHS FORTIFIED Home™

The named insured shall provide a copy of the proper designation certificate from the IBHS issued for the dwelling. The credit will apply for five years from the date of designation. In order to continue receiving the mitigation credit after five years, the dwelling must be re-inspected and re-designated by the IBHS. If the IBHS designation expires, the applicable mitigation credit will expire upon renewal.

5. Opening Protection

The existence of Opening Protection may be verified by proof of installation.

6. Total Hip Roof

The existence of a hip roof may be verified through photographs of the roof.

D. Description of Mitigation Credit Tables

With respect to dwellings to which this rule applies and subject to all other provisions of this Windstorm Mitigation Program, the following approved and properly maintained windstorm mitigation features shall be recognized for a premium credit.

1. Mitigation Features

a. IBHS Hurricane Fortified Homes (designations prior to March 31, 2019):

(1) A home designated by the IBHS as Hurricane Fortified for Safer Living®.

(2) A home designated by the IBHS as Hurricane Fortified for Existing Homes®, including:

(i) Hurricane Fortified for Existing Homes Bronze, Option 1

(ii) Hurricane Fortified for Existing Homes Bronze, Option 2

(iii) Hurricane Fortified for Existing Homes Silver, Option 1

(iv) Hurricane Fortified for Existing Homes Silver, Option 2

(v) Hurricane Fortified for Existing Homes Gold, Option 1

(vi) Hurricane Fortified for Existing Homes Gold, Option 2

b. IBHS FORTIFIED programs (designations on or after March 31, 2019):

(1) A home designated by the IBHS as FORTIFIED for Safer Living®.

(2) A home designated by the IBHS as FORTIFIED Home™, including:

(i) FORTIFIED Roof – Hurricane – Existing Roof

(ii) FORTIFIED Roof – Hurricane – New Roof

(iii) FORTIFIED Home – Hurricane – Silver – Existing Roof

(iv) FORTIFIED Home – Hurricane – Silver – New Roof

(v) FORTIFIED Home – Hurricane – Gold – Existing Roof

(vi) FORTIFIED Home – Hurricane – Gold – New Roof

c. Opening Protection

(1) Building opening protective features must have been certified as having met the Large Missile Test (Missile D) of the American Society for Testing and Materials ASTM E 1886 (standard test method) and ASTM E 1996 (standard specification) or other standards that are determined to be equivalent, including the American Architectural Manufacturers Association (AAMA), AAMA 506 or the Florida Building Code Testing Application Standards TAS 201 and 203. Such opening protective features shall be considered qualified.

RULE A9.
WINDSTORM MITIGATION PROGRAM (Cont'd)

(2) Qualifying opening protection must be present at all exterior envelope openings (such as windows, garage doors, sliding doors, swinging doors, glass block, door sidelights, and skylights) on the dwelling structure. For the credit to apply, the following conditions must be met:

(i) In accordance with the qualification requirements set forth in Paragraph **D.1.c.(1):**

(a) All exterior building envelope openings with glazing (e.g. glass) shall have qualified impact-resistant and wind pressure-resistant opening protection;

(b) All exterior building envelope openings without glazing shall have qualified wind pressure-resistant opening protection; and

(c) All garage doors (with and without glazing) shall meet or exceed a qualified minimum pressure resistance.

(ii) Opening protection must be installed by a qualified contractor, according to the manufacturer's specifications.

(iii) Impact-resistant protective devices must not be made of wood structural panels, such as OSB or plywood, or be homemade.

d. Total Hip Roof

A Total Hip Roof is a roof that slopes in four directions such that the end formed by the intersection of slopes is a triangle.

E. Premium Determination

1. To compute the Extended Coverage Non-seasonal or Seasonal Base Premium or the Broad or Special Form Non-seasonal Base Premium:

a. Determine the Extended Coverage, Broad or Special Form Key Premium as described in Rule **301.**

b. Subtract the Coverage **A** Windstorm Loss Mitigation Credit shown on the state rates from the Coverage **A** Extended Coverage, Broad or Special Form Key Premium. If applicable, also subtract the Coverage **C** Windstorm Loss Mitigation Credit, shown on the state rates from the Coverage **C** Extended Coverage, Broad or Special Form Key Premium.

c. Multiply the Extended Coverage, Broad or Special Form Key Premium excluding Windstorm Loss Mitigation Coverage developed in Paragraph **E.1.b.** by the Key Factor for the desired limit of liability.

2. To compute the Seasonal Broad or Special Form Base Premium:

a. Determine the **DP 00 01** Extended Coverage Key Premium as described in Rule **301.**

b. Multiply the **DP 00 01** Extended Coverage Key Premium by the appropriate Seasonal factor shown in Table **301.A.#42(R)** or Table **301.A.#45(R)** to determine the Seasonal Broad or Special Form Key Premium.

c. Subtract the Coverage **A** Windstorm Loss Mitigation Credit shown in the state rates from the Coverage **A** Seasonal Broad or Special Form Key Premium determined in Paragraph **E.2.b.** If applicable, also subtract the Coverage **C** Windstorm Loss Mitigation Credit, shown on the state rates from the Coverage **C** Seasonal Broad or Special Form Key Premium.

d. Multiply the Seasonal Broad or Special Form Key Premium excluding Windstorm Loss Mitigation Coverage developed in Paragraph **E.2.c.** by the Key Factor for the desired limit of liability.

3. Mitigation Feature credits cannot be combined, except for Total Hip Roof and Opening Protection.

4. If mitigation measures are installed midterm, premium adjustment is required on a pro rata basis.

PART I
COVERAGE AND DEFINITION TYPE RULES

RULE 100.
INTRODUCTION

Paragraph **C.** does not apply.

RULE 103.
ELIGIBILITY

Paragraphs **B.1** and **B.4.** are replaced by the following:

1. Using Form **DP 00 01** only or **DP 00 02** in conjunction with Actual Cash Value Loss Settlement Endorsement **DP 04 76;**

4. For a policy period of not longer than three years; and

PART II
SERVICING TYPE RULES

RULE 201.
POLICY PERIOD

Paragraph **C.** is replaced by the following:

C. Three years in annual installments. Each annual installment shall be the annual premium then in effect for the company.

RULE 206.
MINIMUM PREMIUM

Paragraphs **D.** and **E.** are replaced by the following:

D. Refer to state company rates for the minimum premium.

RULE 208.
WAIVER OF PREMIUM

Paragraph **B.** is replaced by the following:

B. Refer to state company rates for amount that may be waived.

RULE 210.
REFER TO COMPANY

Rule **210.** is replaced by the following:

Whenever a risk is rated on a refer to company basis each company is responsible for complying with regulatory or statutory rate filing requirements.

PART III
BASE PREMIUM COMPUTATION RULES

RULE 302.
VANDALISM AND MALICIOUS MISCHIEF – DP 00 01

The following is added to Rule **302.:**

The 60 day limit of vacancy may be extended. The charge for the additional period of vacancy shall be based on the difference between the premiums for vacant and non-vacant buildings, and shall be figured pro rata for the period allowed in the endorsement.

Use Vandalism And Malicious Mischief Vacancy Endorsement **DP 04 40.**

RULE 303.
ORDINANCE OR LAW COVERAGE – ALL FORMS

Paragraph **B.3.a.** is replaced by the following:

B. New Or Increased Coverage

3. Premium Determination

a. Described Location Including Coverage A

(1) Form DP 00 01

(a) Fire And Extended Coverage

The premium is computed by multiplying the Base Premium by the appropriate factor selected from the following table:

Percentage Of Coverage A	
Total Amount	**Factors**
10%	1.10
25%	1.25
50%	1.45
75%	1.70
100%	1.90
For each add'l 25% increment, add:	.20

Table 303.B.3.a.(1)(a) Factors

(b) Vandalism And Malicious Mischief

Multiply the rate per $1,000 used to determine the Vandalism and Malicious Mischief Base Premium, by the dollar amount of coverage added.

RULE 303.
ORDINANCE OR LAW COVERAGE – ALL FORMS
(Cont'd)

(2) DP 00 02 Or DP 00 03 – Fire, Broad Or Special Forms

The premium is computed by multiplying the Base Premium by the appropriate factor selected from the following table:

Percentage Of Coverage A		
Increase In Amount	**Total Amount**	**Factors**
15%	25%	1.15
40%	50%	1.35
65%	75%	1.60
90%	100%	1.80
For each add'l 25% increment, add		.20

Table 303.B.3.a.(2) Factors

RULE 305.
LOSS SETTLEMENT OPTIONS

Paragraph **A.4.** is replaced by the following:

A. Functional Replacement Cost Loss Settlement – Forms DP 00 02 And DP 00 03 Only

4. Endorsement

Use Functional Replacement Cost Loss Settlement – North Carolina Endorsement **DP 32 63.**

Paragraph **B.** is replaced by the following:

B. Actual Cash Value Loss Settlement – Forms DP 00 02 And DP 00 03 Only

1. Introduction

The policy provides building loss settlement on a replacement cost basis if, at the time of loss, the amount of insurance on the damaged building represents at least 80% of the full replacement cost of the building immediately before the loss.

2. Coverage Description

The policy may be endorsed to provide building loss settlement exclusively on an actual cash value basis if, on the inception date of the policy, the Coverage **A** limit of liability selected by the insured is less than 80% of the full replacement cost of the dwelling.

3. Mobile Or Trailer Home

When written in conjunction with this endorsement, Form **DP 00 02** may be used to insure a mobile or trailer home.

To develop the Base Premium, multiply the premium developed in Rule **301.** by a factor of .98.

4. Dwelling Building Other Than Mobile Or Trailer Home

The premium is computed as follows:

a. Multiply the Coverage **A** limit of liability by the appropriate factor from the following table and round to the nearest $1,000:

% Of Replacement Value*	Factor
20%	4.00
30%	2.67
40%	2.00
50%	1.60
60%	1.33
70%	1.14

Table 305.B.4.a. Factors

b. Develop a Base Premium in accordance with Rule **301.** for the amount of insurance computed in Paragraph **B.4.a.**

c. Multiply the premium determined in Paragraph **B.4.b.** by the appropriate factor from the following table:

% Of Replacement Value*	Factor
20%	.73
30%	.74
40%	.75
50%	.76
60%	.77
70%	.78
80%	.80

Table 305.B.4.c. Factors

5. Endorsement

Use Actual Cash Value Loss Settlement Endorsement **DP 04 76.**

PART IV
ADJUSTED BASE PREMIUM COMPUTATION RULES

RULE 401.
SUPERIOR CONSTRUCTION

Table **401.C.** is replaced by the following:

Classifications	Fire	E.C., Broad & Special Forms
Fire Resistive & Masonry Non-combustible	.50	.75
Non-combustible	.50	1.00

Table 401.C. Superior Construction Factors

RULE 404.
MOBILE OR TRAILER HOMES – DP 00 01 ONLY OR DP 00 02 WITH DP 04 76

The title of Rule **404.,** Mobile Or Trailer Homes – **DP 00 01,** is replaced by the preceding title.

RULE 406.
DEDUCTIBLES

The introductory text in Rule **406.** is replaced by the following:

All policies are subject to a deductible that applies to loss from all perils, except Earthquake. A separate deductible type applies to Earthquake Coverage as described in Rule **509.**

Refer to the Earthquake Coverage rule for the applicable deductible provision.

The following tables are added to Paragraph **B.1.:**

Fire				
Coverage A, B, D Or E And Coverage Options For Buildings And Non-building Structures				
	Coverages A, B, D Or E Limit (Expressed In $)			
Deductibles	**Up To 125,000**	**125,001 To 175,000**	**175,001 To 250,000**	**250,001 And Above**
$ 100*	1.080	1.070	1.060	1.050
250*	1.040	1.035	1.030	1.025
1,000	0.981	0.987	0.988	0.992
2,500	0.933	0.953	0.959	0.973
5,000	0.865	0.906	0.919	0.945
7,500	0.809	0.866	0.884	0.922
10,000	0.759	0.829	0.854	0.901
* Refer to state rates for the minimum annual additional premium charge that applies per location for all $100 and $250 Fire Deductibles.				

Table 406.B.1.#1 Fire Coverage A, B, D Or E Deductibles

Fire	
Coverage C And Other Personal Property Coverage Options	
Deductibles	**Factors**
$ 100*	1.070
250*	1.035
1,000	0.989
2,500	0.961
5,000	0.923
7,500	0.891
10,000	0.862
* Refer to state rates for the minimum annual additional premium charge that applies per location for all $100 and $250 Fire Deductibles.	

Table 406.B.1.#2 Fire Coverage C Deductibles

Territories 110, 120, 130, 140, 150 and 160 (Beach & Coastal)				
E.C., V. & M.M., Broad And Special Forms				
Coverage A, B, D Or E And Coverage Options For Building And Non-building Structures				
	Coverage A, B, D Or E Limit (Expressed In $)			
Deductibles	**Up To 125,000**	**125,001 To 175,000**	**175,001 To 250,000**	**250,001 And Above**
$ 100*	1.072	1.047	1.035	1.022
250*	1.040	1.027	1.021	1.011
1,000	0.935	0.957	0.967	0.980
2,500	0.800	0.857	0.888	0.935
5,000	0.665	0.741	0.791	0.874
7,500	0.582	0.660	0.719	0.825
10,000	0.530	0.599	0.662	0.784
* Refer to state rates for the minimum annual additional premium charge that applies per location for all $100 and $250 E.C., V. & M.M., Broad And Special Forms Deductibles.				

Table 406.B.1.#3 E.C., V. & M.M., Broad And Special Forms Coverage A, B, D Or E Deductibles

RULE 406.
DEDUCTIBLES (Cont'd)

Territories 110, 120, 130, 140, 150 and 160 (Beach & Coastal)	
E.C., V. & M.M., Broad And Special Forms	
Coverage C And Other Personal Property Coverage Options	
Deductibles	**Factors**
$ 100*	1.030
250*	1.016
1,000	0.973
2,500	0.910
5,000	0.833
7,500	0.775
10,000	0.728

* Refer to state rates for the minimum annual additional premium charge that applies per location for all $100 and $250 E.C., V. & M.M., Broad And Special Forms Deductibles.

Table 406.B.1.#4 E.C., V. & M.M., Broad And Special Forms Coverage C Deductibles

Territories 170-390 (Inland)				
E.C., V. & M.M., Broad And Special Forms				
Coverage A, B, D Or E And Coverage Options For Building And Non-building Structures				
	Coverage A, B, D Or E Limit (Expressed In $)			
Deductibles	**Up To 125,000**	**125,001 To 175,000**	**175,001 To 250,000**	**250,001 And Above**
$ 100*	1.108	1.083	1.073	1.056
250*	1.060	1.047	1.044	1.034
1,000	0.910	0.928	0.939	0.948
2,500	0.727	0.773	0.802	0.838
5,000	0.548	0.603	0.645	0.711
7,500	0.451	0.500	0.541	0.621
10,000	0.393	0.436	0.472	0.555

* Refer to state rates for the minimum annual additional premium charge that applies per location for all $100 and $250 E.C., V. & M.M., Broad And Special Forms Deductibles.

Table 406.B.1.#5 E.C., V. & M.M., Broad And Special Forms Coverage A, B, D Or E Deductibles

Territories 170-390 (Inland)	
E.C., V. & M.M., Broad And Special Forms	
Coverage C And Other Personal Property Coverage Options	
Deductibles	**Factors**
$ 100*	1.077
250*	1.045
1,000	0.936
2,500	0.800
5,000	0.651
7,500	0.555
10,000	0.489

* Refer to state rates for the minimum annual additional premium charge that applies per location for all $100 and $250 E.C., V. & M.M., Broad And Special Forms Deductibles.

Table 406.B.1.#6 E.C., V. & M.M., Broad And Special Forms Coverage C Deductibles

The introductory text in Paragraph **B.2.** is replaced by the following:

B. Optional Deductibles

2. Windstorm Or Hail Deductibles

When the policy covers the peril of Windstorm or Hail, the following deductible options may be used in conjunction with a deductible applicable to all other perils covered under Extended Coverage, Broad or Special Forms. They may not be used on a policy in conjunction with a Named Storm deductible as described in Paragraph **3.**

Paragraph **B.2.a.(7)** is replaced by the following:

a. Percentage Deductibles

(7) Deductible Factors

When the property is located in an area serviced by the North Carolina Insurance Underwriting Association (NCIUA – Territories 110, 120, 130, 140, 150 and 160), additional calculations must be performed to ensure that the premium credit applied to the deductible is **not** greater than the premium credit that would be applied if the peril of Windstorm or Hail were excluded from the policy.

RULE 406.
DEDUCTIBLES (Cont'd)

(a) Property **Not** Located in Area Serviced by the NCIUA

To compute the premium for this provision, multiply the Extended Coverage, Broad or Special Form Base Premium for the Base Deductible for each coverage insured under the policy by the factor selected for the desired windstorm or hail deductible options from the following tables.

(b) Property **Is** Located in Area Serviced by the NCIUA

To determine if an "adjusted deductible credit" or the calculated deductible credit applies, complete each of the following steps:

Step **1.** Multiply the windstorm or hail exclusion credit shown in the state rates, under Additional Rule **A3.** Windstorm Or Hail Exclusion – Territories 110, 120, 130, 140, 150 And 160 Only, by the Key Factor for the same amount of insurance used to determine the Extended Coverage, Broad or Special Form Base Premium.

Step **2.** Multiply the result determined in Step **1.** by .9 to determine the "adjusted deductible credit".

Step **3.** Select the factor for the desired windstorm or hail deductible option from the following tables and subtract the factor from unity (1.00).

Step **4.** Multiply the factor determined in Step **3.** by the Extended Coverage, Broad or Special Form Base Premium. The result is the windstorm or hail deductible credit.

Step **5.** Compare the results in Steps **2.** and **4.** If the result in:

Step **2.** is **less than** the result in Step **4.,** to compute the premium, subtract the "adjusted deductible credit" from the Extended Coverage, Broad or Special Form Base Premium.

Step **2.** is **greater than or equal to** Step **4.,** multiply the Extended Coverage, Broad or Special Form Base Premium by the factor for the desired windstorm or hail deductible option.

RULE 406.
DEDUCTIBLES (Cont'd)

Territories 110, 120, 130, 140, 150 And 160 (Beach & Coastal)					
Coverage A, B, D Or E And Coverage Options For Buildings And Non-building Structures					
Windstorm Or Hail Deductible Percentage	All Other Perils Deductible Amounts	Coverage A, B, D Or E Limit (Expressed In $)			
		Up To 125,000	125,001 To 175,000	175,001 To 250,000	250,001 And Above
1%	$ 100	0.956	0.926	0.916	0.899
	250	0.952	0.925	0.915	0.898
	500	0.946	0.924	0.913	0.897
	1,000	0.933	0.921	0.911	0.895
	2,500	–	–	–	0.879
	5,000	–	–	–	0.878
	7,500	–	–	–	0.872
	10,000	–	–	–	0.855
2%	100	0.868	0.841	0.832	0.818
	250	0.866	0.840	0.832	0.817
	500	0.863	0.838	0.830	0.816
	1,000	0.856	0.836	0.828	0.815
	2,500	–	0.830	0.823	0.810
	5,000	–	–	–	0.805
	7,500	–	–	–	0.797
	10,000	–	–	–	0.792
5%	100	0.705	0.680	0.675	0.665
	250	0.704	0.679	0.674	0.664
	500	0.701	0.678	0.673	0.663
	1,000	0.697	0.675	0.670	0.661
	2,500	0.686	0.669	0.665	0.657
	5,000	0.671	0.663	0.659	0.652
	7,500	–	0.657	0.655	0.648
	10,000	–	–	0.651	0.646
7.5%	100	0.622	0.599	0.594	0.585
	250	0.620	0.598	0.593	0.585
	500	0.618	0.596	0.592	0.584
	1,000	0.615	0.594	0.590	0.582
	2,500	0.606	0.588	0.585	0.577
	5,000	0.594	0.581	0.578	0.572
	7,500	0.585	0.578	0.574	0.569
	10,000	–	0.574	0.572	0.566
10%	100	0.557	0.535	0.531	0.522
	250	0.555	0.534	0.530	0.522
	500	0.553	0.533	0.529	0.521
	1,000	0.550	0.530	0.527	0.519
	2,500	0.542	0.524	0.521	0.515
	5,000	0.532	0.518	0.515	0.510
	7,500	0.524	0.514	0.511	0.506
	10,000	0.518	0.511	0.509	0.504

Table 406.B.2.a.(7)#1 Coverage A, B, D Or E Windstorm Or Hail Percentage Deductibles

RULE 406.
DEDUCTIBLES (Cont'd)

Territories 110, 120, 130, 140, 150 And 160 (Beach & Coastal)								
Coverage C And Other Personal Property Coverage Options*								
Windstorm Or Hail Deductible Percentage	All Other Perils Deductible Amounts (Expressed In $)							
	100	250	500	1,000	2,500	5,000	7,500	10,000
1%	0.909	0.908	0.906	0.902	0.890	0.876	0.870	0.853
2%	0.827	0.826	0.825	0.822	0.815	0.804	0.795	0.791
5%	0.671	0.670	0.669	0.667	0.662	0.655	0.650	0.645
7.5%	0.591	0.590	0.589	0.587	0.582	0.575	0.571	0.568
10%	0.528	0.527	0.526	0.523	0.518	0.513	0.508	0.505
* Only use when policy also covers building or non-building structures.								

Table 406.B.2.a.(7)#2 Coverage C And Other Personal Property Windstorm Or Hail Percentage Deductibles

RULE 406.
DEDUCTIBLES (Cont'd)

Territories 170-390 (Inland)					
Coverage A, B, D Or E And Coverage Options For Buildings And Non-building Structures					
Windstorm Or Hail Deductible Percentage	All Other Perils Deductible Amounts	Coverage A, B, D Or E Limit (Expressed In $)			
		Up To 125,000	125,001 To 175,000	175,001 To 250,000	250,001 And Above
1%	$ 100	0.990	0.947	0.926	0.885
	250	0.975	0.937	0.917	0.878
	500	0.949	0.921	0.902	0.867
	1,000	0.903	0.893	0.878	0.848
	2,500	–	–	–	0.802
	5,000	–	–	–	0.711
	7,500	–	–	–	0.654
	10,000	–	–	–	0.608
2%	100	0.916	0.866	0.843	0.802
	250	0.902	0.855	0.833	0.795
	500	0.879	0.840	0.819	0.784
	1,000	0.841	0.812	0.794	0.765
	2,500	–	0.748	0.737	0.718
	5,000	–	–	–	0.664
	7,500	–	–	–	0.605
	10,000	–	–	–	0.567
5%	100	0.785	0.730	0.711	0.688
	250	0.771	0.720	0.701	0.681
	500	0.749	0.705	0.687	0.669
	1,000	0.715	0.676	0.663	0.650
	2,500	0.634	0.612	0.605	0.604
	5,000	0.540	0.542	0.539	0.549
	7,500	–	0.495	0.496	0.511
	10,000	–	–	0.464	0.483
7.5%	100	0.729	0.681	0.667	0.650
	250	0.715	0.670	0.658	0.643
	500	0.693	0.655	0.643	0.632
	1,000	0.659	0.626	0.619	0.613
	2,500	0.582	0.563	0.561	0.566
	5,000	0.498	0.492	0.495	0.512
	7,500	0.444	0.449	0.453	0.474
	10,000	–	0.421	0.423	0.446
10%	100	0.692	0.650	0.640	0.626
	250	0.678	0.639	0.630	0.619
	500	0.656	0.624	0.616	0.608
	1,000	0.623	0.596	0.591	0.589
	2,500	0.548	0.532	0.534	0.542
	5,000	0.466	0.461	0.468	0.487
	7,500	0.417	0.419	0.425	0.449
	10,000	0.384	0.391	0.396	0.422

Table 406.B.2.a.(7)#3 Coverage A, B, D Or E Windstorm Or Hail Percentage Deductibles

RULE 406.
DEDUCTIBLES (Cont'd)

Territories 170-390 (Inland)								
Coverage C And Other Personal Property Coverage Options*								
Windstorm Or Hail Deductible Percentage	All Other Perils Deductible Amounts (Expressed In $)							
	100	250	500	1,000	2,500	5,000	7,500	10,000
1%	0.927	0.917	0.901	0.873	0.789	0.693	0.634	0.587
2%	0.845	0.836	0.821	0.796	0.733	0.646	0.585	0.548
5%	0.719	0.709	0.695	0.671	0.616	0.550	0.504	0.469
7.5%	0.674	0.665	0.650	0.626	0.573	0.510	0.467	0.436
10%	0.646	0.636	0.621	0.598	0.545	0.483	0.441	0.412
* Only use when policy also covers building or non-building structures.								

Table 406.B.2.a.(7)#4 Coverage C And Other Personal Property Windstorm Or Hail Percentage Deductibles

Paragraph **B.2.b.(7)** is replaced by the following:

b. Higher Fixed-dollar Deductibles

(7) Deductible Factors

When the property is located in an area serviced by the North Carolina Insurance Underwriting Association (NCIUA – Territories 110, 120, 130, 140, 150 and 160), additional calculations must be performed to ensure that the premium credit applied to the deductible is **not** greater than the premium credit that would be applied if the peril of Windstorm or Hail were excluded from the policy.

RULE 406.
DEDUCTIBLES (Cont'd)

(a) Property **Not** Located in Area Serviced by the NCIUA

Multiply the Extended Coverage, Broad or Special Form Base Premium for the Base Deductible for each coverage insured under the policy by the factor selected for the desired windstorm or hail deductible options from the following tables.

(b) Property **Is** Located in Area Serviced by the NCIUA

To determine if an "adjusted deductible credit" or the calculated deductible credit applies, complete each of the following steps:

Step **1.** Multiply the windstorm or hail exclusion credit shown in the state rates under Additional Rule **A3.** Windstorm Or Hail Exclusion – Territories 110, 120, 130, 140, 150 and 160 Only, by the Key Factor for the same amount of insurance used to determine the Extended Coverage, Broad or Special Form Base Premium.

Step **2.** Multiply the result determined in Step **1.** by .9 to determine the "adjusted deductible credit".

Step **3.** Select the factor for the desired windstorm or hail deductible option from the following tables and subtract the factor from unity (1.00).

Step **4.** Multiply the factor determined in Step **3.** by the Extended Coverage, Broad or Special Form Base Premium. The result is the windstorm or hail deductible credit.

Step **5.** Compare the results in Steps **2.** and **4.** If the result in:

Step **2.** is **less than** the result in Step **4.,** to compute the premium, subtract the "adjusted deductible credit" from the Extended Coverage, Broad or Special Form Base Premium.

Step **2.** is **greater than or equal to** Step **4.,** multiply the Extended Coverage, Broad or Special Form Base Premium by the factor for the desired windstorm or hail deductible option.

RULE 406.
DEDUCTIBLES (Cont'd)

Territories 110, 120, 130, 140, 150 And 160 (Beach & Coastal)					
Coverage A, B, D Or E And Coverage Options For Buildings And Non-building Structures					
Windstorm Or Hail Deductible Amounts	All Other Perils Deductible Amounts	Coverage A, B, D Or E Limit (Expressed In $)			
		Up To 125,000	125,001 To 175,000	175,001 To 250,000	250,001 And Above
$ 1,000	$ 100	0.942	0.962	0.972	0.984
	250	0.940	0.961	0.971	0.983
	500	0.938	0.959	0.970	0.982
2,000	100	0.850	0.896	0.921	0.955
	250	0.849	0.895	0.920	0.954
	500	0.847	0.893	0.918	0.953
	1,000	0.843	0.891	0.916	0.952
5,000	100	0.685	0.758	0.807	0.887
	250	0.683	0.757	0.806	0.886
	500	0.681	0.756	0.805	0.885
	1,000	0.678	0.753	0.803	0.883
	2,500	0.672	0.747	0.797	0.879
7,500	100	0.606	0.681	0.738	0.841
	250	0.605	0.680	0.738	0.841
	500	0.603	0.679	0.736	0.840
	1,000	0.600	0.676	0.734	0.838
	2,500	0.593	0.670	0.729	0.833
	5,000	0.586	0.664	0.723	0.828
10,000	100	0.556	0.623	0.684	0.803
	250	0.555	0.622	0.684	0.802
	500	0.553	0.621	0.682	0.801
	1,000	0.550	0.618	0.680	0.799
	2,500	0.543	0.612	0.675	0.795
	5,000	0.536	0.606	0.669	0.790
	7,500	0.532	0.602	0.665	0.786

Table 406.B.2.b.(7)#1 Coverage A, B, D Or E Windstorm Or Hail Fixed-dollar Deductibles

Territories 110, 120, 130, 140, 150 And 160 (Beach & Coastal)							
Coverage C And Other Personal Property Coverage Options*							
Windstorm Or Hail Deductible Amounts	All Other Perils Deductible Amounts (Expressed In $)						
	100	250	500	1,000	2,500	5,000	7,500
$ 1,000	0.977	0.977	0.975	–	–	–	–
2,000	0.937	0.936	0.935	0.933	–	–	–
5,000	0.848	0.847	0.846	0.844	0.839	–	–
7,500	0.793	0.792	0.791	0.789	0.784	0.778	–
10,000	0.750	0.749	0.747	0.745	0.740	0.735	0.731
* Only use when policy also covers building or non-building structures.							

Table 406.B.2.b.(7)#2 Coverage C And Other Personal Property Windstorm Or Hail Fixed-dollar Deductibles

RULE 406.
DEDUCTIBLES (Cont'd)

Territories 170-390 (Inland)					
Coverage A, B, D Or E And Coverage Options For Buildings And Non-building Structures					
Windstorm Or Hail Deductible Amounts	All Other Perils Deductible Amounts	Coverage A, B, D Or E Limit (Expressed In $)			
		Up To 125,000	125,001 To 175,000	175,001 To 250,000	250,001 And Above
$ 1,000	$ 100	0.979	0.983	0.987	0.985
	250	0.965	0.972	0.978	0.978
	500	0.943	0.957	0.963	0.967
2,000	100	0.900	0.917	0.930	0.940
	250	0.886	0.907	0.921	0.933
	500	0.864	0.892	0.906	0.922
	1,000	0.831	0.863	0.882	0.903
5,000	100	0.766	0.791	0.817	0.849
	250	0.752	0.781	0.808	0.842
	500	0.730	0.766	0.793	0.831
	1,000	0.697	0.737	0.769	0.812
	2,500	0.624	0.673	0.711	0.765
7,500	100	0.712	0.731	0.756	0.797
	250	0.698	0.721	0.747	0.790
	500	0.676	0.706	0.732	0.779
	1,000	0.643	0.677	0.708	0.760
	2,500	0.569	0.613	0.650	0.713
	5,000	0.494	0.543	0.584	0.659
10,000	100	0.681	0.695	0.716	0.759
	250	0.666	0.684	0.706	0.752
	500	0.645	0.669	0.692	0.741
	1,000	0.611	0.640	0.668	0.722
	2,500	0.538	0.577	0.610	0.675
	5,000	0.462	0.506	0.544	0.620
	7,500	0.420	0.463	0.501	0.582

Table 406.B.2.b.(7)#3 Coverage A, B, D Or E Windstorm Or Hail Fixed-dollar Deductibles

Territories 170-390 (Inland)							
Coverage C And Other Personal Property Coverage Options*							
Windstorm Or Hail Deductible Amounts	All Other Perils Deductible Amounts (Expressed In $)						
	100	250	500	1,000	2,500	5,000	7,500
$ 1,000	0.983	0.974	0.959	–	–	–	–
2,000	0.924	0.915	0.900	0.877	–	–	–
5,000	0.813	0.803	0.789	0.765	0.712	–	–
7,500	0.756	0.747	0.732	0.708	0.655	0.595	–
10,000	0.718	0.709	0.694	0.671	0.618	0.557	0.517
* Only use when policy also covers building or non-building structures.							

Table 406.B.2.b.(7)#4 Coverage C And Other Personal Property Windstorm Or Hail Fixed-dollar Deductibles

RULE 406.
DEDUCTIBLES (Cont'd)

The following is added to Paragraph **B.:**

3. Named Storm Deductibles – Territories 110, 120, 130, 140, 150 and 160

When the policy covers the peril of Windstorm or Hail, the following deductible options may be used in the listed territories in conjunction with the deductible applicable to all other Perils under Extended Coverage, Broad or Special Forms. They may not be used on a policy in conjunction with a Windstorm or Hail deductible as described in Paragraph **2.**

a. Percentage Deductibles – Territories 110, 120, 130, 140, 150 and 160 Only

(1) Deductible Amounts

This option provides for higher Named Storm percentage deductibles of 1%, 2%, 5%, 7.5% and 10% of the limit of liability that applies to Coverage **A, B, D** or **E,** whichever is greatest, when the dollar amount of the percentage deductible selected exceeds the amount of the All Other Perils deductible. This option is not available for policies covering only personal property.

(2) Endorsement

Use Named Storm Deductible – North Carolina Endorsement **DP 32 18.**

(3) Declarations Instructions

Enter, on the policy Declarations, the percentage amount that applies to Named Storm and the dollar amount that applies to All Other Section **I** Perils. For example:

Deductible – Named Storm 2% of Coverage **A** limit and $500 for all other perils.

(4) Deductible Application

In the event of a Named Storm loss to covered property, the dollar amount is deducted from the total of the loss for all coverages.

(5) Coverage Options

The deductible factors for Coverage **A, B, D** or **E** and Coverage Options For Buildings and Non-building Structures differ by the deductible percentage amounts that apply to Named Storm, deductible amounts that apply to other perils and the Coverage **A, B, D** or **E** limit.

The deductible factors for Coverage **C** and Other Personal Property Coverage Options differ by the deductible percentage amounts that apply to Named Storm and the deductible amounts that apply to other perils.

(6) Use Of Factors

The factors displayed in Paragraph **B.3.a.(7)** incorporate the factors for the All Perils Deductibles. Do not use the factors for the All Perils Deductibles when rating a policy with a higher Named Storm deductible.

(7) Deductible Factors

When the property is located in an area serviced by the North Carolina Insurance Underwriting Association (NCIUA – Territories 110, 120, 130, 140, 150 and 160), additional calculations must be performed to ensure that the premium credit applied for the deductible is **not** greater than the premium credit that would be applied if the peril of Windstorm or Hail were excluded from the policy.

To determine if an "adjusted deductible credit" or the calculated deductible credit applies, complete each of the following steps:

Step **1.** Multiply the windstorm or hail exclusion credit shown in the state rate pages, under Additional Rule **A3.** Windstorm Or Hail Exclusion – Territories 110, 120, 130, 140, 150 and 160 Only, by the Key Factor for the same amount of insurance used to determine the Extended Coverage, Broad or Special Form Base Premium.

Step **2.** Multiply the result determined in Step **1.** by .9 to determine the "adjusted deductible credit".

Step **3.** Select the factor for the desired named storm deductible option from the following table and subtract that factor from unity (1.00).

Step **4.** Multiply the factor determined in Step **3.** by the Extended Coverage, Broad or Special Form Base Premium. The result is the named storm deductible credit.

Step **5.** Compare the results in Steps **2.** and **4.** If the result in:

Step **2.** is **less** than the result in Step **4.,** to compute the premium, subtract the "adjusted deductible credit" from the Extended Coverage, Broad or Special Form Base Premium.

Step **2.** is **greater than or equal to** the result in Step **4.,** multiply the Extended Coverage, Broad or Special Form Base Premium by the factor for the desired named storm deductible option.

RULE 406.
DEDUCTIBLES (Cont'd)

Territories 110, 120, 130, 140, 150 And 160 (Beach & Coastal)					
Coverage A, B, D Or E And Coverage Options For Buildings And Non-building Structures					
Named Storm Percentage	All Other Perils Deductible Amounts	Coverage A, B, D Or E Limit (Expressed In $)			
		Up To 125,000	125,001 To 175,000	175,001 To 250,000	250,001 And Above
1%	$ 100	0.958	0.928	0.918	0.902
	250	0.954	0.927	0.917	0.901
	500	0.947	0.925	0.915	0.900
	1,000	0.933	0.922	0.912	0.897
	2,500	–	–	–	0.886
	5,000	–	–	–	0.878
	7,500	–	–	–	0.872
	10,000	–	–	–	0.855
2%	100	0.872	0.845	0.837	0.824
	250	0.869	0.844	0.836	0.823
	500	0.865	0.842	0.834	0.821
	1,000	0.857	0.838	0.831	0.819
	2,500	–	0.831	0.824	0.813
	5,000	–	–	–	0.806
	7,500	–	–	–	0.798
	10,000	–	–	–	0.792
5%	100	0.711	0.688	0.683	0.673
	250	0.709	0.687	0.682	0.672
	500	0.707	0.685	0.680	0.671
	1,000	0.702	0.681	0.677	0.668
	2,500	0.689	0.674	0.670	0.663
	5,000	0.671	0.665	0.662	0.656
	7,500	–	0.657	0.656	0.651
	10,000	–	–	0.652	0.647
7.5%	100	0.629	0.608	0.603	0.594
	250	0.628	0.606	0.602	0.594
	500	0.625	0.605	0.600	0.592
	1,000	0.621	0.601	0.597	0.590
	2,500	0.609	0.593	0.590	0.584
	5,000	0.595	0.584	0.582	0.577
	7,500	0.585	0.579	0.577	0.572
	10,000	–	0.575	0.573	0.569
10%	100	0.565	0.545	0.541	0.532
	250	0.563	0.543	0.539	0.531
	500	0.561	0.541	0.538	0.530
	1,000	0.557	0.538	0.535	0.527
	2,500	0.546	0.530	0.528	0.521
	5,000	0.534	0.521	0.519	0.515
	7,500	0.525	0.516	0.514	0.510
	10,000	0.519	0.512	0.510	0.506

Table 406.B.3.a.(7)#1 Coverage A, B, D Or E Named Storm Percentage Deductibles

RULE 406.
DEDUCTIBLES (Cont'd)

Territories 110, 120, 130, 140, 150 And 160 (Beach & Coastal)								
Coverage C And Other Personal Property Coverage Options*								
	All Other Perils Deductible Amounts (Expressed In $)							
Named Storm Percentage	100	250	500	1,000	2,500	5,000	7,500	10,000
1%	0.912	0.910	0.908	0.904	0.890	0.876	0.869	0.852
2%	0.832	0.831	0.829	0.825	0.817	0.804	0.795	0.790
5%	0.679	0.678	0.676	0.673	0.666	0.658	0.651	0.646
7.5%	0.600	0.599	0.597	0.594	0.587	0.579	0.573	0.569
10%	0.537	0.536	0.534	0.531	0.525	0.516	0.511	0.507
* Only use when policy also covers building or non-building structures.								

Table 406.B.3.a.(7)#2 Coverage C And Other Personal Property Named Storm Percentage Deductibles

RULE 406.
DEDUCTIBLES (Cont'd)

b. Higher Fixed-dollar Deductibles – Territories 110, 120, 130, 140, 150 and 160 Only

(1) Deductible Amounts

This option provides for higher Named Storm Fixed-dollar deductible amounts of $1,000, $2,000, $5,000, $7,500 and $10,000 when the dollar amount of the higher fixed-dollar deductible selected exceeds the amount of the All Other Perils deductible. This option is not available for policies covering only personal property.

(2) Endorsement

Use Named Storm Deductible – North Carolina Endorsement **DP 32 18.**

(3) Declarations Instructions

Enter, on the policy Declarations, the deductible amounts that apply to Named Storm and All Other Perils. For example: $1,000 for Named Storm and $500 for All Other Perils.

(4) Deductible Application

In the event of a Named Storm loss to covered property, the dollar amount is deducted from the total of the loss for all coverages.

(5) Coverage Options

The deductible factors for Coverage **A, B, D** or **E** and Coverage Options For Buildings And Non-building Structures differ by the deductible amounts that apply to Named Storm and to other perils and the Coverage **A, B, D** or **E** limit.

The deductible factors for Coverage **C** and Other Personal Property Coverage Options differ by the deductible amounts that apply to Named Storm and to other perils.

(6) Use Of Factors

The factors displayed in Paragraph **B.3.b.(7)** incorporate the factors for the All Perils Deductibles. Do not use the factors for the All Perils Deductibles when rating a policy with a higher Named Storm deductible.

(7) Deductible Factors

When the property is located in an area serviced by the North Carolina Insurance Underwriting Association (NCIUA – Territories 110, 120, 130, 140, 150 and 160), additional calculations must be performed to ensure that the premium credit applied for the deductible is not greater than the premium credit that would be applied if the peril of Windstorm or Hail were excluded from the policy.

To determine if an "adjusted deductible credit" or the calculated deductible credit applies, complete each of the following steps:

Step **1.** Multiply the windstorm or hail exclusion credit shown in the state rate pages, under Additional Rule **A3.** Windstorm Or Hail Exclusion – Territories 110, 120, 130, 140, 150 And 160 Only, by the Key Factor for the same amount of insurance used to determine the Extended Coverage, Broad or Special Form Base Premium.

Step **2.** Multiply the result determined in Step **1.** by .9 to determine the "adjusted deductible credit".

Step **3.** Select the factor for the desired named storm deductible option from the following table and subtract that factor from unity (1.00).

Step **4.** Multiply the factor determined in Step **3.** by the Extended Coverage, Broad or Special Form Base Premium. The result is the named storm deductible credit.

Step **5.** Compare the results in Steps **2.** and **4.** If the result in:

Step **2.** is **less** than the result in Step **4.,** to compute the premium, subtract the "adjusted deductible credit" from the Extended Coverage, Broad or Special Form Base Premium.

Step **2.** is **greater than or equal to** the result in Step **4.,** multiply the Extended Coverage, Broad or Special Form Base Premium by the factor for the desired named storm deductible option.

RULE 406.
DEDUCTIBLES (Cont'd)

Territories 110, 120, 130, 140, 150 And 160 (Beach & Coastal)					
Coverage A, B, D Or E And Coverage Options For Buildings And Non-building Structures					
Named Storm Deductible Fixed-dollar Amounts	All Other Perils Deductible Amounts	Coverage A, B, D Or E Limit (Expressed In $)			
		Up To 125,000	125,001 To 175,000	175,001 To 250,000	250,001 And Above
$ 1,000	$ 100	0.943	0.963	0.973	0.985
	250	0.942	0.962	0.972	0.984
	500	0.939	0.960	0.970	0.983
2,000	100	0.853	0.899	0.923	0.957
	250	0.852	0.897	0.922	0.956
	500	0.849	0.895	0.920	0.955
	1,000	0.845	0.892	0.917	0.953
5,000	100	0.692	0.764	0.812	0.891
	250	0.690	0.763	0.811	0.890
	500	0.687	0.761	0.810	0.889
	1,000	0.683	0.757	0.807	0.887
	2,500	0.674	0.750	0.800	0.881
7,500	100	0.614	0.689	0.745	0.847
	250	0.613	0.687	0.744	0.846
	500	0.610	0.686	0.743	0.845
	1,000	0.606	0.682	0.740	0.842
	2,500	0.597	0.674	0.733	0.837
	5,000	0.587	0.665	0.724	0.830
10,000	100	0.565	0.631	0.692	0.809
	250	0.563	0.630	0.691	0.809
	500	0.561	0.628	0.690	0.807
	1,000	0.557	0.625	0.687	0.805
	2,500	0.548	0.617	0.680	0.799
	5,000	0.538	0.608	0.671	0.792
	7,500	0.533	0.602	0.666	0.787

Table 406.B.3.b.(7)#1 Coverage A, B, D Or E Named Storm Higher Fixed-dollar Deductibles

Territories 110, 120, 130, 140, 150 And 160 (Beach & Coastal)							
Coverage C And Other Personal Property Coverage Options*							
Named Storm Deductible Fixed-dollar Amounts	All Other Perils Deductible Amounts (Expressed In $)						
	100	250	500	1,000	2,500	5,000	7,500
$ 1,000	0.979	0.978	0.976	–	–	–	–
2,000	0.940	0.939	0.937	0.934	–	–	–
5,000	0.853	0.852	0.850	0.848	0.841	–	–
7,500	0.800	0.799	0.797	0.794	0.788	0.780	–
10,000	0.757	0.756	0.754	0.752	0.745	0.737	0.732
* Only use when policy also covers building or non-building structures.							

Table 406.B.3.b.(7)#2 Coverage C And Other Personal Property Named Storm Higher Fixed-dollar Deductibles

RULE 407.
AUTOMATIC INCREASE IN INSURANCE

Rule **407.** is replaced by the following:

A. Automatic Increase In Insurance Endorsement – DP 32 11

1. The policy may be endorsed to provide automatic annual increases in the Coverage **A, B** and **C** limits of liability. Apply a factor to the Base Premium as follows:

Amount Of Annual Increase	Factor
4%	1.02
6%	1.03
8%	1.04
Each Additional 4% over 8% add:	.02

Table 407.A.1. Factors

2. The premium for a 3 year policy is 3.2 times the annual policy premium.

3. Use Automatic Increase In Insurance Endorsement **DP 32 11**.

B. Inflation Guard Endorsement – DP 32 70

1. The policy may be extended to automatically adjust the limit of liability applicable to Coverage **A** under the Dwelling Policy. This limit will be adjusted at the same rate as the change in the Index shown on the Declarations, billing notice or named on the form.

2. There is no additional charge for this endorsement. Companies electing to use this endorsement must use it exclusively and are required to notify the North Carolina Rate Bureau of their election.

3. The following Indexes have been approved by the Department of Insurance and may be used with the approved Inflation Guard Endorsement:

(a) Marshall & Swift Boeckh (MS/B) Residential Cost Index published by the American Appraisal Company, Inc.;

(b) Composite Construction Cost Index published by the U.S. Department of Commerce;

(c) Consumer Price Index published by the U.S. Department of Labor;

(d) Marshall & Swift Boeckh (MS/B) Construction Cost Index published Marshall & Swift Boeckh (MS/B);

(e) RSMeans CostWorks Valuator published by RSMeans.

(f) Xactware Inflation Index published by Xactware Solutions, Inc.

4. Use Inflation Guard Endorsement **DP 32 70.**

RULE 408.
ALARMS, SMOKE DETECTORS, FIRE EXTINGUISHERS AND AUTOMATIC SPRINKLERS

The title of Rule **408.** Protective Devices is replaced by the preceding title.

Rule **408.** is replaced by the following:

A. Approved and properly maintained installations of fire alarms, smoke detectors, automatic sprinklers and fire extinguishers in the dwelling may be recognized for a reduced premium – computed by multiplying the fire Base Premium by the selected factors as follows.

Type Of Installation*	Dwelling Factor	Mobile Or Trailer Home Factor
Central Station Reporting Fire Alarm	.90	.92
Fire Department Reporting Fire Alarm	.93	.95
Local Fire Alarm Smoke Detectors	.95	.97
Automatic Sprinklers in all areas including attics, bathrooms, closets, attached structures	.80	.90
Automatic Sprinklers in all areas except attic, bathroom, closet and attached structure areas that are protected by a fire detector	.90	.95
Fire Extinguishers	.95	.95
* Refer to Company for eligibility, types of systems and devices, installation, and available credits.		

Table 408.A. Protective Devices Factors

B. A premium credit for Fire Extinguishers shall be allowed if the dwelling has, installed on each floor and basement in a readily accessible place, at least:

1. One fire extinguisher classified and labeled as 2-A (classified as A-1 prior to July 1, 1956), or

2. Two fire extinguishers classified and labeled as 1-A (classified as A-2 prior to July, 1956).

The extinguishers must be maintained in good, working order.

C. Use Premises Alarm Or Fire Protection System Endorsement **DP 32 50.**

RULE 409.
ACTUAL CASH VALUE LOSS SETTLEMENT WINDSTORM OR HAIL LOSSES TO ROOF SURFACING – DP 00 02, DP 00 03 AND DP 00 01 WITH DP 00 08

Rule **409.** does not apply.

RULE 410.
BUILDING CODE EFFECTIVENESS GRADING

Rule **410.** does not apply.

PART V
ADDITIONAL COVERAGES AND INCREASED LIMITS RULES

RULE 502.
COVERAGE D – FAIR RENTAL VALUE COVERAGE E – ADDITIONAL LIVING EXPENSE

Paragraph **A.** is replaced by the following:

A. Introduction

Coverage is automatically provided in the forms on a limited basis as follows:

1. Form DP 00 01

a. Coverage D

Up to 10% of the Coverage **A** limit is available. Use of this option reduces the Coverage **A** limit for the same loss. No entry is needed in the policy Declarations for this coverage to apply.

b. Coverage E

Not automatically included in form. It may be added as noted in Paragraph **B.**

2. Form DP 00 02 Or DP 00 03

Coverage **D** and **E** combined – Up to 10% of the Coverage **A** limit is available for Coverage **D** and Coverage **E** combined as additional insurance. No entry is needed in the policy Declarations for this coverage to apply.

Table **502.B.1.c.** is replaced by the following:

DP 00 01 Example

Factors
$5,200 = Rental Value Coverage in Form (10% of Coverage **A** limit of $52,000) +2,000 = Additional Insurance (Shown under Coverage **D** in policy Declarations)
$7,200 = Total Rental Value Amount Insured
Scenario A
If dwelling is rented for entire year, then fraction = 1/12. $7,200 X 1/12 = Up to $600 available each month.
Scenario B
If dwelling is rented 8 months per year, then fraction = 1/8. $7,200 X 1/8 = Up to $900 available each month.

Table 502.B.1.c. DP 00 01 Example

RULE 503.
ORDINANCE OR LAW COVERAGE FOR COVERAGE B – SPECIFIC STRUCTURES, BUILDING ITEMS AND IMPROVEMENTS, ALTERATIONS AND ADDITIONS

Paragraph **C.2.** is replaced by the following:

C. Premium Determination

2. Refer to the state company rates/ISO loss costs Rule **500.** Miscellaneous Rates.

RULE 507.
FIRE DEPARTMENT SERVICE CHARGE

Rule **507.** is replaced by the following:

The limit of $500 provided under the policy may be increased. Refer to the state rates.

RULE 509.
EARTHQUAKE COVERAGE

Rule **509.** is replaced by the following:

A. Coverage Description

When added to the Fire policy, this peril shall apply to the same coverages and for the same limits that apply to the peril of Fire.

Use Earthquake Coverage Endorsement **DP 04 69.**

B. Loss Assessment Coverage

When the policy is extended to cover loss assessment resulting from loss by this peril, the limit of liability shall be based on the insured's proportionate interest in total value of all collectively owned buildings and structures of the corporation or association of property owners. Refer to company for rates.

Use Loss Assessment Coverage For Earthquake Endorsement **DP 04 68.**

C. Deductible

The base deductible is 5% of the limit of liability for Coverage **A, B** or **C,** whichever is greatest and is subject to a $250 minimum.

This deductible may be increased for a premium credit. In the event of an Earthquake loss to covered property, the dollar amount is deducted from the total of the loss for Coverages **A, B** and **C.**

D. Premium For Base Deductible

Develop the premium as follows:

1. From the state rates:

a. Determine the Earthquake Zone;

b. Determine if Rate Table **A,** and/or **B** applies;

c. Select the rate according to construction from the Rate Table; and

RULE 509.
EARTHQUAKE COVERAGE (Cont'd)

2. Multiply the rate determined in Paragraph **D.1.c.** by the amounts of insurance for:

a. Coverages **A, B, C, D** and **E;**

b. Improvements, Alterations and Additions – Increased Limits;

c. Other Building Coverage options (i.e. Bldg. Items Coverage);

d. Other Personal Property Coverage (i.e. Merchandise in Storage);

e. Ordinance or Law total amount of insurance (includes basic, and if applicable, increased amounts).

E. Premium for Higher Deductibles

Multiply the Base Premium determined in Paragraph **E.** by a factor from the following table:

Deductible Percentage	Frame And Superior	Masonry
10%	.89	.95
15%	.78	.89
20%	.67	.84
25%	.56	.79

Table 509.E. Higher Deductibles Factors

RULE 510.
THEFT COVERAGE

This rule is deleted.

Refer to the Theft Insurance program filed by or on behalf of the company insuring the risk.

RULE 512.
WINDSTORM OR HAIL COVERAGE – MISCELLANEOUS PROPERTIES

The title of Rule **512.** Windstorm Or Hail Coverage - Awnings, Signs And Outdoor Radio And Television Equipment is replaced by the preceding title.

Rule **512.** is replaced by the following:

A. Property Not Covered

The peril of Windstorm or Hail does **not** cover damage to the following properties whether attached to or separated from a dwelling or other structure on the Described Location:

1. Signs or cloth awnings, including their supports;

2. Radio or television antennas or aerials, including their lead-in wiring, masts or towers;

3. Swimming pools;

4. Screens, including their supports, around a swimming pool, patio or other areas;

5. Fences, property line and similar walls, including seawalls;

6. Bathhouses, cabanas, greenhouses, hothouses, pergolas, slathouses, trellises;

7. Outdoor equipment used to service the Described Location; or

8. Structures located over water, whether or not permanently attached to the ground, including the property in or on the structure.

B. Endorsement

Damage to these properties may be covered for an additional premium. Separately describe each property item and corresponding limit of liability on Windstorm Or Hail – Miscellaneous Properties Endorsement **DP 32 19** or the Declarations.

C. Greenhouses And/Or Hothouses

1. When the structure, greenhouse (hothouse) glass and any flowers and plants contained in the structure are insured as a single item:

a. Include, in the limit of liability for each structure, the value of all glass, as computed in Paragraph **1.c.,** and the value of any flowers and plants in that structure;

b. Add the "Glass Condition of Insurance", in Paragraph **3.a.** of this rule, to Windstorm Or Hail – Miscellaneous Properties Endorsement **DP 32 19** or the Declarations; and

c. Specify, in the "Glass Condition of Insurance", the dollar amount of all glass being insured. This amount is determined by multiplying the agreed value per square foot of glass by the number of square feet of all insured glass.

2. When the structure, greenhouse (hothouse) glass or the flowers and plants contained in the structure are **separately** insured, specify the limit of liability **separately** for each structure, all glass and the flowers and plants in that structure.

When glass is separately insured:

a. Add the "Glass Condition of Insurance", in Paragraph **3.b.** of this rule, to Windstorm Or Hail – Miscellaneous Properties Endorsement **DP 32 19** or the Declarations; and

b. Specify, in the "Glass Condition of Insurance", the agreed value per square foot of glass and the number of square feet of all glass. The limit of liability of all glass being insured is determined by multiplying these two amounts.

RULE 512.
WINDSTORM OR HAIL COVERAGE – MISCELLANEOUS PROPERTIES (Cont'd)

3. Glass Condition of Insurance

a. Use this Condition when glass is **not** separately insured:

"Windstorm or Hail Coverage for Greenhouse (Hothouse) Glass

It is understood by you and us that, in the event greenhouse (hothouse) glass is broken or destroyed by the peril of Windstorm or Hail, we will pay no more than the least of the following amounts:

A. $____. This dollar amount for greenhouse (hothouse) glass is determined by multiplying:

1. The agreed value per square foot of greenhouse (hothouse) glass, $____, by

2. The number of square feet of all insured greenhouse (hothouse) glass, ____;

B. An amount computed by:

1. Dividing the number of square feet of all broken or destroyed greenhouse (hothouse) glass by the total number of square feet of insured greenhouse (hothouse) glass, and

2. Multiplying the amount computed in **B.1.** above by the dollar amount for greenhouse (hothouse) glass stated in **A.** above; or

C. The actual cost to repair or replace the broken or destroyed greenhouse (hothouse) glass.

Also, if greenhouse (hothouse) glass is covered by other insurance, we will pay no more than the proportion of a loss that the dollar amount for such greenhouse (hothouse) glass stated in **A.** above bears to the total amount of insurance covering that glass".

b. Use this Condition when glass **is** separately insured:

"Windstorm or Hail Coverage for Greenhouse (Hothouse) Glass

It is understood by you and us that, in the event greenhouse (hothouse) glass is broken or destroyed by the peril of Windstorm or Hail, we will pay no more than the least of the following amounts:

A. The limit of liability declared above for greenhouse (hothouse) glass, which is determined by multiplying:

1. The agreed value per square foot of greenhouse (hothouse) glass, $ ____, by

2. The number of square feet of all insured greenhouse (hothouse) glass, ____;

B. An amount computed by:

1. Dividing the number of square feet of all broken or destroyed greenhouse (hothouse) glass by the total number of square feet of insured greenhouse (hothouse) glass, and

2. Multiplying the amount computed in **B.1.** above by the limit of liability for greenhouse (hothouse) glass declared above; or

C. The actual cost to repair or replace the broken or destroyed greenhouse (hothouse) glass.

Also, if greenhouse (hothouse) glass is covered by other insurance, we will pay no more than the proportion of loss that our limit of liability for such greenhouse (hothouse) glass bears to the total amount of insurance covering that glass".

D. Premium

Refer to the state rates.

RULE 515.
MOTORIZED GOLF CART – PHYSICAL LOSS COVERAGE

Rule **515.** does not apply.

RULE 517.
LIMITED FUNGI, WET OR DRY ROT, OR BACTERIA COVERAGE

Rule **517.** does not apply.

ADDITIONAL RULE(S)

RULE A3.
WINDSTORM OR HAIL EXCLUSION – TERRITORIES 110, 120, 130, 140, 150 AND 160 ONLY

Territory	Const.*	Building Credit	Contents Credit
110	M	$ 141	$ 18
	F	148	19
	MH	185	24
120	M	159	21
	F	167	22
	MH	209	28
130	M	97	12
	F	102	13
	MH	128	16
140	M	105	12
	F	111	13
	MH	139	16
150	M	95	10
	F	100	10
	MH	125	13
160	M	100	11
	F	105	12
	MH	131	15

* M = Masonry, F = Frame. MH = Mobile Homes. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table A3.B.2.(R) Windstorm Or Hail Exclusion – Territories 110, 120, 130, 140, 150 and 160 Only

RULE A5.
INSTALLMENT PAYMENT PLAN

C. The additional charge per installment is $3.00.

RULE A6.
UNPROTECTED DWELLINGS – PROTECTION CLASS 9, 9E, 9S OR 10

Rates Per $1,000	
Additional rate of insurance	$ 1.50

Table A6.C.1.a.(R) Unprotected Dwellings – Protection Class 9, 9E, 9S Or 10

RULE A9.
WINDSTORM MITIGATION PROGRAM

Mitigation Feature	Const.	Territory 110	Territory 120	Territory 130	Territory 140	Territory 150	Territory 160
Total Hip Roof	M	$ 8	$ 8	$ 5	$ 5	$ 5	$ 4
	F	8	8	5	5	5	4
Opening Protection	M	8	8	5	5	5	4
	F	8	8	5	5	5	4
Total Hip Roof and Opening Protection	M	15	16	10	10	10	10
	F	16	17	10	10	10	10
IBHS Designation prior to March 31, 2019:							
Hurricane Fortified for Safer Living®	M	25	29	10	18	12	16
	F	26	30	11	19	13	17
Hurricane Fortified for Existing Homes® Bronze Option 1	M	6	6	3	3	4	3
	F	6	6	3	3	4	3
Hurricane Fortified for Existing Homes® Bronze Option 2	M	10	10	5	7	5	6
	F	10	10	5	7	5	6
Hurricane Fortified for Existing Homes® Silver Option 1	M	15	18	7	11	6	10
	F	16	19	7	12	6	11
Hurricane Fortified for Existing Homes® Silver Option 2	M	19	21	8	13	8	12
	F	20	22	8	14	8	13
Hurricane Fortified for Existing Homes® Gold Option 1	M	19	21	10	13	10	12
	F	20	22	10	14	10	13
Hurricane Fortified for Existing Homes® Gold Option 2	M	21	25	10	17	10	15
	F	22	26	11	18	11	16
IBHS Designation on or after March 31, 2019:							
FORTIFIED for Safer Living®	M	25	29	10	18	12	16
	F	26	30	11	19	13	17
FORTIFIED Roof – Hurricane – Existing Roof	M	6	6	3	3	4	3
	F	6	6	3	3	4	3
FORTIFIED Roof – Hurricane – New Roof	M	10	10	5	7	5	6
	F	10	10	5	7	5	6
FORTIFIED Home – Hurricane – Silver – Existing Roof	M	15	18	7	11	6	10
	F	16	19	7	12	6	11
FORTIFIED Home – Hurricane – Silver – New Roof	M	19	21	8	13	8	12
	F	20	22	8	14	8	13
FORTIFIED Home – Hurricane – Gold – Existing Roof	M	19	21	10	13	10	12
	F	20	22	10	14	10	13
FORTIFIED Home – Hurricane – Gold – New Roof	M	21	25	10	17	10	15
	F	22	26	11	18	11	16

Table A9.E.#1(R) – Windstorm Loss Mitigation Credit – Coverage A – Dwelling

RULE A9.
WINDSTORM MITIGATION PROGRAM (Cont'd)

Mitigation Feature	Const.	Territory 110	Territory 120	Territory 130	Territory 140	Territory 150	Territory 160
Total Hip Roof	M	$ 1	$ 2	$ 1	$ 1	$ 1	$ 1
	F	1	2	1	1	1	1
Opening Protection	M	1	2	1	1	1	1
	F	1	2	1	1	1	1
Total Hip Roof and Opening Protection	M	1	3	1	1	1	1
	F	1	3	1	1	1	1
IBHS Designation prior to March 31, 2019: *Hurricane Fortified for Safer Living®*	M	4	5	2	3	2	3
	F	4	5	2	3	2	3
Hurricane Fortified for Existing Homes® Bronze Option 1	M	1	2	1	1	1	1
	F	1	2	1	1	1	1
Hurricane Fortified for Existing Homes® Bronze Option 2	M	1	3	1	1	1	1
	F	1	3	1	1	1	1
Hurricane Fortified for Existing Homes® Silver Option 1	M	2	3	1	2	1	2
	F	2	3	1	2	1	2
Hurricane Fortified for Existing Homes® Silver Option 2	M	2	4	1	2	1	2
	F	2	4	1	2	1	2
Hurricane Fortified for Existing Homes® Gold Option 1	M	3	4	1	2	1	2
	F	3	4	1	2	1	2
Hurricane Fortified for Existing Homes® Gold Option 2	M	3	4	2	2	2	2
	F	3	4	2	2	2	2
IBHS Designation on or after March 31, 2019: *FORTIFIED for Safer Living®*	M	4	5	2	3	2	3
	F	4	5	2	3	2	3
FORTIFIED Roof – Hurricane – Existing Roof	M	1	2	1	1	1	1
	F	1	2	1	1	1	1
FORTIFIED Roof – Hurricane – New Roof	M	1	3	1	1	1	1
	F	1	3	1	1	1	1
FORTIFIED Home – Hurricane – Silver – Existing Roof	M	2	3	1	2	1	2
	F	2	3	1	2	1	2
FORTIFIED Home – Hurricane – Silver – New Roof	M	2	4	1	2	1	2
	F	2	4	1	2	1	2
FORTIFIED Home – Hurricane – Gold – Existing Roof	M	3	4	1	2	1	2
	F	3	4	1	2	1	2
FORTIFIED Home – Hurricane – Gold – New Roof	M	3	4	2	2	2	2
	F	3	4	2	2	2	2

Table A9.E.#2(R) – Windstorm Loss Mitigation Credit – Coverage C – Personal Property

RULE 206.
MINIMUM PREMIUM

D. Minimum Premium – $50.

RULE 208.
WAIVER OF PREMIUM

B. Amount that may be waived – $3 or less.

RULE 301.
BASE PREMIUM COMPUTATION

Owner-occupied And Non-owner-occupied Key Premiums – Territories 110, 120, 130				
Fire – Coverage A – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 110	Territory 120	Territory 130
1	M	$ 11	$ 11	$ 21
	F	16	16	29
2	M	12	12	21
	F	16	16	29
3	M	12	12	22
	F	16	16	30
4	M	12	12	22
	F	17	17	30
5	M	12	12	23
	F	17	17	31
6	M	13	13	24
	F	18	18	33
7	M	14	14	26
	F	19	19	35
8	M	16	16	30
	F	22	22	40
8B, 9, 9E, 9S	M	18	18	33
	F	24	24	44
10	M	22	22	40
	F	30	30	54

* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#1(R) Fire – Coverage A – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage A	Limit Of Liability (000's)	Coverage A
$ 1*	.38	$ 27	1.48
2	.42	28	1.52
3	.47	29	1.56
4	.51	30	1.60
5	.56	31	1.64
6	.60	32	1.68
7	.65	33	1.72
8	.69	34	1.76
9	.74	35	1.80
10	.78	36	1.84
11	.82	37	1.88
12	.87	38	1.92
13	.92	39	1.96
14	.96	40	2.00
15	1.00	41	2.04
16	1.04	42	2.08
17	1.08	43	2.12
18	1.12	44	2.16
19	1.16	45	2.20
20	1.20	46	2.24
21	1.24	47	2.28
22	1.28	48	2.32
23	1.32	49	2.36
24	1.36	50	2.40
25	1.40	Each Addi-	
26	1.44	tional $1,000	.04

* Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#2(R) Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 140, 150, 160				
Fire – Coverage A – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 140	Territory 150	Territory 160
1	M	$ 19	$ 20	$ 22
	F	26	27	29
2	M	19	20	22
	F	26	27	30
3	M	20	20	23
	F	27	28	31
4	M	20	21	23
	F	27	28	31
5	M	21	21	23
	F	28	29	32
6	M	22	23	25
	F	30	31	34
7	M	23	24	27
	F	32	33	36
8	M	27	28	31
	F	36	38	42
8B, 9, 9E, 9S	M	29	31	34
	F	40	42	46
10	M	36	37	41
	F	49	51	56
* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.				

Table 301.A.#3(R) Fire – Coverage A – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage A	Limit Of Liability (000's)	Coverage A
$ 1*	.38	$ 27	1.48
2	.42	28	1.52
3	.47	29	1.56
4	.51	30	1.60
5	.56	31	1.64
6	.60	32	1.68
7	.65	33	1.72
8	.69	34	1.76
9	.74	35	1.80
10	.78	36	1.84
11	.82	37	1.88
12	.87	38	1.92
13	.92	39	1.96
14	.96	40	2.00
15	1.00	41	2.04
16	1.04	42	2.08
17	1.08	43	2.12
18	1.12	44	2.16
19	1.16	45	2.20
20	1.20	46	2.24
21	1.24	47	2.28
22	1.28	48	2.32
23	1.32	49	2.36
24	1.36	50	2.40
25	1.40	Each Addi-	
26	1.44	tional $1,000	.04
* Use this limit of liability to develop premiums for policy amounts less than $1,000.			

Table 301.A.#4(R) Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 170, 180, 190				
Fire – Coverage A – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 170	Territory 180	Territory 190
1	M	$ 30	$ 30	$ 31
	F	40	41	42
2	M	30	31	32
	F	41	42	43
3	M	31	32	32
	F	42	43	44
4	M	32	32	33
	F	43	44	45
5	M	32	33	34
	F	44	45	46
6	M	35	36	36
	F	47	48	49
7	M	37	37	38
	F	50	51	52
8	M	42	43	44
	F	57	59	60
8B, 9, 9E, 9S	M	46	47	48
	F	63	64	66
10	M	57	58	59
	F	77	79	81

* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#5(R) Fire – Coverage A – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage A	Limit Of Liability (000's)	Coverage A
$ 1*	.38	$ 27	1.48
2	.42	28	1.52
3	.47	29	1.56
4	.51	30	1.60
5	.56	31	1.64
6	.60	32	1.68
7	.65	33	1.72
8	.69	34	1.76
9	.74	35	1.80
10	.78	36	1.84
11	.82	37	1.88
12	.87	38	1.92
13	.92	39	1.96
14	.96	40	2.00
15	1.00	41	2.04
16	1.04	42	2.08
17	1.08	43	2.12
18	1.12	44	2.16
19	1.16	45	2.20
20	1.20	46	2.24
21	1.24	47	2.28
22	1.28	48	2.32
23	1.32	49	2.36
24	1.36	50	2.40
25	1.40	Each Addi-	
26	1.44	tional $1,000	.04

* Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#6(R) Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 200, 210, 220				
Fire – Coverage A – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 200	Territory 210	Territory 220
1	M	$ 42	$ 28	$ 28
	F	57	38	38
2	M	43	28	28
	F	58	39	39
3	M	44	29	29
	F	60	39	39
4	M	45	29	29
	F	61	40	40
5	M	46	30	30
	F	62	41	41
6	M	49	32	32
	F	67	44	44
7	M	52	34	34
	F	70	47	47
8	M	59	39	39
	F	81	53	53
8B, 9, 9E, 9S	M	65	43	43
	F	89	59	59
10	M	80	53	53
	F	109	72	72
* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.				

Table 301.A.#7(R) Fire – Coverage A – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage A	Limit Of Liability (000's)	Coverage A
$ 1*	.38	$ 27	1.48
2	.42	28	1.52
3	.47	29	1.56
4	.51	30	1.60
5	.56	31	1.64
6	.60	32	1.68
7	.65	33	1.72
8	.69	34	1.76
9	.74	35	1.80
10	.78	36	1.84
11	.82	37	1.88
12	.87	38	1.92
13	.92	39	1.96
14	.96	40	2.00
15	1.00	41	2.04
16	1.04	42	2.08
17	1.08	43	2.12
18	1.12	44	2.16
19	1.16	45	2.20
20	1.20	46	2.24
21	1.24	47	2.28
22	1.28	48	2.32
23	1.32	49	2.36
24	1.36	50	2.40
25	1.40	Each Addi-	
26	1.44	tional $1,000	.04
* Use this limit of liability to develop premiums for policy amounts less than $1,000.			

Table 301.A.#8(R) Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 230, 240, 250				
Fire – Coverage A – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 230	Territory 240	Territory 250
1	M	$ 43	$ 28	$ 26
	F	59	39	35
2	M	44	29	26
	F	60	39	36
3	M	45	30	27
	F	61	40	36
4	M	46	30	27
	F	63	41	37
5	M	47	31	28
	F	64	42	38
6	M	51	33	30
	F	69	45	41
7	M	53	35	32
	F	73	48	43
8	M	61	40	36
	F	83	55	49
8B, 9, 9E, 9S	M	67	44	40
	F	92	60	54
10	M	82	54	49
	F	112	74	67
* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.				

Table 301.A.#9(R) Fire – Coverage A – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage A	Limit Of Liability (000's)	Coverage A
$ 1*	.38	$ 27	1.48
2	.42	28	1.52
3	.47	29	1.56
4	.51	30	1.60
5	.56	31	1.64
6	.60	32	1.68
7	.65	33	1.72
8	.69	34	1.76
9	.74	35	1.80
10	.78	36	1.84
11	.82	37	1.88
12	.87	38	1.92
13	.92	39	1.96
14	.96	40	2.00
15	1.00	41	2.04
16	1.04	42	2.08
17	1.08	43	2.12
18	1.12	44	2.16
19	1.16	45	2.20
20	1.20	46	2.24
21	1.24	47	2.28
22	1.28	48	2.32
23	1.32	49	2.36
24	1.36	50	2.40
25	1.40	Each Addi-	
26	1.44	tional $1,000	.04
* Use this limit of liability to develop premiums for policy amounts less than $1,000.			

Table 301.A.#10(R) Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 260, 270, 280				
Fire – Coverage A – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 260	Territory 270	Territory 280
1	M	$ 32	$ 20	$ 19
	F	43	28	26
2	M	32	21	19
	F	44	28	26
3	M	33	21	20
	F	45	29	27
4	M	34	22	20
	F	46	29	27
5	M	34	22	21
	F	47	30	28
6	M	37	24	22
	F	51	32	30
7	M	39	25	23
	F	53	34	32
8	M	45	29	27
	F	61	39	36
8B, 9, 9E, 9S	M	49	32	29
	F	67	43	40
10	M	60	39	36
	F	82	53	49
* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.				

Table 301.A.#11(R) Fire – Coverage A – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage A	Limit Of Liability (000's)	Coverage A
$ 1*	.38	$ 27	1.48
2	.42	28	1.52
3	.47	29	1.56
4	.51	30	1.60
5	.56	31	1.64
6	.60	32	1.68
7	.65	33	1.72
8	.69	34	1.76
9	.74	35	1.80
10	.78	36	1.84
11	.82	37	1.88
12	.87	38	1.92
13	.92	39	1.96
14	.96	40	2.00
15	1.00	41	2.04
16	1.04	42	2.08
17	1.08	43	2.12
18	1.12	44	2.16
19	1.16	45	2.20
20	1.20	46	2.24
21	1.24	47	2.28
22	1.28	48	2.32
23	1.32	49	2.36
24	1.36	50	2.40
25	1.40	Each Addi-	
26	1.44	tional $1,000	.04
* Use this limit of liability to develop premiums for policy amounts less than $1,000.			

Table 301.A.#12(R) Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 290, 300, 310				
Fire – Coverage A – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 290	Territory 300	Territory 310
1	M	$ 24	$ 32	$ 24
	F	32	43	32
2	M	24	32	24
	F	33	44	33
3	M	25	33	25
	F	34	45	34
4	M	25	34	25
	F	34	46	34
5	M	26	34	26
	F	35	47	35
6	M	28	37	28
	F	38	51	38
7	M	29	39	29
	F	40	53	40
8	M	33	45	33
	F	46	61	46
8B, 9, 9E, 9S	M	37	49	37
	F	50	67	50
10	M	45	60	45
	F	61	82	61

* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#13(R) Fire – Coverage A – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage A	Limit Of Liability (000's)	Coverage A
$ 1*	.38	$ 27	1.48
2	.42	28	1.52
3	.47	29	1.56
4	.51	30	1.60
5	.56	31	1.64
6	.60	32	1.68
7	.65	33	1.72
8	.69	34	1.76
9	.74	35	1.80
10	.78	36	1.84
11	.82	37	1.88
12	.87	38	1.92
13	.92	39	1.96
14	.96	40	2.00
15	1.00	41	2.04
16	1.04	42	2.08
17	1.08	43	2.12
18	1.12	44	2.16
19	1.16	45	2.20
20	1.20	46	2.24
21	1.24	47	2.28
22	1.28	48	2.32
23	1.32	49	2.36
24	1.36	50	2.40
25	1.40	Each Addi-	
26	1.44	tional $1,000	.04

* Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#14(R) Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 320, 330, 340				
Fire – Coverage A – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 320	Territory 330	Territory 340
1	M	$ 23	$ 24	$ 21
	F	31	33	29
2	M	23	25	21
	F	32	34	29
3	M	24	25	22
	F	33	35	30
4	M	24	26	22
	F	33	35	30
5	M	25	26	23
	F	34	36	31
6	M	27	28	24
	F	37	39	33
7	M	28	30	26
	F	39	41	35
8	M	32	34	30
	F	44	47	40
8B, 9, 9E, 9S	M	36	38	33
	F	49	52	44
10	M	44	46	40
	F	60	63	54
* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.				

Table 301.A.#15(R) Fire – Coverage A – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage A	Limit Of Liability (000's)	Coverage A
$ 1*	.38	$ 27	1.48
2	.42	28	1.52
3	.47	29	1.56
4	.51	30	1.60
5	.56	31	1.64
6	.60	32	1.68
7	.65	33	1.72
8	.69	34	1.76
9	.74	35	1.80
10	.78	36	1.84
11	.82	37	1.88
12	.87	38	1.92
13	.92	39	1.96
14	.96	40	2.00
15	1.00	41	2.04
16	1.04	42	2.08
17	1.08	43	2.12
18	1.12	44	2.16
19	1.16	45	2.20
20	1.20	46	2.24
21	1.24	47	2.28
22	1.28	48	2.32
23	1.32	49	2.36
24	1.36	50	2.40
25	1.40	Each Addi-	
26	1.44	tional $1,000	.04
* Use this limit of liability to develop premiums for policy amounts less than $1,000.			

Table 301.A.#16(R) Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 350, 360, 370				
Fire – Coverage A – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 350	Territory 360	Territory 370
1	M	$ 24	$ 20	$ 22
	F	32	27	29
2	M	24	20	22
	F	33	27	30
3	M	25	20	23
	F	34	28	31
4	M	25	21	23
	F	34	28	31
5	M	26	21	23
	F	35	29	32
6	M	28	23	25
	F	38	31	34
7	M	29	24	27
	F	40	33	36
8	M	33	28	31
	F	46	38	42
8B, 9, 9E, 9S	M	37	31	34
	F	50	42	46
10	M	45	37	41
	F	61	51	56
* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.				

Table 301.A.#17(R) Fire – Coverage A – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage A	Limit Of Liability (000's)	Coverage A
$ 1*	.38	$ 27	1.48
2	.42	28	1.52
3	.47	29	1.56
4	.51	30	1.60
5	.56	31	1.64
6	.60	32	1.68
7	.65	33	1.72
8	.69	34	1.76
9	.74	35	1.80
10	.78	36	1.84
11	.82	37	1.88
12	.87	38	1.92
13	.92	39	1.96
14	.96	40	2.00
15	1.00	41	2.04
16	1.04	42	2.08
17	1.08	43	2.12
18	1.12	44	2.16
19	1.16	45	2.20
20	1.20	46	2.24
21	1.24	47	2.28
22	1.28	48	2.32
23	1.32	49	2.36
24	1.36	50	2.40
25	1.40	Each Addi-	
26	1.44	tional $1,000	.04
* Use this limit of liability to develop premiums for policy amounts less than $1,000.			

Table 301.A.#18(R) Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 380, 390			
Fire – Coverage A – All Forms – Non-seasonal And Seasonal			
		1 – 5 Families	
Protection Class	Const.*	Territory 380	Territory 390
1	M	$ 20	$ 20
	F	27	28
2	M	20	21
	F	27	28
3	M	20	21
	F	28	29
4	M	21	22
	F	28	29
5	M	21	22
	F	29	30
6	M	23	24
	F	31	32
7	M	24	25
	F	33	34
8	M	28	29
	F	38	39
8B, 9, 9E, 9S	M	31	32
	F	42	43
10	M	37	39
	F	51	53
* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.			

Table 301.A.#19(R) Fire – Coverage A – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage A	Limit Of Liability (000's)	Coverage A
$ 1*	.38	$ 27	1.48
2	.42	28	1.52
3	.47	29	1.56
4	.51	30	1.60
5	.56	31	1.64
6	.60	32	1.68
7	.65	33	1.72
8	.69	34	1.76
9	.74	35	1.80
10	.78	36	1.84
11	.82	37	1.88
12	.87	38	1.92
13	.92	39	1.96
14	.96	40	2.00
15	1.00	41	2.04
16	1.04	42	2.08
17	1.08	43	2.12
18	1.12	44	2.16
19	1.16	45	2.20
20	1.20	46	2.24
21	1.24	47	2.28
22	1.28	48	2.32
23	1.32	49	2.36
24	1.36	50	2.40
25	1.40	Each Addi-	
26	1.44	tional $1,000	.04
* Use this limit of liability to develop premiums for policy amounts less than $1,000.			

Table 301.A.#20(R) Fire – Coverage A – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 110, 120, 130				
Fire – Coverage C – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 110	Territory 120	Territory 130
1	M	$ 3	$ 3	$ 6
	F	4	4	8
2	M	3	3	6
	F	4	4	8
3	M	3	3	6
	F	4	4	9
4	M	3	3	6
	F	4	4	9
5	M	3	3	7
	F	4	4	9
6	M	3	3	7
	F	4	4	10
7	M	3	3	7
	F	5	5	10
8	M	4	4	9
	F	5	5	12
8B, 9, 9E, 9S	M	4	4	9
	F	6	6	13
10	M	5	5	12
	F	7	7	16

* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#21(R) Fire – Coverage C – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage C	Limit Of Liability (000's)	Coverage C
$ 1*	.35	$ 27	3.73
2	.48	28	3.86
3	.61	29	3.99
4	.74	30	4.12
5	.87	31	4.25
6	1.00	32	4.38
7	1.13	33	4.51
8	1.26	34	4.64
9	1.39	35	4.77
10	1.52	36	4.90
11	1.65	37	5.03
12	1.78	38	5.16
13	1.91	39	5.29
14	2.04	40	5.42
15	2.17	41	5.55
16	2.30	42	5.68
17	2.43	43	5.81
18	2.56	44	5.94
19	2.69	45	6.07
20	2.82	46	6.20
21	2.95	47	6.33
22	3.08	48	6.46
23	3.21	49	6.59
24	3.34	50	6.72
25	3.47	Each Addi-	
26	3.60	tional $1,000	.13

* Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#22(R) Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 140, 150, 160				
Fire – Coverage C – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 140	Territory 150	Territory 160
1	M	$ 6	$ 6	$ 7
	F	8	8	10
2	M	6	6	8
	F	8	8	10
3	M	6	6	8
	F	9	9	11
4	M	6	6	8
	F	9	9	11
5	M	7	7	8
	F	9	9	11
6	M	7	7	9
	F	10	10	12
7	M	7	7	9
	F	10	10	12
8	M	9	9	10
	F	12	12	14
8B, 9, 9E, 9S	M	9	9	12
	F	13	13	16
10	M	12	12	14
	F	16	16	19
* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.				

Table 301.A.#23(R) Fire – Coverage C – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage C	Limit Of Liability (000's)	Coverage C
$ 1*	.35	$ 27	3.73
2	.48	28	3.86
3	.61	29	3.99
4	.74	30	4.12
5	.87	31	4.25
6	1.00	32	4.38
7	1.13	33	4.51
8	1.26	34	4.64
9	1.39	35	4.77
10	1.52	36	4.90
11	1.65	37	5.03
12	1.78	38	5.16
13	1.91	39	5.29
14	2.04	40	5.42
15	2.17	41	5.55
16	2.30	42	5.68
17	2.43	43	5.81
18	2.56	44	5.94
19	2.69	45	6.07
20	2.82	46	6.20
21	2.95	47	6.33
22	3.08	48	6.46
23	3.21	49	6.59
24	3.34	50	6.72
25	3.47	Each Addi-	
26	3.60	tional $1,000	.13
* Use this limit of liability to develop premiums for policy amounts less than $1,000.			

Table 301.A.#24(R) Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 170, 180, 190				
Fire – Coverage C – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 170	Territory 180	Territory 190
1	M	$ 9	$ 9	$ 9
	F	12	13	13
2	M	9	10	10
	F	12	13	13
3	M	9	10	10
	F	12	13	13
4	M	9	10	10
	F	13	14	14
5	M	10	10	10
	F	13	14	14
6	M	10	11	11
	F	14	15	15
7	M	11	12	12
	F	15	16	16
8	M	12	13	13
	F	17	18	18
8B, 9, 9E, 9S	M	14	15	15
	F	19	20	20
10	M	17	18	18
	F	23	25	25
* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.				

Table 301.A.#25(R) Fire – Coverage C – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage C	Limit Of Liability (000's)	Coverage C
$ 1*	.35	$ 27	3.73
2	.48	28	3.86
3	.61	29	3.99
4	.74	30	4.12
5	.87	31	4.25
6	1.00	32	4.38
7	1.13	33	4.51
8	1.26	34	4.64
9	1.39	35	4.77
10	1.52	36	4.90
11	1.65	37	5.03
12	1.78	38	5.16
13	1.91	39	5.29
14	2.04	40	5.42
15	2.17	41	5.55
16	2.30	42	5.68
17	2.43	43	5.81
18	2.56	44	5.94
19	2.69	45	6.07
20	2.82	46	6.20
21	2.95	47	6.33
22	3.08	48	6.46
23	3.21	49	6.59
24	3.34	50	6.72
25	3.47	Each Addi-	
26	3.60	tional $1,000	.13
* Use this limit of liability to develop premiums for policy amounts less than $1,000.			

Table 301.A.#26(R) Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 200, 210, 220				
Fire – Coverage C – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 200	Territory 210	Territory 220
1	M	$ 11	$ 9	$ 8
	F	15	12	11
2	M	11	9	8
	F	15	12	11
3	M	11	9	8
	F	15	12	12
4	M	12	9	9
	F	16	13	12
5	M	12	10	9
	F	16	13	12
6	M	13	10	9
	F	17	14	13
7	M	13	11	10
	F	18	15	14
8	M	15	12	11
	F	21	17	16
8B, 9, 9E, 9S	M	17	14	13
	F	23	19	17
10	M	21	17	15
	F	28	23	21
* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.				

Table 301.A.#27(R) Fire – Coverage C – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage C	Limit Of Liability (000's)	Coverage C
$ 1*	.35	$ 27	3.73
2	.48	28	3.86
3	.61	29	3.99
4	.74	30	4.12
5	.87	31	4.25
6	1.00	32	4.38
7	1.13	33	4.51
8	1.26	34	4.64
9	1.39	35	4.77
10	1.52	36	4.90
11	1.65	37	5.03
12	1.78	38	5.16
13	1.91	39	5.29
14	2.04	40	5.42
15	2.17	41	5.55
16	2.30	42	5.68
17	2.43	43	5.81
18	2.56	44	5.94
19	2.69	45	6.07
20	2.82	46	6.20
21	2.95	47	6.33
22	3.08	48	6.46
23	3.21	49	6.59
24	3.34	50	6.72
25	3.47	Each Addi-	
26	3.60	tional $1,000	.13
* Use this limit of liability to develop premiums for policy amounts less than $1,000.			

Table 301.A.#28(R) Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 230, 240, 250				
Fire – Coverage C – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 230	Territory 240	Territory 250
1	M	$ 11	$ 9	$ 8
	F	16	12	11
2	M	12	9	8
	F	16	12	11
3	M	12	9	8
	F	16	12	12
4	M	12	9	9
	F	17	13	12
5	M	12	10	9
	F	17	13	12
6	M	13	10	9
	F	18	14	13
7	M	14	11	10
	F	19	15	14
8	M	16	12	11
	F	22	17	16
8B, 9, 9E, 9S	M	18	14	13
	F	24	19	17
10	M	22	17	15
	F	30	23	21

* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#29(R) Fire – Coverage C – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage C	Limit Of Liability (000's)	Coverage C
$ 1*	.35	$ 27	3.73
2	.48	28	3.86
3	.61	29	3.99
4	.74	30	4.12
5	.87	31	4.25
6	1.00	32	4.38
7	1.13	33	4.51
8	1.26	34	4.64
9	1.39	35	4.77
10	1.52	36	4.90
11	1.65	37	5.03
12	1.78	38	5.16
13	1.91	39	5.29
14	2.04	40	5.42
15	2.17	41	5.55
16	2.30	42	5.68
17	2.43	43	5.81
18	2.56	44	5.94
19	2.69	45	6.07
20	2.82	46	6.20
21	2.95	47	6.33
22	3.08	48	6.46
23	3.21	49	6.59
24	3.34	50	6.72
25	3.47	Each Addi-	
26	3.60	tional $1,000	.13

* Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#30(R) Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 260, 270, 280				
Fire – Coverage C – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 260	Territory 270	Territory 280
1	M	$ 9	$ 7	$ 6
	F	12	9	8
2	M	9	7	6
	F	12	9	8
3	M	9	7	6
	F	12	10	9
4	M	9	7	6
	F	13	10	9
5	M	10	7	7
	F	13	10	9
6	M	10	8	7
	F	14	11	10
7	M	11	8	7
	F	15	11	10
8	M	12	10	9
	F	17	13	12
8B, 9, 9E, 9S	M	14	11	9
	F	19	14	13
10	M	17	13	12
	F	23	18	16
* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.				

Table 301.A.#31(R) Fire – Coverage C – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage C	Limit Of Liability (000's)	Coverage C
$ 1*	.35	$ 27	3.73
2	.48	28	3.86
3	.61	29	3.99
4	.74	30	4.12
5	.87	31	4.25
6	1.00	32	4.38
7	1.13	33	4.51
8	1.26	34	4.64
9	1.39	35	4.77
10	1.52	36	4.90
11	1.65	37	5.03
12	1.78	38	5.16
13	1.91	39	5.29
14	2.04	40	5.42
15	2.17	41	5.55
16	2.30	42	5.68
17	2.43	43	5.81
18	2.56	44	5.94
19	2.69	45	6.07
20	2.82	46	6.20
21	2.95	47	6.33
22	3.08	48	6.46
23	3.21	49	6.59
24	3.34	50	6.72
25	3.47	Each Addi-	
26	3.60	tional $1,000	.13
* Use this limit of liability to develop premiums for policy amounts less than $1,000.			

Table 301.A.#32(R) Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 290, 300, 310				
Fire – Coverage C – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 290	Territory 300	Territory 310
1	M	$ 7	$ 10	$ 7
	F	10	14	10
2	M	8	10	8
	F	10	14	10
3	M	8	11	8
	F	11	14	11
4	M	8	11	8
	F	11	15	11
5	M	8	11	8
	F	11	15	11
6	M	9	12	9
	F	12	16	12
7	M	9	12	9
	F	12	17	12
8	M	10	14	10
	F	14	20	14
8B, 9, 9E, 9S	M	12	16	12
	F	16	21	16
10	M	14	19	14
	F	19	26	19

* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.

Table 301.A.#33(R) Fire – Coverage C – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage C	Limit Of Liability (000's)	Coverage C
$ 1*	.35	$ 27	3.73
2	.48	28	3.86
3	.61	29	3.99
4	.74	30	4.12
5	.87	31	4.25
6	1.00	32	4.38
7	1.13	33	4.51
8	1.26	34	4.64
9	1.39	35	4.77
10	1.52	36	4.90
11	1.65	37	5.03
12	1.78	38	5.16
13	1.91	39	5.29
14	2.04	40	5.42
15	2.17	41	5.55
16	2.30	42	5.68
17	2.43	43	5.81
18	2.56	44	5.94
19	2.69	45	6.07
20	2.82	46	6.20
21	2.95	47	6.33
22	3.08	48	6.46
23	3.21	49	6.59
24	3.34	50	6.72
25	3.47	Each Addi-	
26	3.60	tional $1,000	.13

* Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#34(R) Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 320, 330, 340				
Fire – Coverage C – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 320	Territory 330	Territory 340
1	M	$ 7	$ 8	$ 6
	F	10	11	8
2	M	8	8	6
	F	10	11	8
3	M	8	8	6
	F	11	12	9
4	M	8	9	6
	F	11	12	9
5	M	8	9	7
	F	11	12	9
6	M	9	9	7
	F	12	13	10
7	M	9	10	7
	F	12	14	10
8	M	10	11	9
	F	14	16	12
8B, 9, 9E, 9S	M	12	13	9
	F	16	17	13
10	M	14	15	12
	F	19	21	16
* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.				

Table 301.A.#35(R) Fire – Coverage C – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage C	Limit Of Liability (000's)	Coverage C
$ 1*	.35	$ 27	3.73
2	.48	28	3.86
3	.61	29	3.99
4	.74	30	4.12
5	.87	31	4.25
6	1.00	32	4.38
7	1.13	33	4.51
8	1.26	34	4.64
9	1.39	35	4.77
10	1.52	36	4.90
11	1.65	37	5.03
12	1.78	38	5.16
13	1.91	39	5.29
14	2.04	40	5.42
15	2.17	41	5.55
16	2.30	42	5.68
17	2.43	43	5.81
18	2.56	44	5.94
19	2.69	45	6.07
20	2.82	46	6.20
21	2.95	47	6.33
22	3.08	48	6.46
23	3.21	49	6.59
24	3.34	50	6.72
25	3.47	Each Addi-	
26	3.60	tional $1,000	.13
* Use this limit of liability to develop premiums for policy amounts less than $1,000.			

Table 301.A.#36(R) Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 350, 360, 370				
Fire – Coverage C – All Forms – Non-seasonal And Seasonal				
		1 – 5 Families		
Protection Class	Const.*	Territory 350	Territory 360	Territory 370
1	M	$ 7	$ 6	$ 7
	F	10	8	9
2	M	8	6	7
	F	10	8	9
3	M	8	6	7
	F	11	9	10
4	M	8	6	7
	F	11	9	10
5	M	8	7	7
	F	11	9	10
6	M	9	7	8
	F	12	10	11
7	M	9	7	8
	F	12	10	11
8	M	10	9	10
	F	14	12	13
8B, 9, 9E, 9S	M	12	9	11
	F	16	13	14
10	M	14	12	13
	F	19	16	18
* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.				

Table 301.A.#37(R) Fire – Coverage C – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage C	Limit Of Liability (000's)	Coverage C
$ 1*	.35	$ 27	3.73
2	.48	28	3.86
3	.61	29	3.99
4	.74	30	4.12
5	.87	31	4.25
6	1.00	32	4.38
7	1.13	33	4.51
8	1.26	34	4.64
9	1.39	35	4.77
10	1.52	36	4.90
11	1.65	37	5.03
12	1.78	38	5.16
13	1.91	39	5.29
14	2.04	40	5.42
15	2.17	41	5.55
16	2.30	42	5.68
17	2.43	43	5.81
18	2.56	44	5.94
19	2.69	45	6.07
20	2.82	46	6.20
21	2.95	47	6.33
22	3.08	48	6.46
23	3.21	49	6.59
24	3.34	50	6.72
25	3.47	Each Addi-	
26	3.60	tional $1,000	.13
* Use this limit of liability to develop premiums for policy amounts less than $1,000.			

Table 301.A.#38(R) Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Owner-occupied And Non-owner-occupied Key Premiums – Territories 380, 390			
Fire – Coverage C – All Forms – Non-seasonal And Seasonal			
Protection Class	Const.*	1 – 5 Families	
		Territory 380	Territory 390
1	M	$ 6	7
	F	8	9
2	M	6	7
	F	8	9
3	M	6	7
	F	9	10
4	M	6	7
	F	9	10
5	M	7	7
	F	9	10
6	M	7	8
	F	10	11
7	M	7	8
	F	10	11
8	M	9	10
	F	12	13
8B, 9, 9E, 9S	M	9	11
	F	13	14
10	M	12	13
	F	16	18
* M = Masonry, F = Frame. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame.			

Table 301.A.#39(R) Fire – Coverage C – All Forms – Non-seasonal And Seasonal Owner-occupied And Non-owner-occupied Key Premiums

Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal			
Key Factors			
Limit Of Liability (000's)	Coverage C	Limit Of Liability (000's)	Coverage C
$ 1*	.35	$ 27	3.73
2	.48	28	3.86
3	.61	29	3.99
4	.74	30	4.12
5	.87	31	4.25
6	1.00	32	4.38
7	1.13	33	4.51
8	1.26	34	4.64
9	1.39	35	4.77
10	1.52	36	4.90
11	1.65	37	5.03
12	1.78	38	5.16
13	1.91	39	5.29
14	2.04	40	5.42
15	2.17	41	5.55
16	2.30	42	5.68
17	2.43	43	5.81
18	2.56	44	5.94
19	2.69	45	6.07
20	2.82	46	6.20
21	2.95	47	6.33
22	3.08	48	6.46
23	3.21	49	6.59
24	3.34	50	6.72
25	3.47	Each Addi-	
26	3.60	tional $1,000	.13
* Use this limit of liability to develop premiums for policy amounts less than $1,000.			

Table 301.A.#40(R) Fire – Coverage C – All Forms Owner And Non-owner-occupied – Non-seasonal And Seasonal Key Factors

RULE 301.
BASE PREMIUM COMPUTATION (Cont'd)

Extended Coverage, Broad And Special Forms – Coverage A Key Premiums*				
		Forms		
Territory	Const.*	DP 00 01	DP 00 02	DP 00 03
110	M	163	173	180
	F	172	182	190
	MH	215	229	n/a
120	M	182	193	201
	F	192	203	211
	MH	240	255	n/a
130	M	131	139	144
	F	138	146	152
	MH	172	183	n/a
140	M	141	150	155
	F	149	158	163
	MH	186	198	n/a
150	M	120	127	132
	F	126	134	139
	MH	158	167	n/a
160	M	124	131	136
	F	130	138	143
	MH	163	173	n/a
170	M	59	80	89
	F	62	84	93
	MH	78	105	n/a
180	M	64	87	97
	F	68	92	101
	MH	85	114	n/a
190	M	66	90	100
	F	70	95	105
	MH	88	118	n/a
200	M	83	113	125
	F	88	118	132
	MH	109	148	n/a
210	M	54	72	81
	F	57	76	85
	MH	71	96	n/a
220	M	48	64	72
	F	50	68	75
	MH	63	85	n/a
230	M	76	102	115
	F	80	109	121
	MH	100	135	n/a
240	M	48	65	72
	F	51	69	77
	MH	64	86	n/a

Extended Coverage, Broad And Special Forms – Coverage A Key Premiums*				
		Forms		
Territory	Const.*	DP 00 01	DP 00 02	DP 00 03
250	M	49	66	74
	F	52	70	78
	MH	65	88	n/a
260	M	48	65	72
	F	50	68	75
	MH	63	85	n/a
270	M	35	47	53
	F	37	50	56
	MH	46	62	n/a
280	M	35	47	53
	F	37	50	56
	MH	46	62	n/a
290	M	44	59	66
	F	46	62	69
	MH	58	78	n/a
300	M	41	56	62
	F	43	59	66
	MH	55	74	n/a
310	M	29	39	44
	F	31	42	47
	MH	39	53	n/a
320	M	32	43	48
	F	34	46	51
	MH	43	58	n/a
330	M	35	47	53
	F	37	50	56
	MH	46	62	n/a
340	M	28	38	42
	F	29	39	44
	MH	36	49	n/a
350	M	29	39	44
	F	30	41	45
	MH	38	51	n/a
360	M	28	38	42
	F	29	39	44
	MH	36	49	n/a
370	M	29	39	44
	F	31	42	47
	MH	39	53	n/a
380	M	26	35	39
	F	27	36	41
	MH	34	46	n/a

RULE 301.
PREMIUM COMPUTATION (Cont'd)

Extended Coverage, Broad And Special Forms – Coverage A Key Premiums*				
		Forms		
Territory	Const.*	DP 00 01	DP 00 02	DP 00 03
390	M	26	35	39
	F	27	36	41
	MH	34	46	n/a

* **DP 00 01** Key Premiums are Non-seasonal and Seasonal. **DP 00 02** and **DP 00 03** Key Premiums are Non-seasonal only and include the charge for Extended Coverage and Vandalism and Malicious Mischief perils. M = Masonry, F = Frame, MH = Mobile Home. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame. **DP 00 02** Key Premiums for MH should be used in conjunction with Actual Cash Value Loss Settlement Endorsement **DP 04 76** Only; see Rule **305.**

Table 301.A.#41(R) Extended Coverage, Broad And Special Forms – Coverage A Key Premiums

To develop the Seasonal Base Premiums, multiply the following factors by the **DP 00 01** Extended Coverage Base Premiums:

Territory	DP 00 02	DP 00 03
110-160	1.10	1.20
170-390	1.50	1.55

Table 301.A.#42(R) Extended Coverage, Broad And Special Forms – Coverage A Seasonal Key Premiums Forms DP 00 02 And DP 00 03

Extended Coverage, Broad And Special Forms – Coverage A			
Key Factors			
Limit Of Liability (000's)	Coverage A	Limit Of Liability (000's)	Coverage A
$ 1*	.24	$ 27	1.64
2	.29	28	1.69
3	.34	29	1.74
4	.40	30	1.79
5	.45	31	1.84
6	.51	32	1.89
7	.56	33	1.94
8	.62	34	1.99
9	.67	35	2.04
10	.72	36	2.09
11	.78	37	2.14
12	.83	38	2.19
13	.89	39	2.24
14	.94	40	2.29

Extended Coverage, Broad And Special Forms – Coverage A			
Key Factors			
Limit Of Liability (000's)	Coverage A	Limit Of Liability (000's)	Coverage A
15	1.00	41	2.34
16	1.05	42	2.39
17	1.10	43	2.44
18	1.16	44	2.49
19	1.21	45	2.54
20	1.27	46	2.59
21	1.32	47	2.64
22	1.37	48	2.69
23	1.43	49	2.74
24	1.48	50	2.79
25	1.54	Each Addi-	
26	1.59	tional $1,000	.05

* Use this limit of liability to develop premiums for policy amounts less than $1,000.

Table 301.A.#43(R) Extended Coverage, Broad And Special Forms – Coverage A Key Factors

Extended Coverage, Broad And Special Forms – Coverage C Key Premiums*				
		Forms		
Territory	Const.*	DP 00 01	DP 00 02	DP 00 03
110	M	23	24	25
	F	24	25	26
	MH	31	33	n/a
120	M	27	30	31
	F	28	31	32
	MH	36	38	n/a
130	M	20	21	22
	F	21	22	23
	MH	26	27	n/a
140	M	20	21	22
	F	21	22	23
	MH	26	27	n/a
150	M	10	11	11
	F	11	12	12
	MH	14	15	n/a
160	M	13	14	14
	F	14	15	15
	MH	18	19	n/a
170	M	5	7	8
	F	5	7	8
	MH	6	8	n/a

RULE 301.
PREMIUM COMPUTATION (Cont'd)

Extended Coverage, Broad And Special Forms – Coverage C Key Premiums*				
		Forms		
Territory	Const.*	DP 00 01	DP 00 02	DP 00 03
180	M	6	8	9
	F	6	8	9
	MH	8	11	n/a
190	M	8	10	13
	F	8	10	13
	MH	10	14	n/a
200	M	11	16	17
	F	11	16	17
	MH	15	21	n/a
210	M	4	5	6
	F	4	5	6
	MH	5	7	n/a
220	M	3	4	5
	F	3	4	5
	MH	4	5	n/a
230	M	9	12	14
	F	9	12	14
	MH	11	15	n/a
240	M	3	4	5
	F	3	4	5
	MH	4	5	n/a
250	M	3	4	5
	F	3	4	5
	MH	4	5	n/a
260	M	2	3	3
	F	2	3	3
	MH	3	4	n/a
270	M	2	3	3
	F	2	3	3
	MH	3	4	n/a
280	M	2	3	3
	F	2	3	3
	MH	3	4	n/a
290	M	2	3	3
	F	2	3	3
	MH	3	3	n/a
300	M	4	5	6
	F	4	5	6
	MH	5	7	n/a

Extended Coverage, Broad And Special Forms – Coverage C Key Premiums*				
		Forms		
Territory	Const.*	DP 00 01	DP 00 02	DP 00 03
310	M	1	1	2
	F	1	1	2
	MH	1	1	n/a
320	M	1	1	2
	F	1	1	2
	MH	1	1	n/a
330	M	1	1	2
	F	1	1	2
	MH	1	1	n/a
340	M	1	1	2
	F	1	1	2
	MH	1	1	n/a
350	M	1	1	2
	F	1	1	2
	MH	1	1	n/a
360	M	2	3	3
	F	2	3	3
	MH	3	3	n/a
370	M	2	3	3
	F	2	3	3
	MH	3	3	n/a
380	M	1	1	2
	F	1	1	2
	MH	1	1	n/a
390	M	1	1	2
	F	1	1	2
	MH	1	1	n/a

* **DP 00 01** Key Premiums are Non-seasonal and Seasonal. **DP 00 02** and **DP 00 03** Key Premiums are Non-seasonal only and include the charge for Extended Coverage and Vandalism and Malicious Mischief perils. M = Masonry, F = Frame, MH = Mobile Home. Masonry Veneer is rated as masonry. Aluminum or plastic siding over frame is rated as frame. **DP 00 02** Key Premiums for MH should be used in conjunction with Actual Cash Value Loss Settlement Endorsement **DP 04 76** Only; see Rule **305.**

Table 301.A.#44(R) Extended Coverage, Broad And Special Forms – Coverage C Key Premiums

RULE 301.
PREMIUM COMPUTATION (Cont'd)

To develop the Seasonal Base Premiums, multiply the following factors by the **DP 00 01** Extended Coverage Base Premiums:

Territory	DP 00 02	DP 00 03
110-160	1.10	1.20
170-390	1.50	1.55

Table 301.A.#45(R) Extended Coverage, Broad And Special Forms – Coverage C Seasonal Key Premiums Forms DP 00 02 And DP 00 03

Extended Coverage, Broad And Special Forms – Coverage C			
Key Factors			
Limit Of Liability (000's)	**Coverage C**	**Limit Of Liability (000's)**	**Coverage C**
$ 1*	.17	$ 27	4.51
2	.33	28	4.68
3	.50	29	4.85
4	.67	30	5.02
5	.83	31	5.19
6	1.00	32	5.36
7	1.17	33	5.53
8	1.34	34	5.70
9	1.50	35	5.87
10	1.67	36	6.04
11	1.84	37	6.21
12	2.00	38	6.38
13	2.17	39	6.55
14	2.33	40	6.72
15	2.50	41	6.89
16	2.67	42	7.06
17	2.84	43	7.23
18	3.00	44	7.40
19	3.17	45	7.57
20	3.34	46	7.74
21	3.51	47	7.91
22	3.67	48	8.08
23	3.84	49	8.25
24	4.00	50	8.42
25	4.17	Each Addi-	
26	4.34	tional $1,000	.17
* Use this limit of liability to develop premiums for policy amounts less than $1,000.			

Table 301.A.#46(R) Extended Coverage, Broad And Special Forms – Coverage C Key Factors

RULE 302.
VANDALISM AND MALICIOUS MISCHIEF – (DP 00 01)

Rates Per $1,000	
Not Seasonal or Vacant	$ .17
Seasonal and Not Vacant	1.40
Vacant	9.30
In Course of Construction	.19

Table 302.(R) Vandalism And Malicious Mischief (DP 00 01)

RULE 404.
MOBILE OR TRAILER HOMES – (DP 00 01 ONLY OR DP 00 02 WITH DP 04 76)

Multiply the Frame Construction, Coverage **A** or **C** Base Premium by .9 for Fire and multiply the Mobile Home Construction, Coverage **A** or **C** Base Premium by 1.00 for Extended Coverage.

RULE 406.
DEDUCTIBLES

B. Optional Deductibles

The Minimum Additional Charge is $25.00.

RULE 500.
MISCELLANEOUS LOSS COSTS

Rates Per $1,000*	
Exposure	**Rates**
A. Fire: Protection Class 1 – 8	$ 2.50
Fire: Protection Class 8B, 9, 9E, 9S & 10	4.50
B. Extended Coverage **(DP 00 01)**	1.00
C. Broad Form **(DP 00 02)**	1.50
D. Special Form **(DP 00 03)**	2.00
E. Broad Form **(DP 00 02)** with Endorsement **DP 04 65**	2.00
* These rates apply to all occupancies, territories, construction and protection classifications, unless otherwise specified. Rates for **A.** are cumulative with either **B., C., D.,** or **E.**	

Table 500.(R) Miscellaneous Rates

RULE 507.
FIRE DEPARTMENT SERVICE CHARGE

The Additional Rate per $1,000 of insurance is $15.00.

RULE 508.
TREES, SHRUBS AND OTHER PLANTS

C. Premium Computation

1. Fire, Extended Coverage, Broad And Special Forms

The rates in the following table apply to all occupancies, territories, construction and protection classifications, unless otherwise specified:

Fire (DP 00 01)	
Protection Class	**Rates Per $1,000**
1 – 8	$ 2.50
8B, 9, 9E, 9S & 10	4.50

Extended Coverage (DP 00 01) – All Specified Perils		
	Rates Per $1,000	
Territory	**Including Wind Or Hail**	**Excluding Wind Or Hail**
110-120	$ 57.00	$ 1.00
130-160	29.00	1.00
170-290	15.00	1.00
300-390	13.10	1.00

Windstorm Or Hail (DP 00 02 And DP 00 03)	
Territory	**Rates Per $1,000**
110-120	$ 56.00
130-160	28.00
170-290	14.00
300-390	12.10

Table 508.C.1.(R) Premium Computation

RULE 509.
EARTHQUAKE COVERAGE

D. Premium For Base Deductible

	Zone	Frame*	Masonry*	Superior
Table A				
Coverages **A, B, D** Or **E**	3	$ .36	$ 1.72	$ .68
Improvements, etc.	4	.23	1.05	.39
& Other Building Options	5	.18	.57	.27
Table B				
Coverage **C** & Other	3	$ .36	$ 1.43	$ .36
Personal Property	4	.23	.82	.23
Options	5	.18	.57	.18
* If exterior Masonry Veneer is covered, rate as Masonry; if not covered – rate as Frame.				

Zone Definitions		
Zone 3		
Anson	Davie	Richmond
Brunswick	Gaston	Robeson
Cabarrus	Iredell	Rowan
Catawba	Lincoln	Scotland
Cleveland	Mecklenburg	Stanly
Columbus	Montgomery	Union
Zone 4		
Alexander	Forsyth	Pender
Alleghany	Graham	Polk
Ashe	Haywood	Randolph
Avery	Henderson	Rutherford
Bladen	Hoke	Surry
Buncombe	Jackson	Swain
Burke	Macon	Transylvania
Caldwell	Madison	Watauga
Cherokee	McDowell	Wilkes
Clay	Mitchell	Yadkin
Cumberland	Moore	Yancey
Davidson	New Hanover	
Zone 5		
Balance of State		

Table 509.D.1.(R) Premium For Base Deductible 5% Deductible

RULE 511.
SINKHOLE COLLAPSE COVERAGE

Rates Per $1,000	
Cov. **A** or **B** and Other Bldg. Options	$ .30
Cov. **C** or Personal Property Options	.10

Table 511.B.1.(R) Premium Computation

RULE 512.
WINDSTORM OR HAIL COVERAGE – MISCELLANEOUS PROPERTIES

Rates Per $1,000				
	Territories			
	110-120	130-160	170-290	300-390
1. Signs				
All Metal	$ 33.60	$ 16.80	$ 12.10	$ 11.20
Other Construction	112.00	56.00	44.30	38.70
2. Cloth Awnings	56.00	28.00	14.00	12.10
3. Radio Or Television Equipment	112.00	56.00	44.30	32.70
4. Swimming Pools – Construction Of Pool And Related Structures*				
Masonry, Uncovered	.94	.47	.37	.28
Masonry, With Combustible Superstructures (Including Roof) And/Or Fencing – Pool Only	.94	.47	.37	.28
Masonry, With Combustible Superstructures (Including Roof) And/Or Fencing – Superstructure And/Or Fencing	32.60	16.30	11.20	8.40
Other Construction With Or Without Roof	32.60	16.30	11.20	8.40
Inflated Enclosure Or Covering Of Plastic Material	168.00	84.00	65.30	56.00
5. Screens (Including Supports)	32.60	16.30	11.20	8.40
6. Fences And Walls				
Masonry, Iron Or Reinforced Concrete	2.80	1.40	1.12	1.03
Other Construction	56.00	28.00	14.00	12.10
7. Bathhouses, Cabanas, Pergolas, Slathouses, Trellises; Structures Over Water				
Masonry	4.67	2.33	1.49	1.31
Other Construction – Fully Enclosed	6.53	3.27	1.96	1.68
Other Construction – Not Fully Enclosed	17.72	8.86	7.00	6.53
8. Outdoor Equipment	4.80	2.40	2.12	2.03
9. Greenhouses Or Hothouses				
Structures Including Glass, Flowers And Plants	130.60	65.30	61.10	60.60
If insured separately: Structure	11.56	5.78	4.67	4.48
Glass	66.20	33.10	31.30	30.80
Flowers And Plants	87.80	43.90	40.60	40.10

* If any part of a pool's enclosure or roof is made of plastic film or cloth, supported on wood framing, the entire pool is subject to the rates displayed for Inflated Enclosure or Covering of Plastic Material.

Table 512.D.(R) Premium Windstorm Or Hail Coverage – Miscellaneous Properties

RULE 513.
LIMITED WATER BACK-UP AND SUMP DISCHARGE OR OVERFLOW COVERAGE

C. Premium Computation

Charge per location is:

Limit	Rate
$ 5,000	$ 8.00
10,000	15.00
15,000	19.00
20,000	22.00
25,000	24.00

Table 513.C.(R) Premium Computation

RULE 514.
ASSISTED LIVING CARE

C. Premium

For Basic Limits, the rate per unit is $55.38.

For increased Coverage **C** Limit, the rate per $1,000 is $6.38.

1. TERRITORY ASSIGNMENTS

If a territory shown is defined in terms of United States Postal Service (USPS) ZIP code:

A. Determine the applicable rating territory based on the location of the dwelling.

B. An insured's rates shall not be changed solely because the USPS changed his or her ZIP code and the physical boundaries of a rating territory shall be determined by the ZIP code boundaries in effect at the time of the latest rate filing defining the territory.

Territory boundaries in North Carolina are concurrent with USPS ZIP code boundaries in effect as of **July 1, 2013**. If the USPS introduces a new ZIP code or realigns a ZIP code boundary after **July 1, 2013**, the new ZIP code may not yet be listed in Rule **2.C.** If this is the case, assign the rating territory based on the ZIP code boundary that formerly applied to the dwelling before the USPS changed the ZIP code.

2. TERRITORY DEFINITIONS – (For all Coverages and Perils Other than Earthquake).

Assign the applicable territory using the following order of priority:

A. Counties

County of	Code
Alamance	310
Alexander	340
Alleghany	360
Anson	300
Ashe	360
Avery	370
Beaufort	150
Bertie	180
Bladen	230
Buncombe	360
Burke	360
Cabarrus	320
Caldwell	360
Camden	150
Caswell	310
Catawba	360
Chatham	280
Cherokee	390
Chowan	150
Clay	390
Cleveland	350
Columbus	200
Craven	150
Cumberland	220
Currituck (other than Beach Areas)	130
Dare (other than Beach Areas)	130
Davidson	320
Davie	310
Duplin	190
Durham	270
Edgecombe	210
Forsyth	310
Franklin	240
Gaston	350
Gates	170
Graham	390
Granville	260
Greene	180
Guilford	310
Halifax	240
Harnett	250
Haywood	380
Henderson	360
Hertford	170
Hoke	250
Hyde (other than Beach Areas)	130
Iredell	340
Jackson	390
Johnston	240
Jones	150
Lee	290
Lenoir	190
Lincoln	350
Macon	390
Madison	380
Martin	180
McDowell	360
Mecklenburg	340
Mitchell	370
Montgomery	300
Moore	290

County of	Code
Nash	240
Northampton	240
Orange	280
Pamlico	130
Pasquotank	150
Perquimans	150
Person	260
Pitt	180
Polk	360
Randolph	320
Richmond	300
Robeson	230
Rockingham	310
Rowan	320
Rutherford	350
Sampson	220
Scotland	250
Stanly	340
Stokes	310
Surry	310
Swain	380
Transylvania	380
Tyrrell	150
Union	340
Vance	260
Wake	270
Warren	260
Washington	150
Watauga	360
Wayne	180
Wilkes	340
Wilson	210
Yadkin	330
Yancey	360

B. Beach Areas

Beach Area – Localities south and east of the Inland Waterway from the South Carolina Line to Fort Macon (Beaufort Inlet), thence south and east of Core, Pamlico, Roanoke and Currituck Sounds to the Virginia Line, being those portions of land generally knows as the "Outer Banks".

Beach Areas in Currituck, Dare and Hyde Counties: 110

Beach Areas in Brunswick, Carteret, New Hanover, Onslow and Pender Counties: 120

C. Other Than Beach Areas of Brunswick, Carteret, New Hanover, Onslow and Pender Counties

For areas of Brunswick, Carteret, New Hanover, Onslow and Pender Counties, other than the Beach Areas, refer to the following ZIP codes. If portions of these ZIP codes fall in Counties other than Brunswick, Carteret, New Hanover, Onslow and Pender Counties use the territory code for those counties.

1. Eastern Coastal Territory

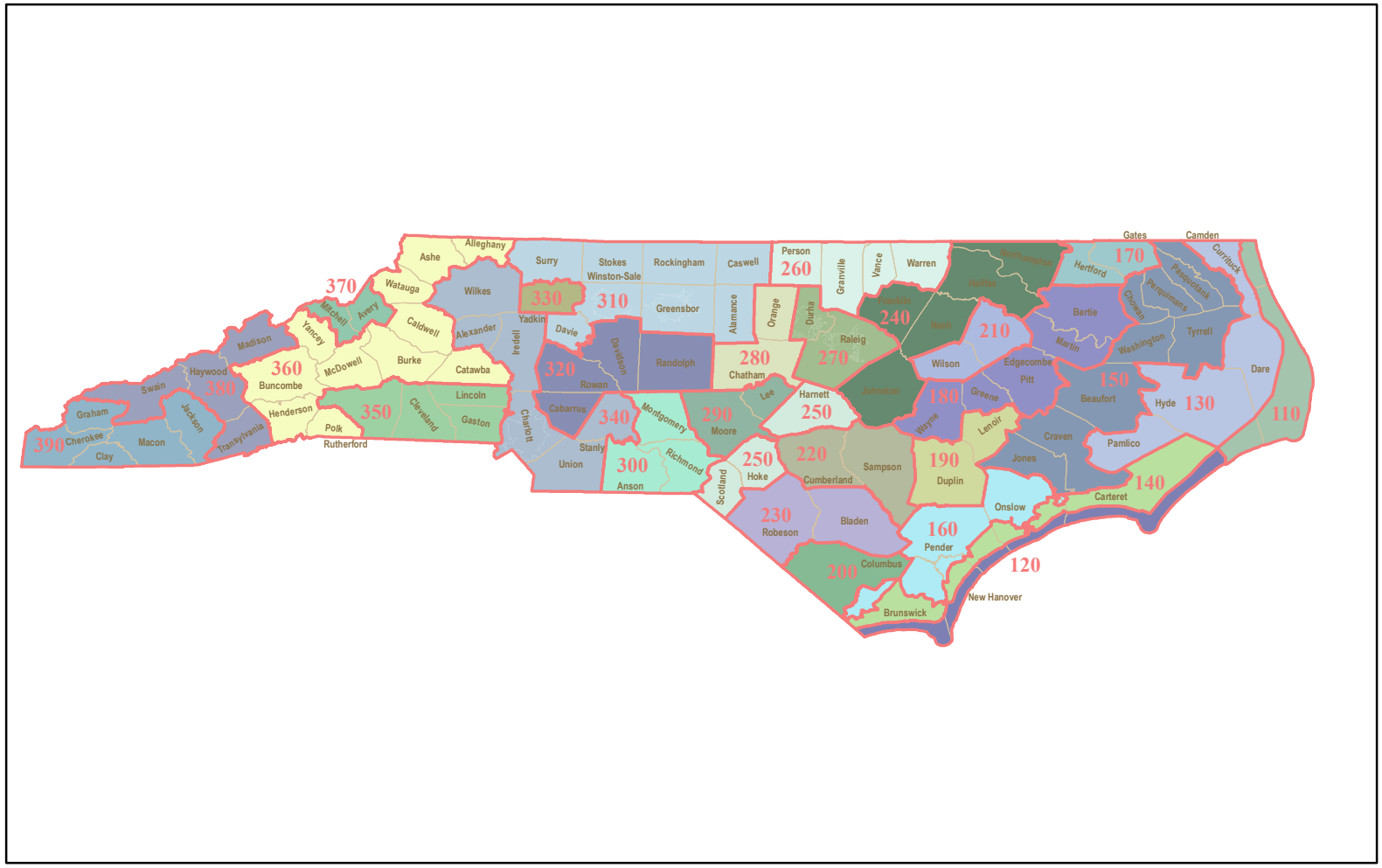
ZIP Code	USPS ZIP Code Name	Code
28403	Wilmington	140
28404	Wilmington	140
28405	Wilmington	140
28406	Wilmington	140
28407	Wilmington	140
28408	Wilmington	140
28409	Wilmington	140
28410	Wilmington	140
28411	Wilmington	140
28412	Wilmington	140
28422	Bolivia	140
28428	Carolina Beach	140
28443	Hampstead	140
28445	Holly Ridge	140
28459	Shallotte	140
28460	Sneads Ferry	140
28461	Southport	140
28462	Supply	140
28467	Calabash	140
28468	Sunset Beach	140
28469	Ocean Isle Beach	140
28470	Shallotte	140
28480	Wrightsville Beach	140
28511	Atlantic	140
28516	Beaufort	140
28520	Cedar Island	140
28524	Davis	140
28528	Gloucester	140
28531	Harkers Island	140
28532	Havelock	140
28533	Cherry Point	140
28539	Hubert	140
28553	Marshallberg	140
28557	Morehead City	140
28570	Newport	140
28577	Sealevel	140
28579	Smyrna	140
28581	Stacy	140
28584	Swansboro	140
28589	Williston	140

2. Western Coastal Territory

ZIP Code	USPS ZIP Code Name	Code
28401	Wilmington	160
28402	Wilmington	160
28420	Ash	160
28421	Atkinson	160
28425	Burgaw	160
28429	Castle Hayne	160
28435	Currie	160
28436	Delco	160
28447	Ivanhoe	160
28448	Kelly	160
28451	Leland	160
28452	Longwood	160
28454	Maple Hill	160
28456	Riegelwood	160
28457	Rocky Point	160
28466	Wallace	160
28478	Willard	160
28479	Winnabow	160
28518	Beulaville	160
28521	Chinquapin	160
28540	Jacksonville	160
28541	Jacksonville	160
28542	Camp Lejeune	160
28543	Tarawa Terrace	160
28544	Midway Park	160
28545	McCutcheon Field	160
28546	Jacksonville	160
28547	Camp Lejeune	160
28555	Maysville	160
28574	Richlands	160
28582	Stella	160

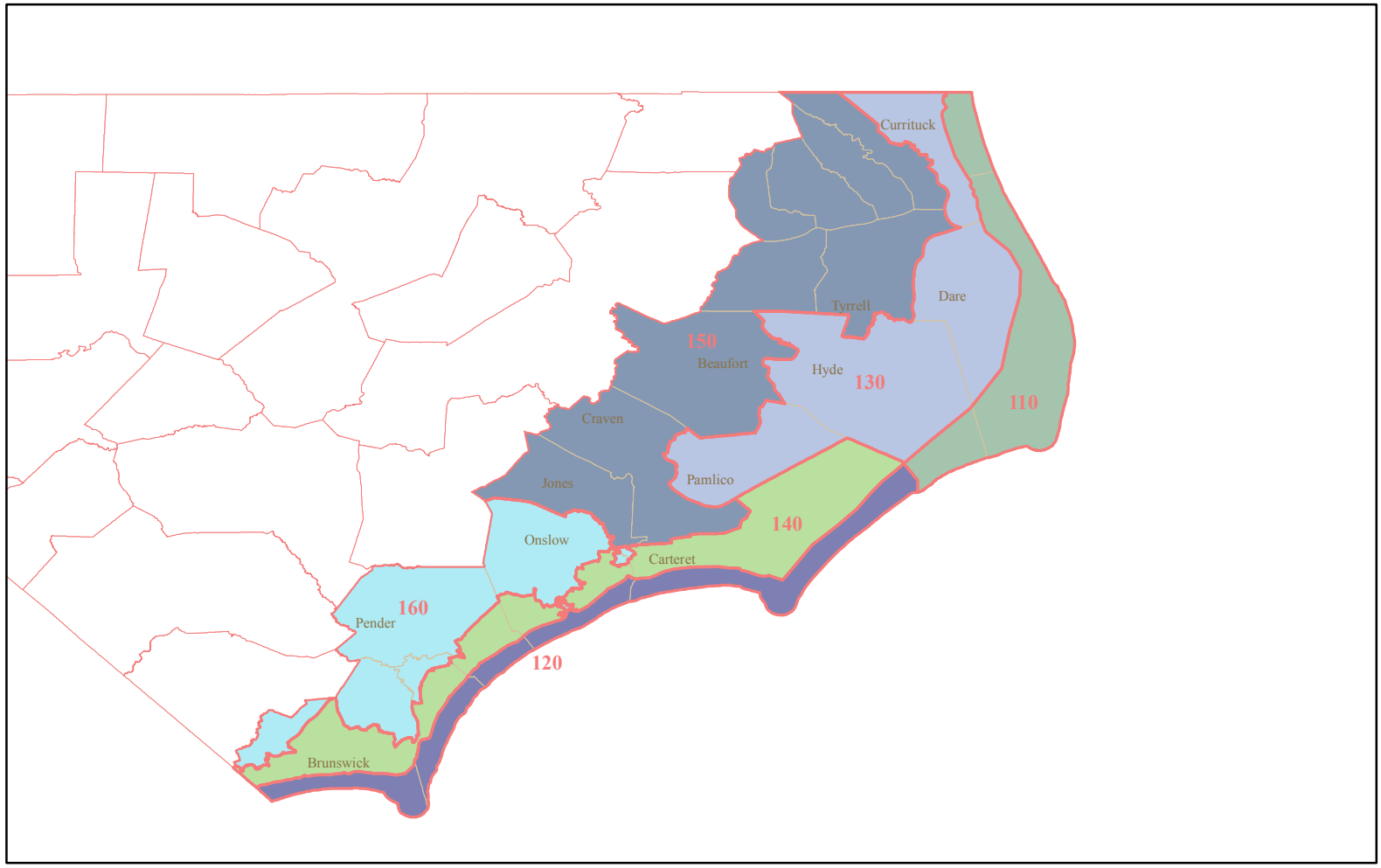
Dwelling and Homeowner Territories

Statewide



Dwelling and Homeowner Territories

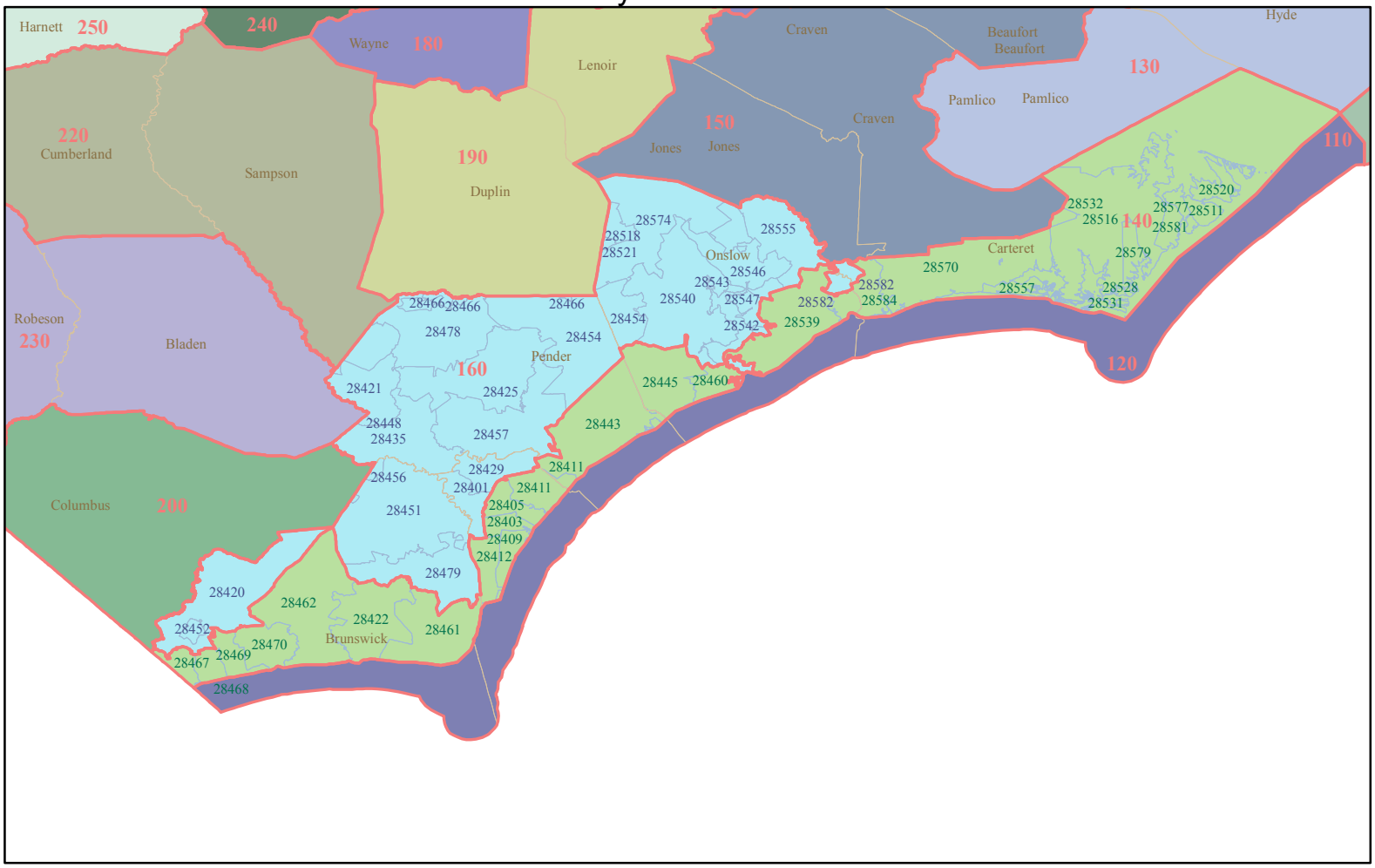
Beach and Coastal Area



Dwelling and Homeowner Territories

Southern Beach and Coastal Area

By ZIP Code



PREFILED TESTIMONY
OF
PAUL ERICKSEN

2020 DWELLING INSURANCE
RATE FILING BY THE
NORTH CAROLINA RATE BUREAU

Q: Please state your name and business address.

A: My name is Paul Ericksen. My business address is Insurance Services Office, 545 Washington Boulevard, Jersey City, New Jersey.

Q: Please describe your educational background and your background in actuarial science.

A: I graduated from Princeton University in 1992 with a B.A. in mathematics.

I became a Fellow of the Casualty Actuarial Society (CAS) in 1995 and am a member of the American Academy of Actuaries (AAA). I am in good standing with those organizations.

I served as a member of the CAS Examination Committee from 1996 through 2009, and I have given multiple presentations at CAS meetings.

Q: By whom are you employed?

A: I am employed by Insurance Services Office (ISO) and started employment at ISO in 1992.

Q: What are your current responsibilities at ISO?

A: I lead the Actuarial Consulting unit at ISO. ISO's Actuarial Consulting unit specializes in providing a wide array of consulting services to individual companies. I have been responsible for managing, overseeing, and developing customized actuarial analyses including ratemaking, reserving, and other miscellaneous studies. I have provided services to insurers, captives, managing general agents, law firms, and insurance departments.

Q: What is your employment background?

A: I started my career in 1992 as an actuarial assistant in the increased limits division of ISO. In 1993, I left ISO and spent a year as a consulting actuary in the New York office of Milliman, working primarily on medical malpractice projects. I returned to ISO in 1994 as an actuarial associate in the Financial Analysis division. In 1999, I

transferred to ISO's Actuarial Consulting unit and assisted clients as a consulting actuary. In 2007, I was promoted to Principal of the Actuarial Consulting unit.

During the past 21 years that I have provided actuarial consulting services, I have worked on a wide range of projects involving several different lines of insurance within the property/casualty insurance industry. I have prepared rate analyses for Homeowners, Dwelling, and other lines of insurance. I have also conducted reserve analyses as the Appointed Actuary for several insurers.

A large part of my consulting experience has dealt with property insurance in areas of the country that have exposure to hurricane losses. For example, I was the Appointed Actuary for Citizens Property Insurance Corporation of Florida ("Citizens") for four years (2004, 2005, 2007 and 2009), and was also responsible for preparing rate analyses for Citizens' Homeowners, Mobile Home, Dwelling, and Commercial Property programs. Citizens is the insurer of last resort in Florida, and has been one of the largest property insurers in the state. In addition to work performed on behalf of Citizens, I have also conducted ratemaking and reserving projects for several voluntary insurers that write Homeowners and Dwelling business in Florida. I have developed indicated rates for both multi-peril policies and wind-only policies. I have extensive experience working with multiple hurricane models (including both AIR and RMS) and developing provisions for the cost of reinsurance.

In North Carolina, I have provided actuarial consulting services to both the North Carolina Insurance Underwriting Association ("NCIUA") and the North Carolina Joint Underwriting Association ("NCJUA"). Those organizations rely upon the rates set in filings by the North Carolina Rate Bureau ("Bureau").

Q: Are you familiar with dwelling insurance ratemaking in North Carolina and other states?

A: Yes. ISO has provided actuarial consulting to the Bureau on North Carolina dwelling rate filings since the Bureau was created. I have extensive knowledge of the methodologies employed by ISO and the Bureau in this filing as well as in past Bureau dwelling filings. I provided written testimony in support of the Bureau's 2019 dwelling rate filing.

As part of a consulting assignment that I performed for the NCIUA and NCJUA, I have also reviewed prior filings by the Bureau on which ISO provided actuarial consulting and filing preparation assistance. I have prepared many dwelling rate analyses in several different states. In addition, I have testified as an expert witness in support of my clients' dwelling rate filings in various hearings that were held in Florida and Massachusetts. In Florida, I have testified in support of rate filings submitted by Citizens.

Q: What work has ISO performed with respect to the Bureau's 2020 dwelling rate filing in North Carolina?

A: First, ISO, as a licensed statistical agent in North Carolina, collects dwelling insurance data from a significant number of the companies writing that line in North Carolina, as well as from the North Carolina Insurance Underwriting Association (commonly called the “NCIUA” or the "Beach Plan") and the North Carolina Joint Underwriting Association (commonly called the “NCJUA” or the “Fair Plan”) which are the residual market mechanisms.

Second, ISO collects, reviews and compiles data from three other statistical organizations licensed in North Carolina that collect residential dwelling data from Bureau member companies. All companies writing dwelling insurance in North Carolina must report to one of these four organizations. The other three organizations are: the Independent Statistical Service (ISS), the American Association of Insurance Services (AAIS) and the National Independent Statistical Service (NISS).

Third, ISO provides consulting actuarial services directly to the Bureau. As in the past, ISO staff compiled the ratemaking data to be reviewed by the Bureau’s Property Rating Subcommittee, Property Committee and Governing Committee in preparation of rate reviews and filings.

Fourth, ISO staff put together much of the data, information and calculations contained in Exhibit RB-1. This lengthy process was performed under the direction of the Bureau committees. ISO staff attended meetings of those Bureau committees.

Finally, I have reviewed the filed rates to determine if they are calculated in accordance with the CAS guidance, including the Statement of Principles Regarding Property and Casualty Insurance Ratemaking and the Actuarial Standards of Practice. In accordance with Actuarial Standard of Practice No. 17 Expert Testimony by Actuaries, I conducted my review in terms of reasonableness rather than solely in terms of whether there is precise agreement on each issue. In addition, I applied the applicable rate standards set forth in Article 36 of Chapter 58 of the North Carolina General Statutes, including but not limited to N.C.G.S. 58-36-10, i.e., that rates must not be excessive, inadequate or unfairly discriminatory and that certain statutory rating factors must be considered.

Q: What is the source of the data utilized in Exhibit RB-1?

A: The Bureau has the responsibility of filing forms and making rates for all residential dwelling insurance policies written in North Carolina (with the exception of such policies that may be written by county farm mutuals pursuant to N.C.G.S. 58-36-50). ISO, on behalf of the Bureau, combines the data as to those policies in its filings as if there were a single company with the aggregate loss experience of all those policies. Rates are then analyzed in rate filings as if those rates were being made for this hypothetical one company. The ratemaking data reflected in Exhibit RB-1 is, in general, based on the aggregate dwelling experience of the individual insurance

companies that write residential dwelling policies in North Carolina, together with the experience written on dwelling insurance policies in the residual market as described below. Those entities submit their data to one of the four statistical agents described above. The four statistical agents subject each entity's data to a series of verification edits and then consolidate the individual company data. The non-ISO statistical agents then transmit their consolidated data to ISO for final review and consolidation with the ISO data. After consolidating the data, ISO produces exhibits of the combined data in a format and detail necessary for review by the Bureau committees and ultimately for use in rate filings.

The statistical agents are licensed by the Commissioner of Insurance in North Carolina. They have collected, reviewed, compiled and submitted the data underlying this filing in the regular course of their business responsibilities.

After this rate review was underway, the Bureau learned that the vast majority of the data provided by NISS was not residential dwelling insurance experience written using the Bureau's program forms and rates. As a consequence, the statistical data provided by NISS has been excluded from the NCRB's dwelling rate analysis. Also, let me note that, any time I reference dwelling insurance, dwelling policies, or dwelling experience in this testimony, I am referring to residential dwelling insurance written using the Bureau's program.

Q. Please describe what are commonly called the "Beach Plan" and the "FAIR Plan" and the role of their loss data in this filing?

A. They are both residual market organizations that write policies for those policyholders who can't obtain insurance in the voluntary market.

The term "Beach Plan" is a commonly used name for the North Carolina Insurance Underwriting Association. It is a residual market organization created by the North Carolina legislature in Article 45 of Chapter 58. It writes dwelling, homeowners, and other types of insurance for policyholders in the 18 coastal counties. It uses forms, rules and rates filed by the Bureau. Although voluntary insurers have chosen not to accept the risk of writing policies that have been written by the Beach Plan, North Carolina law requires voluntary insurers to pay any losses that that exceed the Beach Plan's resources, up to an aggregate statutory cap of $1 billion annually. The significance of such non-recoupable assessments on the companies is discussed later in my testimony.

The Beach Plan uses the same dwelling forms that are used by voluntary companies. Those forms have been prepared and filed by the Bureau on behalf of all member companies. The Beach Plan writes policies in its own name. The Beach Plan receives and retains premiums, adjusts losses, reports statistics and operates in a manner similar to voluntary insurance companies in many respects. It uses dwelling forms and rates filed by the Bureau, except that it applies a 5% statutory surcharge on the wind and hail rate where it writes only the wind and hail coverage on dwelling

policies. When the Beach Plan reports its statistical data to ISO, ISO reviews those statistical data in the same manner that it does for voluntary companies.

The second residual market mechanism in North Carolina is the called the North Carolina Joint Underwriting Association or Fair Access to Insurance Requirements organization (commonly called the "FAIR Plan.") It writes in all areas of the state except the beach. It writes dwelling fire and extended coverage policies but does not write homeowners policies. No surcharge is applied to FAIR Plan policies.

Statutes distinguish between the "beach" and "coastal" areas under the Beach Plan's jurisdiction. Approximately 96% of dwelling premium in the "beach" territories (territories 110 and 120) was written by the Beach Plan in 2018. In the "coastal" territories (territories 130, 140, 150 and 160), approximately 77% of the dwelling premium was written in either the Beach Plan or the FAIR Plan. On a statewide basis, approximately 61% of dwelling premium was written in either the Beach Plan or FAIR Plan.

Over the years, the Beach and FAIR Plan's large market share reflects the fact that voluntary companies are unwilling to write in coastal areas where the manual rate level is inadequate. This high market share has occurred despite the fact that the legislature intended the Beach Plan to be the "market of last resort" in those areas.

Loss and exposure data from these two residual market organizations have always been included in Bureau property filings for the line of insurance (the homeowners line of insurance or the dwelling fire and extended coverage line of insurance) under review, in the same manner as loss and exposure data from voluntary insurance companies that write that line of insurance. It is actuarially appropriate and necessary to include the residual market data with the voluntary data to ensure that the rates developed are representative of the entire market, since every policy has the potential to be written in the voluntary market.

Q: What statistical data supporting the filing are contained in Exhibit RB-1?

A: In general, the supporting data for the rate level changes are contained in Section C. The most recent five years of experience are displayed in Section C.

The loss experience used in the filing is what we call "accident year" experience for the years ended December 31, 2014 through December 31, 2018. This is the most recent five years of data available. I can explain what is meant by accident year experience by providing an example. The losses for the accident year ended December 31, 2018 consist of all losses caused by accidents which occurred during the one-year period ended December 31, 2018. If an accident occurred on December 29, 2018 and resulted in either a loss being paid or a reserve being established after January 1, 2019, that loss would be a part of the accident year losses for the period ended December 31, 2018. The basis for assigning losses to individual accident years is the date the accident occurred. The term "accident year"

is an insurance accounting term that includes the various incidents that give rise to a dwelling insurance claim, including fires, hurricanes, tornados, etc. during a 12-month period.

Q: What is the reason for using five years of data to determine the indicated rate level change?

A: Ratemaking is prospective in nature. The objective is to set rates at the level that is sufficient to pay expected losses, expected expenses, and to allow insurance companies to earn a reasonable margin for profit. This is the fundamental equation in insurance ratemaking for determining an adequate rate level; i.e., a rate level that is not "excessive, inadequate or unfairly discriminatory" as required by law.

Rates are set for the period when they will be in effect, which is often the year after the effective date of the filing. The assumed effective date for this filing is September 1, 2021. Historical loss data are generally used for the purpose of projecting expected losses. The North Carolina statutes allow the Bureau to review five years of experience in its rate level filings in addition to other factors that are to be considered. For non-catastrophic types of loss, the use of five years of data balances the stability of the rates with responsiveness to more recent conditions. For catastrophic hurricane losses, the average of modeled losses from two hurricane models is used.

Traditional ratemaking for the fire coverage of a dwelling policy has relied on five years of experience with weights of 0.10, 0.15, 0.20, 0.25 and 0.30 being given to each year respectively. Those weights are used in this filing as in past Bureau dwelling filings. The weights used by the Bureau are identical to those used by ISO in all other states for dwelling fire insurance. These weights are generally accepted in all jurisdictions in which ISO makes dwelling filings. For the extended coverage portion of the dwelling policy, which by nature is more likely to be unstable because of weather events, equal weights are given to each year to help promote stability. This treatment is a common and accepted ratemaking practice used by ISO countrywide.

Q: Please turn to page C-2 of Exhibit RB-1. Would you explain what that page shows?

A: Page C-2 is what is called a statewide rate level calculation for the fire portion of a dwelling policy in North Carolina. Page C-2 determines the actuarially indicated rate level change for dwelling fire. The data shown are for business written in the voluntary market and data written by the North Carolina Beach and FAIR Plans

The overall dwelling program to which this filing applies consists of both a fire and an extended coverage ("EC") component. Page C-2 shows the calculation of the indicated rate change for the fire component, and Page C-4 shows the corresponding indicated rate change for the EC component. I will first focus on describing Page C-

2. However, later parts of my testimony will refer to the EC calculations on Page C-4.

Q: Referring to column 1 on page C-2, what are "Adjusted Incurred Losses"?

A: The incurred losses in column 1 are the losses from insured events that occurred during each of the five respective accident years. The figure includes losses which have already been paid, losses which are not yet paid and are represented by outstanding claim reserves, and losses which have been incurred but for which no individual reserve yet exists because they have not yet been reported.

Q: Have the losses as shown in column (1) been adjusted in any way?

A: Yes, as explained below, there are two adjustments. First, these losses have been adjusted to a common $500 deductible level. Second, these losses have been developed to ultimate by applying loss development factors.

Q: Please explain what is done to adjust losses to a common deductible level.

A: In order to properly analyze losses for ratemaking, it is necessary to adjust losses from all policies to some common deductible level. The common deductible level that is assumed for dwelling is the base deductible of $500. Loss elimination ratios (LERs) are applied to the reported losses in order to account for the difference between the reported deductible and the assumed common deductible.

Q: What is the purpose of adjusting the reported losses by applying loss development factors?

A: The losses in column 1 of page C-2 include losses from events which have happened but which have not yet been reported. Such events are included by what is known as an adjustment for IBNR (incurred but not reported) losses.

In addition, adjustments must be made to reflect that loss payments occur over time. The losses, as they are reported to statistical agents, cover all accidents which occur during the respective accident years ended December 31. When they are reported to the statistical agent, they are evaluated as of March 31 of the next year. As of March 31, some of the losses have already been paid and some have not. Those that have not are represented by loss reserves. Loss reserves are estimates of what will ultimately be paid on these outstanding claims.

Since we want the losses used in the filing to be as accurate as possible, we look at history to see how losses have changed, or "developed," from the time they were initially reported to the time they were ultimately paid. For example, if we want to evaluate how losses reported in 2018 will eventually turn out, we look back and see what has happened in the past. If historically there has been a 5% increase in the dollar amount of losses from the time they were initially reported as reserves until the

time they were ultimately paid, we would logically assume that the same development will hold true for losses incurred during the accident year ended December 31, 2018. Accordingly, we would make an adjustment by increasing the losses as they are initially reported to us by 5%.

Q: What causes losses to change or develop as you have described?

A: Changes to the reserve portion of the losses typically result from the fact that the ultimate loss payments turn out to be more or less than estimated at the time of the initial report that led to the reserve. Another factor that could lead to changes in losses is the late reporting of claims. For example, if a loss event occurred in late December of any given year and for some reason was not timely reported to the company by the end of the year, it might very well be that the losses as initially reported would not include any provision for that particular claim. By next year's evaluation, however, the claim would have worked its way into the system and the total loss would include either the paid amount or the reserved amount for that particular claim. This would cause an upward development in the losses as initially reported.

Q: Please refer to page D-12 of RB-1 and explain how the loss development factors used in the filing were calculated.

A: Page D-12 shows the calculation of loss development factors for the fire portion of a dwelling policy. The top section of that page shows the incurred losses evaluated as of 15, 27, 39, 51, 63, 75 and 87 months for the accident years for which available data are shown. In calculating loss development factors, we have used the data of companies reporting to ISO. For instance, the 15-month entry for the accident year ended December 31, 2015 is $8,601,845. This is the first evaluation of the losses caused by loss events which occurred during the year which ended December 31, 2015. The evaluation was made as of March 31, 2016, 15 months after the beginning of the accident year. Twelve months later (March 31, 2017) the losses caused by accidents which occurred during the year ended December 31, 2015 had decreased to $8,353,236. This is the evaluation as of 27 months after the beginning of the accident year. This decrease represents a reduction in losses, or negative development, of -2.9% (or 0.971) as shown in the column under Link Ratios located lower on that page labeled "27:15." As shown on page D-12, we have looked at the development from 15 months to 27 months for eleven different years. The average development for those years was 0.971, or -2.9%.

Q: Does page D-12 also show development figures for periods longer than 27 months?

A: Yes. We also calculate loss development factors for the periods from 27 months to 39 months, 39 months to 51 months, 51 months to 63 months, 63 months to 75 months, and 75 months to 87 months. Studies have shown that for dwelling fire virtually all losses have been paid by the time of the evaluation at 87 months after the beginning of an accident year. For example, by the time of the 63-month

evaluation, the losses for the accident year ended December 31, 2014 had become $7,902,976. This amount is the same as the value of the losses for the same accident year evaluated as of 51 months. The average development over the period 51 months to 63 months for the years for which the data are available was 1.000, or 0.0%.

Q: Please explain how the loss development factor used to determine the ultimate payment value of the accident year ended December 31, 2018 losses was determined.

A: For dwelling fire, the loss development factors for each of the applicable periods, as shown on page D-12, are:

Development Period	Factor
15 to 27	0.971
27 to 39	0.997
39 to 51	0.997
51 to 63	1.000
63 to 75	1.000
75 to 87	1.000

If you multiply all of these factors together, you will get a factor of 0.965 to apply to the year ended December 31, 2018 losses.

Q: Please refer to column (2) of page C-2. With reference to the column headed "Adjusted Incurred Losses Including LAE," please tell us what the figure 45,615,663 represents.

A: These are the losses and loss adjustment expenses associated with claims that occurred in the accident year ended December 31, 2018. It is equal to the adjusted incurred losses found in Column (1), multiplied by a trended loss adjustment expense factor of 1.098.

Q: How is the trended loss adjustment expense factor of 1.098 developed?

A: Each year the Bureau sends a call to its member companies for expense-related data. These calls showed that loss adjustment expenses for the calendar years December 31, 2015, December 31, 2016, December 31, 2017, December 31, 2018 and December 31, 2019, after dropping the high and low values, averaged 8.7% for the period, as shown on page D-24.

This factor of 8.7% must be adjusted for the change in cost levels of the items that go into loss adjustment expenses. These expenses include items such as adjusters

salaries, rents and overhead items related to claims settlement. In essence, these items will vary as general economic trends vary.

Q: Please explain how the expense trend used to adjust the loss adjustment expense factor is developed.

A: The expense trend used to adjust the loss adjustment expense factor is based on an analysis of the Current Expense Index, which is an index based on a 50% weighting to the Compensation Cost Index, a 25% weight to the all items CPI (less energy) and a 25% weight to the all items CPI (including energy). The latest available information for marine, fire and casualty insurance was used. The data for this index are shown on pages D-20-21. Based on an analysis of these data, an annual rate of change of 2.2% was selected by the Property Rating Subcommittee of the Bureau.

Q: Please explain the development and application of the expense trend factor in arriving at the loss adjustment expense factor.

A: The loss adjustment expense factor of 8.7% is equal to the five-year average (excluding the high and low values). As such, the factor is representative of the time period corresponding to July 1, 2017.

Since the Loss Adjustment Expense ratio is at the cost level corresponding to July 1, 2017, it is necessary to project this cost to the average date of accident for the period during which our rates are assumed to be effective, September 1, 2022 (one year beyond our assumed effective date of September 1, 2021). This calculation is displayed on page D-28.

Q: What other adjustments must be made to the Loss Adjustment Expense factor in order to use it?

A: The Loss Adjustment Expense Factor is determined as the ratio of loss adjustment expenses to losses. Having adjusted the expense portion of the factor in the numerator, we also need to adjust the losses in the denominator by the relevant loss trend. This calculation is performed on page D-28.

Q: Please explain the purpose of trending losses.

A: Since ratemaking is prospective in nature, historical losses need to be adjusted to reflect the cost levels anticipated to prevail during the period that the proposed rates are expected to be in effect. This adjustment to historical losses is made by applying loss trend factors. For this filing, the assumed effective date is September 1, 2021. Historical losses are trended to reflect an average accident date of September 1, 2022 (which is one year after the assumed effective date of September 1, 2021). The loss trend factors are shown in Column (3) of page C-2 of Exhibit RB-1.

Q: Please describe how the loss trend factors are calculated for non-hurricane losses.

A: For non-hurricane losses, loss trend factors are calculated on pages D-14 to D-16 of Exhibit RB-1.

Page D-14 shows historical growth in claim frequencies, loss severities, and pure premiums that occurred during the historical experience period for fire. Based on this information, the Bureau's Property Rating Subcommittee selected annual rates of change in frequencies, severities, and pure premiums. Separate annual rates of change were selected for two different time periods (the historical time period and the prospective time period). Annual rates of change for the historical time period are used to trend the historical loss experience to the average accident date of the latest year (July 1, 2018). Annual rates of change for the prospective time period are used to trend losses from the latest year to an average accident date of September 1, 2022 (which is one year after the assumed effective date of September 1, 2021).

Page D-16 shows how the selected annual change in losses was converted to loss trend factors that can be applied to each of the accident years. The loss trend factors shown in Column (7) reflect the combined impact of loss trend over the historical and the prospective time periods. These loss trend factors also appear in Column (3) of page C-2.

Q: Compared to the Bureau's previous dwelling rate filing, have there been any changes to the way non-hurricane loss trend was calculated?

A: Yes. In this filing, historical and prospective annual loss trends were selected to trend the losses to one year beyond the assumed effective date. In the previous filing, this was accomplished using Current Cost Factors and Loss Projection Factors based on external indices, and Loss Trend Adjustment Factors that reflected the difference between the historical experience and the external indices.

Although the Bureau's Property Rating Subcommittee considered external indices for this filing, the non-hurricane loss trend selections are based on claim frequency, loss severity, and pure premium trends observed during the experience period.

In the prior filing, loss trends were initially selected based on external economic indices. However, these initial loss trends were subsequently modified by way of a "loss trend adjustment" to reflect the observed changes in actual loss experience. In the current filing, the annual loss trends were selected in a more direct manner by relying on actual non-hurricane loss experience in North Carolina.

Q: Did the Bureau consider the potential impact of Covid-19 when selecting loss trend factors?

A: Yes. The Bureau's Property Rating Subcommittee considered the potential impact of Covid-19 when selecting annual loss trend factors.

The loss experience relied on in the rate analysis includes losses incurred on or before December 31, 2018. As such, the historical experience period was not impacted by Covid-19. The proposed rates are assumed to become effective on September 1, 2021, with an average accident date of September 1, 2022. Depending on the success of future vaccines, dwelling loss experience during this prospective time period may be minimally impacted by Covid-19.

In the near term (for example accident year 2020), it is unknown what impact Covid-19 may have on dwelling loss experience. As people spend more time at home during the Covid-19 pandemic, certain types of claims (such as theft and vandalism) may be lower because the occupant may be able to prevent the loss from occurring. However, with more people at home, other types of claims may become more prevalent if they are caused by people's activities (such as dropped objects or fires due to smoking).

The annual loss trend factors were selected after considering the uncertain impact of Covid-19 on dwelling loss experience and the fact that the proposed rates aren't assumed to go into effect until September 1, 2021.

Q: Please explain the purpose of premium trend factors in Column (5) of page C-2.

A: Since ratemaking is prospective in nature, it is important to adjust historical experience so that it will be reflective of future conditions. Due to the impact of inflation, insureds generally purchase higher policy limits over time. Premium trend factors are used to adjust historical experience to be reflective of subsequent changes in average policy limits over time.

Q: Please describe the calculation of the premium trend factors in Column (5) of page C-2.

A: The premium trend procedure is based on the annual growth in average policy amount relativities during the experience period. This procedure is displayed on pages D-17 and D-18.

The premium trend factors are calculated in a two-step process. The first step involves calculating Current Amount Factors for each year. The Current Amount Factors trend the average policy amount relativity from a given historical year to the average date of writing for the latest accident year of the review (January 1, 2018).

The Current Amount Factors are calculated by taking the ratio of the average policy size relativity for the most recent year to the average policy size relativity for each of the five years in the experience period. For a given year, the average policy size relativity is calculated by taking a weighted average of the policy size relativity factor for each amount of insurance, using the exposures for each amount of insurance as weights.

The second step involves accounting for the trend in average policy size relativities from January 1, 2018 (which is the average date of writing for accident year 2018) to March 1, 2022 (which is six months beyond the assumed effective date of September 1, 2021). The prospective annual change in policy size relativities was selected by the Bureau's Property Rating Subcommittee after reviewing the fitted annual rate of change in policy size relativities during the historical experience period.

Q: Could you please explain the average rating factor Column (7) on page C-2?

A: Column (7) is the average rating factor for the policies purchased in each year. The average rating factor is the ratio of the average rate at manual level to the average current base rate. For example, let's assume that the current territory base rate for frame construction with $75,000 buildings coverage is $100, that the rating factor for masonry is 0.9 and that the rating factor to purchase an additional $25,000 of coverage A is 1.2. Then the average rating factor for a $100,000 masonry policy is calculated as:

$$(100 * 1.2 * 0.9) / 100 = 1.08$$

This factor is needed to adjust the average trended loss costs in Column (6) to a base class level. Since most policyholders do not purchase exactly the base amount of coverage, the average trended loss cost is divided by the average rating factor to convert this average trended loss cost into a trended base class loss cost which is shown in Column (8). The derivation of the average rating factors for fire is shown on pages D-32 to D-41.

Q: Please explain the Weighted Trended Base Class Loss Cost, page C-2 Line 10.

A: Line 10 is the resulting Weighted Trended Base Class Loss Cost obtained by applying the accident year weights shown in Column (9) to the Trended Base Class Loss Cost for each year shown in Column (8). This Weighted Trended Base Class Loss Cost is the forecasted Base Class Loss Cost for policies written during the one-year period after the assumed effective date of September 1, 2021.

Q: Please explain credibility on Line 11, page C-2.

A: Line 11 is the credibility of the experience based on the number of house years during the 5-year period. The full credibility standard is based on a procedure that considers the frequency of claims and the variability of the size of those claims. The procedure is explained in a CAS Proceedings Paper "Credibility of the Pure Premium" by Mayerson, Jones and Bowers. The full credibility standard is based on a normal distribution with a 90% probability of the pure premium being within 10% of the expected value. The full credibility standard for Fire is 500,000 house years and 330,000 house years for Extended Coverage.

Q: Please explain what Line 12 entitled "fixed expense per policy" on page C-2 refers to and what it represents.

A: Line 12 "fixed expense per policy" refers to the amount of the prospective premium dollar needed to cover general and other acquisition expenses on policies written in the prospective period. General expenses along with other acquisition expenses constitute the so-called fixed expenses. They are fixed in that they do not vary as a direct function of the premium dollar. For example, the cost of office equipment, rent and other overhead-type expenses are fixed expenses. Expenses such as commissions and premium taxes, on the other hand, are examples of expenses that rise or fall directly with premium.

The number shown on Line 12, $3.88, represents the dollars of general and other acquisition expenses trended to the levels anticipated to prevail during the prospective period. This is appropriate because general and other acquisition expenses are normally incurred at the time a policy is written.

Q: Please explain how the figure $3.88 on Line 12 of page C-2 was derived.

A: The derivation of the $3.88 is shown on page D-28. The untrended general expense ratio of 0.055 and the other acquisition expense ratio of 0.090 are obtained from the expense data collected by the Bureau and based on an average of the 2017, 2018 and 2019 ratios. These are shown on page D-22. This average represents the average fixed expense ratio corresponding to calendar year 2018. In order to trend these to the cost levels anticipated to prevail, we project these forward to the prospective period. The average selected expense trend of 2.2% is applied over the time period from July 1, 2018 (the average date of the experience on which the general expense ratio is based) to March 1, 2022 (the average date of writing under the proposed rates). Since this ratio is relative to premium, we must also project the amount of insurance from 2018 levels to the level anticipated to be in effect on business written between September 1, 2021 and August 31, 2022. This is done by using the Premium Trend Factor for 2018 of 1.049, which I have previously discussed. The resulting calculation is:

$$\frac{(0.055 + 0.090) \times 1.083}{1.049} = 0.150$$

This trended fixed expense ratio is then multiplied by the latest year current base rate of $25.88. The result is a statewide dwelling fire fixed expense loading of $3.88.

The expense experience on page D-22 excludes the results for an insurer that had unusually high general expenses related to start-up costs associated with writing business in North Carolina. Excluding the expense experience for this insurer had a downward effect on the indicated expenses.

Q: What does Line 13 show on page C-2?

A: Line 13 is a combination of the Trended Base Class Loss Cost and the Trended General Expense and Other Acquisition expenses. The figure $19.23 is the dollar amount that is required to cover the portion of the base rate that covers losses, loss adjustment expenses, general expenses and other acquisition expenses.

Q: What does Line 14 on page C-2 show?

A: Line 14 takes into account the variable expenses, which include commission and brokerage, taxes, licenses and fees, profit, contingencies and dividends. From page D-22, we see that the commission and brokerage ratio is 11.3% and the taxes, licenses and fees ratio is 2.7%. The provision for dividends is 0.5%. The provision for underwriting profit is 8.5%. The contingency provision is 1.0%.

As in past dwelling filings, Bureau committees reviewed the latest available policyholder dividends payment data as well as the multi-year history of companies consistently paying dividends to policyholders. The Bureau's subcommittee concluded that a factor for expected dividends is appropriate to include in this filing. The data contained on page D-22 show that the dividends, though constituting a small percentage of premium, have been paid consistently and in material amounts over the years. Based on these facts, the Bureau has included a provision of 0.5% of premium to reflect anticipated dividends during the experience period. Given the consistency of the historical data as to the payment of dividends, this is a reasonable assumption. Reflecting dividends in a filing by a rating bureau is an actuarially sound methodology. If dividends were not reflected, the profit level in the filing would not be achieved because of dividends paid to policyholders.

The 8.5% underwriting profit provision was selected by the Bureau's committees based on reviewing the analyses by Dr. Vander Weide and Dr. Zanjani. This filing also contains a 1% margin for contingencies. The profit and contingency factors are applied equally across the state.

The items known as variable expenses are reflected in Line 14. They vary in direct proportion with the premium dollar.

Combining variable expenses, profit, contingencies, and dividends results in 24.0 cents of every premium dollar being paid for these expenses. The remaining 76.0 cents pays for losses, loss adjustment expenses, general expenses and other acquisition expenses.

Q: What is the source of the percentages on page D-22 with respect to commissions and brokerage and taxes, licenses, and fees?

A: They were calculated from the 2015, 2016, 2017, 2018 and 2019 North Carolina expense calls for data undertaken by the Bureau.

Q: What is the source of the percentage on page D-22 for contingencies?

A: The Bureau committees selected that factor, and I agree with it. A 1% factor has been consistently employed in past Bureau property insurance rate filings. A 1% contingency factor is a standard factor that has been used for many years across the country in property insurance ratemaking. The factor was selected by the Bureau committees based upon recognition of the systematic bias that causes actual underwriting results, analyzed over time, to be worse than the provision assumed in the rates. Reasons for this bias are many.

One reason is that property insurance involves many risks, but not all of them are observable in the experience or are adequately recognized in normal ratemaking.

In addition, the writing of property insurance in North Carolina is subject to law changes, court interpretations, jury verdicts and judicial decisions that expand losses beyond what was contemplated when the policies were written.

Additional considerations justifying a contingency factor are the delay, uncertainty and difficulty in obtaining needed rate increases in North Carolina. In North Carolina and a very few other states, insurance companies writing dwelling insurance are required to go through rating bureaus in order to achieve needed rate increases. This regulatory system can cause significant delay in obtaining needed rate level increases. North Carolina differs from states that rely more on competition to set rates. The system in this state requires that data be collected from many companies writing dwelling insurance and then aggregated and analyzed prior to making a filing for adequate rates on behalf of all companies. As the physical size of this 2020 filing demonstrates, the amount of information required to be submitted is massive, and it takes significant time to compile that information. Mr. Anderson of Milliman (see his pre-filed testimony and exhibits) has concluded that a 1% contingency provision is fully supported by this single issue regarding the delay in obtaining needed rate increases in North Carolina.

Q: Would you explain Line 15 on page C-2 entitled "Base Class Rate Excluding Comp. for Assess. Risk & Dev."?

A: The net base rate per policy is calculated by dividing the Loss and Fixed Expenses in Line 13 by the expected loss and expense ratio in line 14. This is the net base rate before incorporating the factors for deviations and the compensation for assessment risk per policy.

Q: Would you explain Line 16 on page C-2 entitled "Compensation for Assessment Risk per Policy"?

A: Compensation for assessment risk is a provision that is calculated by Mr. Anderson of Milliman (see his prefiled testimony and exhibits) to reflect the cost to voluntary market insurers of maintaining sufficient capital to pay the assessments for residual market losses, to the extent required by law. If the two residual market mechanisms (the Beach Plan and the FAIR Plan) do not have sufficient capital, reinsurance and reserves to pay losses for a catastrophic hurricane event or series of events, then companies writing homeowners, dwelling and other lines of property insurance in the voluntary market will be assessed for such losses even if they had chosen not to write in the coastal or beach areas where the losses occurred. In effect, the voluntary market companies are being required to provide free reinsurance to the residual market and its policyholders who can only find coverage in the residual market. The voluntary market companies must therefore maintain capital sufficient to cover such losses, in addition to their own losses, even though those companies have elected not to write the policies that generate those losses. The compensation for assessment risk factor is the provision that must be included in the rates in order to compensate voluntary market insurers for bearing this risk of assessments from the Beach/FAIR Plans.

As a result of legislative action in 2009, some of the exposure of the voluntary market companies to residual market assessments has been capped at one billion dollars per year. Milliman's analysis of the necessary compensation for the risk of residual market assessments incorporates this cap.

It should be noted that the $1 billion cap only applies to assessments by the Beach Plan (which writes business in the beach and coastal areas) and does not apply to assessments to pay for losses in the FAIR Plan (which writes business in all areas of the state except the beach areas). In the recent several years, the FAIR Plan has rapidly increased its writings statewide. As the number of policies and amount of uncapped exposure in the FAIR Plan grows, that growth is reflected in the factor for the compensation for assessment risk.

The compensation for assessment risk amount of 0.88 per policy is calculated by first multiplying the 2.9% provision by the current average statewide base rate of 26.06, resulting in a value of 0.76. To be incorporated in the rates, however, this provision must be adjusted to account for the commissions and taxes, licenses and fees that the companies will need to pay on this additional premium. That is done by dividing the 0.76 by 1 minus the sum of commission and brokerage expense and taxes, licenses and fees expense as shown below.

$$\frac{0.76}{1 - 0.113 - 0.027} = 0.88$$

Q: What is the source of the percentages used on Line 18 for anticipated deviations?

A: As in past dwelling filings, the Bureau committees reviewed deviations. The Bureau reviewed them in conjunction with consent to rate data and surcharges on dwelling policies written in the Beach Plan. The Bureau and ISO believe that it is actuarially appropriate for filings made by rating bureaus to contain a factor to reflect expected deviations and other variations from the manual rate that would result in the filed profit level not being achieved. The Bureau also recognizes that the reflection of expected deviations has been a contentious issue in previous rate filings. However, in this filing the Bureau elected to file a provision of zero for deviations.

Q: Would you explain Line 20 on page C-2 entitled "Required Base Class Rate per Policy"?

A: Line 20 is the required base rate that is needed to ensure that sufficient revenue is collected to cover the losses and expenses that are expected to result from the policies written during the year following the effective date of this filing.

Q: Would you explain line 21 on page C-2 entitled "Current Average Base Class Rate"?

A: Line 21 is the current average base class rate for fire for all dwelling policies included in the review. This rate assumes that each policyholder is buying only the base coverage.

Q: Would you explain Line 22 on page C-2 entitled "Indicated Rate Level Change"?

A: Line 22 is the percentage change in the current rates that will be necessary to make the rates adequate for the cost levels that are expected to prevail in the one-year period following the effective date of the filing. The percentage change is determined by taking the required base rate per policy on Line 20 and dividing it by the current base rate from Line 19. This results in an indicated rate level change of 0.5% for the fire portion of dwelling policies.

Q. How are these changes distributed by class?

A. On page C-7, the calculations of the indicated change for fire buildings and contents classes are shown. Column (1) displays the Trended Adjusted Incurred Losses for each of the two classes - buildings and contents. The losses shown are for the latest five years. Column (2) gives the Five-Year Earned House Years total, which is the sum of the exposures by class for the five-year period. Column (3) provides the Trended Average Rating Factor. Column (4) gives the Base Class Loss Cost for each class and total. This loss cost is obtained by dividing the five-year total trended adjusted incurred losses by the five-year total house years times the trended average rating factor. Column (5) is the credibility assigned to each class's experience, based on the full credibility standard of 500,000 house years for fire. Column (6) is the Credibility Weighted Loss Cost for each class. The complement of credibility for use in this calculation is the Total Base Class Loss Cost multiplied by the ratio of the current base rate for each class to the total current base rate.

The statewide credibility weighted loss cost is obtained by weighting the class credibility weighted loss cost by the individual class house years. Column (7) provides the Indicated Base Loss Cost by class.

This is the statewide base loss cost adjusted by the class relativity indicated by the credibility weighted loss cost. Column (8) shows the Current Base Rate by class. Column (9) displays the Expected Loss and Fixed Expense Ratio. The Indicated Base Rate is shown in Column (10). The indicated base rate is the sum of the loss cost and fixed expenses divided by the expected loss and fixed expense ratio. Column (11) is the Compensation for Assessment Risk Per Policy. Column (12) is the Base Rate Excluding Deviations. Column (14) is the deviation amount per policy that is needed to be reflected in the required base rate. Column (15) is the sum of the indicated base rate before deviations in Column (12) and the deviation amount in Column (14). Column (17) shows the Indicated Base Rate Change by class. Column (18) shows the Indicated Rate Change Balanced to Statewide Level. This rate change includes the impact of the indicated statewide change of 0.5%.

Q: Does the filing contain a revision to the present territory rate levels?

A: Yes. In connection with the statewide rate level change we have been discussing, new territory rate changes are displayed on page A-3.

The development of the indicated relative change by territory is completed in such a way that the overall effect is to balance to the indicated statewide change. The allocation of the statewide rate change to individual territories is done on pages C-9 and C-10 for the fire portion of dwelling.

Q: How has the Bureau treated general and other acquisition expense by territory?

A: The Bureau has treated general expense and other acquisition expense as not varying by territory.

Q: Please turn to page C-4 of Exhibit RB-1. Would you explain what that page shows?

A: Page C-4 shows the statewide rate level calculation for the extended coverage portion on a dwelling policy in North Carolina. As page C-2 did for fire, Page C-4 determines the actuarially indicated rate level change for dwelling extended coverage.

Q. Is the indicated statewide rate change for extended coverage calculated in the same general manner as for fire?

A. Although the statewide methodology for extended coverage is similar to that used for fire, there are three main areas where the methodology differs for these two coverages. First, actual hurricane losses for extended coverage, while reviewed and considered, have been excluded from the losses shown in Column (1) and are later

replaced by the "Trended Modeled Hurricane Base Class Loss Cost", which is displayed in Line 13 of page C-4. Second, the actual excess non-modeled losses in Column (2) have been replaced by an excess factor loading included in Column (3) of page C-4. The excess loss factor is shown on page D-47. Third, a provision for the net cost of reinsurance is included in Line 20 of page C-4.

Q. Other than on page C-4, have actual hurricane losses been excluded anywhere else in the filing?

A. Yes, they have been excluded in the development of the indications for extended coverage by class and by territory, and in the calculation of the non-hurricane excess factor.

Q. How have these hurricane losses been identified in order to be excluded?

A. The method to remove hurricane losses from the derivation of the excess factor depends on the detail of the available data during different periods of time.

For the period 1989 to 1995, territory losses by month are available for ISO data only. The territory non-hurricane losses for this period are calculated as follows: first, the average losses for the month in which the hurricane occurred are calculated based on the non-hurricane years. The average monthly losses are then added to the eleven remaining months of the hurricane year and divided by the hurricane year annual losses resulting in a non-hurricane adjustment factor. This factor is then applied to either reported losses or adjusted losses by territory for all statistical agents to obtain non-hurricane losses. For hurricanes, wind losses are sometimes reported as water losses or “all other” property damage losses. To accurately estimate the non-hurricane losses, the above non-hurricane factors are calculated for water and all other property damage and then applied to the water losses and the all other property damage losses.

For the period 1996 to 2002, based on information from NOAA and other sources, the specific dates on which a given hurricane was active in North Carolina are determined. The loss experience for ISO is then examined by date and cause-of-loss. Wind losses and losses for other weather-related perils which occurred on these dates are assumed to be hurricane losses. For ISO data, the percentage of hurricane losses to total losses is calculated. To estimate the hurricane losses for statistical agents other than ISO, the percentage of hurricane losses in the ISO data (relative to the ISO yearly total) is applied to the total loss amounts for the other statistical agents.

For the period 2003 to 2018, the data described above (for the period from 1996 to 2002) is also available from ISS and has been examined together with the ISO data. For the combined ISO and ISS data, the percentage of hurricane losses to total losses is calculated. To estimate the hurricane losses for statistical agents other than ISO and ISS, the combined percentage of hurricane losses from ISO

and ISS data (relative to the ISO and ISS yearly total) is applied to the total loss amounts for the other statistical agents.

Actual hurricane losses of $3,218,320 were removed from 2014; $3,676,823 were removed from 2015; $64,494,644 were removed from 2016; $264,669 were removed from 2017; and $512,253,927 were removed from 2018. This information is shown in a footnote on page C-4.

Q. Do you have an opinion as to whether the incurred losses excluding hurricanes shown in Column (1) on page C-4 of RB-1 accurately represent the anticipated value of dwelling extended coverage incurred losses, excluding actual hurricane losses, that resulted from claims which took place during each of the years ended December 31 in North Carolina?

A. Yes, I do.

Q. What is that opinion?

A. I believe that the losses excluding actual hurricane losses shown in Column (1) do accurately represent the expected ultimate value of those losses.

Q: Please explain the figure contained on Line 13 of page C-4 labeled "Trended Modeled Hurricane Base Class Loss Cost".

A: That figure is the expected hurricane losses for a base risk written during the prospective time period. Aon provided the average modeled hurricane losses from running two hurricane simulation models developed by AIR Worldwide (AIR) and Risk Management Solutions (RMS). The average modeled hurricane losses were then loaded with catastrophe loss adjustment expenses (LAE). To obtain an average loss cost value, the modeled loss amounts are divided by earned house years for calendar year 2018. To convert the average trended modeled hurricane losses with LAE to base class level, it is divided by the latest year trended average rating factor. The trended average rating factor is calculated as the product of 2018 average rating factor and the premium trend factor for calendar year 2018. The derivation of the modeled hurricane base class loss cost is shown on page D-79.

Q: How were the modeled hurricane losses calibrated so they would be applicable to the prospective time period that the proposed rates will be in effect?

A: The exposures that were used in the hurricane model runs were trended to six months beyond the assumed effective date of September 1, 2021. Page D-19 shows the calculation of the annual rate of change that was used to trend the exposures that were used as inputs to the hurricane models.

Q: Compared to the Bureau’s previous dwelling rate filing, have there been any changes to the way trend was accounted for in the provision for hurricane losses?

A: Yes. In this filing, the exposures that were input into the hurricane models were trended by ISO. By doing this, it was not necessary to apply trend to the average annual hurricane losses that were generated by the hurricane models, and the results could be used directly from the model output.

In the Bureau's prior filing, the hurricane models were run on historical (un-trended) exposures. As a result, loss trend factors were applied to the average annual hurricane losses that were generated by the hurricane models.

Q: Did the Bureau consider actual hurricane losses?

A: Yes. The actual hurricane losses during the five years of experience were reviewed and considered; however, as has been done in prior Bureau filings, those losses have been excluded from the historical losses used in the filing and have been replaced by modeled losses.

Q. Why were models used to develop the projected hurricane losses instead of using actual hurricane losses?

A. The catastrophic nature of the hurricane peril makes it a very volatile peril in terms of loss severity, frequency and location of occurrence. Catastrophe losses in general tend to be high severity, low frequency events. Since we use five years of loss experience data in dwelling rate making calculations, it is likely that there will be scenarios ranging from no hurricane losses to extremely severe hurricane losses during the experience period. Also, if a hurricane were to hit a particular area of the state, the losses might be reflected only in that area of the state, with little or no reflection in other areas of the state. Therefore, if we analyze hurricane losses without any adjustment, the indicated rate level need will be subject to large yearly fluctuations resulting in rates beyond the actuarially sound level.

Devastating hurricanes are relatively uncommon events compared to other causes of loss. The occurrence or non-occurrence of actual hurricane events is not predictive of the range of hurricane events that can occur or the probability of their occurrence. In addition, there is not enough experience with hurricanes since accurate insurance loss records began to be maintained for actuaries to employ actual losses as opposed to models. For the older years, much of the past insurance data is quite outdated for the purpose of examining hurricane exposure and is of limited utility in projecting future hurricane losses. It includes losses from hurricanes that occurred when housing patterns were different, population density was lower, houses were built differently, building codes were different, construction prices were different, houses had fewer and less expensive contents and labor costs and practices were different, etc.

The hurricane models are based on publicly available scientific data, mathematical and empirical models, and the experience of engineering, geological, meteorological,

economic and insurance experts. Actual hurricane loss experience is also used to calibrate the models. The models are run for a large number of simulated events (e.g. 100K years) to estimate what would be the expected long-term average hurricane losses for a given risk profile. The modeled hurricane losses are accurate, stable, and represent projections of the long-term average annual hurricane losses. There are several advantages of using models to project hurricane losses over using actual hurricane losses, including the following: First, the models improve the accuracy of hurricane loss projection in a long-term average view as described above. Second, replacing the volatile actual hurricane losses with modeled hurricane losses will smooth out the periodic spikes in the indications following hurricanes. Hurricane modeling is the widely accepted and most accurate way of considering the hurricane exposure. Modeling has become the standard practice in the insurance industry for insurers to estimate long term expected hurricane losses for ratemaking purposes, and has been widely accepted by the regulatory bodies in the United States. Modeling is also uniformly employed in the reinsurance industry, financial markets and meteorological field to determine expected prospective hurricane losses. Scientists who work on the models update those models frequently to reflect the latest understanding of meteorological science.

An example of the need and value of models in producing stable loss costs can be seen from the hurricane season of 2018. In 2018, North Carolina was significantly impacted by Hurricane Florence. If the current rate analysis included the losses due to Hurricane Florence, rather than losses generated by hurricane models, rates would spike up. Conversely, if the rates were based on there being no major hurricane strikes during the preceding five-year experience period, it would not be actuarially appropriate to assume that the absence of hurricane losses would be the expectation for a future prospective rating period.

From a practical and public policy standpoint, raising rates significantly following a devastating and often tragic hurricane is the worst time for the policyholder. The use of simulation models produces a stable and actuarially sound projection of the true loss potential both in terms of statewide exposure values and in terms of territorial distribution of that exposure. Modeling is far preferable to any analysis based on the happenstance nature of historical hurricane loss data.

The Property Rating Subcommittee and ISO Staff have examined actual hurricane losses in North Carolina and have excluded those losses from the incurred losses in filings for a number of years. As done for the 2019 dwelling filing, we have replaced the actual hurricane losses with the average modeled hurricane losses from two hurricane models for the rate review underlying this filing, which I deem to be the actuarially sound practice for the hurricane peril.

Q: As an actuary, how have you determined that it is reasonable to rely on output from the hurricane models for purposes of the Bureau's Dwelling rate filing?

A. Hurricane models incorporate specialized knowledge (including meteorology and engineering) that is outside the area of expertise of most actuaries, including myself. Actuarial Standard of Practice ("ASOP") 38 titled "Using Models Outside the Actuary's Area of Expertise (Property Casualty)" provides guidance to actuaries in this situation.

I have reviewed the pre-filed testimony of Minchong Mao, including her statement of compliance with ASOP 38 for both the RMS and AIR hurricane models for purposes of the Bureau's Dwelling rate filing. Ms. Mao is employed by Aon and is an FCAS with extensive experience using catastrophe models. As documented in her testimony, Ms. Mao has conducted an evaluation of the RMS and AIR hurricane models and has concluded that the modeled hurricane losses are reasonable and appropriate projections of expected hurricane losses for use by the Bureau in its dwelling rate filing.

In addition to relying on the work conducted by Ms. Mao, I have independently evaluated the RMS and AIR hurricane models for purposes of compliance with ASOP 38 with respect to including output from the RMS and AIR hurricane models as part of the Bureau's dwelling rate filing. Some of the conclusions of my ASOP 38 investigations include the following:

- Both the RMS and AIR models were developed and maintained by experts in a wide range of disciplines. This is illustrated by the numerous employees with expertise in key aspects of the models, including meteorology, vulnerability, actuarial science, statistics, and computer science.

- Both the RMS and AIR models have gone through rigorous external review, including being found acceptable by the Florida Commission on Hurricane Loss Projection Methodology.

- Results from the RMS and AIR models yield projected hurricane frequencies and severities that are reasonable when compared to actual hurricane experience observed in North Carolina.

Q. Who performed the hurricane modeling for the Bureau?

A. Aon.

Q. What did the Bureau furnish to Aon to enable Aon to perform its analysis?

A. At the direction of the Bureau, ISO furnished to Aon the North Carolina extended coverage insurance exposure data on the total number of earned house years and earned insurance years by territory for the most recent year in the experience period. The data provided to Aon are correct to the best of my knowledge, information and belief.

ISO provided both actual (un-trended) and trended coverage limits to Aon. As discussed earlier in my testimony, the trended exposures were used as inputs when Aon ran the hurricane models.

Q. How were modeled hurricane losses derived?

A. Aon ran two hurricane models, one from RMS and one from AIR. These two models are the most widely used and relied upon hurricane models. The use of multiple models is required by statute starting with filings made on or after October 1, 2017.

The hurricane models simulate many years of hurricanes and resulting losses for the portfolio of North Carolina exposures. The results of the two models were averaged by Aon. The Property Rating Subcommittee reviewed the blended model results provided by Aon and found them to be actuarially sound. By averaging the two models, the Bureau has elected to give each model equal weight. Given the legislature's mandate to use more than one model, it would be inappropriate to employ the results of just a single model. Using an average of the two models also produces an unbiased estimate for future hurricane losses.

Aon accounted for loss adjustment expenses (LAE). Aon's data shows that LAE, as a percentage of hurricane losses, is lower than the LAE percentage for non-hurricane losses. Therefore, after review of Aon's data, the Property Rating Subcommittee selected a 6% provision to be applied to the modeled hurricane losses.

The modeled hurricane losses (including LAE) are shown on page D-79.

Q. How is the amount of insurance in effect determined?

A. For the purpose of developing the hurricane loss cost, the amount of insurance that is in effect is determined as the sum of the various internal limits found in the extended coverage portion of a dwelling policy. There are four coverages involved: Coverage A (building), Coverage B (other structures), Coverage C (contents) and Coverage D (loss of use). The total amount of coverage can vary by policy form. For DP form 1 (Basic Form), the total limit for buildings is the Coverage A amount, and neither Coverage B nor Coverage D provides additional limits because any Coverage B or D losses are applied against the Coverage A limit. The coverage C limit is as reported on the individual policy record.

For DP form 2 (Broad Form) and DP form 3 (Special Form), the total limit for buildings is the sum of Coverage A, Coverage B, and Coverage D limits. The Coverage B limit is 10% of Coverage A, and the Coverage D limit is also 10% of Coverage A. The coverage C limit is as reported on the individual policy record. These differences in total amounts were reflected by Aon in running the models.

Q: You referred earlier to a separate procedure for dealing with non-hurricane excess losses. Please describe that procedure.

A: At a high-level, the excess procedure involves removing actual excess non-hurricane losses during the 5-year experience period and replacing these values with a provision that is based on reviewing a much longer 30-year time period.

An adjustment was made to the non-hurricane losses in the years in which there were very severe storms such as tornadoes, thunderstorms and other damaging wind storms. The adjustment caps average losses by territory in years where abnormally high losses coincide with severe non-hurricane storm activity. The adjustment relies on a factor developed by using a statewide average. As a result of this procedure, a long-term excess factor of 1.064 was calculated and therefore applied to the losses. This calculation is shown on page D-47. This general procedure has been employed in past dwelling filings and is customarily employed to smooth out and appropriately reflect prospective non-hurricane wind losses.

Q: Compared to the NCRB's previous dwelling rate filing, have there been any changes to the way the excess procedure has been applied?

A: Yes. Although the general excess methodology is the same, the number of years relied on to calculate the excess factor was reduced from 61 years in the previous analysis to 30 years in the current analysis. Use of 30 years was selected by the Bureau's Property Rating Subcommittee. In my opinion, use of 30 years (instead of 61 years) to measure the impact of excess non-hurricane losses is more effective at balancing the trade-off between stability and responsiveness in the calculation.

Relying on 30 years of experience will produce results that are more reflective of current North Carolina exposures than relying on an experience period of over 60 years. At the same time, use of a 30-year period will still achieve sufficient stability. For comparison purposes, in California it is required that insurers use at least 20 years of actual experience to develop a provision for catastrophic events such as wildfires.

Q: Was it necessary to exclude hurricane losses in calculating the excess factor?

A: Yes, it is necessary to exclude hurricane losses when calculating the excess factor because the provision for hurricane losses is developed separately by way of hurricane models. Hurricane losses have been excluded in the calculation of the excess factor as derived on page D-47.

Q: What is the source of the $24.21 for net cost of reinsurance in Line 20 of page C-4?

A: The source of the $24.21 for net cost of reinsurance is an analysis performed for the Bureau by Aon. In that analysis, Aon determined the expected net cost of reinsurance for the composite one company writing dwelling insurance in North

Carolina. Companies buy catastrophe reinsurance due to North Carolina's significant hurricane exposure. The net cost of that reinsurance is the expense and profit component of the reinsurance premium paid by insurers (the loss component is in the direct losses used in the overall rate determination). More details of the analysis are included in the testimony of other witnesses.

The Bureau relies upon the data that Aon has accumulated as to the actual cost of purchasing reinsurance in the current reinsurance market. Aon is one of the largest reinsurance brokers in the world.

To calculate the net cost of reinsurance per policy, the amount of total dollars of reinsurance is divided by the number of house years for 2018 times the 2018 trended average rating factor. This quantity is then divided by the expected loss and fixed expense ratio. For extended coverage, the actual calculation is:

$$\frac{96{,}076{,}450}{629{,}169 * 8.085 * 0.780} = 24.21$$

Q. Are the remaining portions of the rate level calculation for extended coverage similar to that for fire insurance?

A. Yes, they are.

Q: Have the indicated rate changes been voluntarily capped by the Bureau?

A: Yes. In order to mitigate the effects of large rate changes on policyholders, the Bureau's Governing Committee selected maximum fire and extended coverage rate changes for class in each territory. For fire, no rate changes are being filed. For extended coverage, territorial rate increases have been capped at 25%.

Although the indicated overall dwelling statewide rate increase is equal to 44.4%, the proposed statewide average rate change (after capping) is equal to 18.7%.

Page A-3 shows both the indicated (uncapped) and filed (capped) rate changes for each territory.

Q. What other changes does the filing make for dwelling insurance?

A. In addition to revising the base rates, the filing introduces Age of Construction factors and revises the credits for Windstorm or Hail Exclusion and for Wind Mitigation.

Q. How will the Age of Construction factors be used?

A. Age of Construction factors will be used to reflect the impact that the age of a building has on expected losses. In general, newer homes experience fewer losses than

older homes. As such, newer homes will receive a premium credit compared to older homes.

Although the Bureau's homeowners program already includes Age of Construction factors as part of its rating structure, the Bureau's dwelling program is not currently using these factors. As part of this filing, the Bureau is proposing to implement Age of Construction factors for its dwelling program.

The proposed Age of Construction factors are being introduced on a revenue-neutral basis through the application of territorial off-balance factors.

Q. How will the Age of Construction factors impact the premiums that are charged?

A. All else equal, a newer building generally incurs less losses than an older building. To reflect this relationship, the proposed Age of Construction factors will result in a newer building being charged a lower premium, while an older building will be charged a higher premium. Adjusting the premiums in this manner promotes the actuarial fairness of the dwelling rating structure.

Based on the analysis prepared by ISO, the indicated Age of Construction relativities indicate large credits for newer buildings and significant surcharges for older buildings. In order to mitigate large swings in premiums, the Bureau Committees decided to only apply Age of Construction credits for buildings that are less than 15 years old. Furthermore, to limit the impact of the off-balance factor on older homes, the Bureau Committees selected more modest credits for newer homes than those indicated. The proposed Age of Construction factors are being introduced on a revenue-neutral basis through the application of territorial off-balance factors.

Age of Construction factors are only being introduced for fire buildings and extended coverage buildings. Corresponding factors will not be applied to the contents portion of a dwelling policy.

Pages F-1 to F-12 show the Age of Construction analysis prepared by ISO.

Q. You made reference to off-balance factors when discussing the introduction of Age of Construction factors. What are off-balance factors, and why are they used?

A. Off-balance factors represent the rate level effect that would result if the newly introduced rating factors are implemented without any adjustments to the base rates. Off-balance factors are used in the calculation of revised base rates to remove the rate impact associated with the new rating factors. In other words, use of off-balance factors will ensure that the new rating factors will be implemented on a revenue-neutral basis.

Note that separate off-balance factors are applied for each territory. As such, the new Age of Construction factors will be revenue-neutral for each territory. However,

individual policyholders may see either a premium reduction or increase as a result of implementing the new rating factors. Pages F-11 and F-12 show the estimated impact to policyholders as a result of introducing the Age of Construction factors.

Q. Does the filing revise the credits for the Windstorm or Hail Exclusion and for Wind Mitigation?

A. Yes. The filing revises the credits for the Windstorm or Hail Exclusion and for Wind Mitigation that are available in Territories 110, 120, 130, 140, 150 and 160. The derivation of these credits is shown on pages C-16 to C-20.

Q: Please turn to page A-2 of Exhibit RB-1 and explain what is shown on that page.

A: Page A-2 of Exhibit RB-1 shows the indicated and filed statewide rate level changes. The differences between these percentages are due to the capping imposed by the Bureau as described earlier in my testimony.

Q: What is shown on Page A-3 of Exhibit RB-1?

A: Page A-3 shows the indicated and filed rate level change for each territory. Separate rate changes are shown for fire buildings, fire contents, extended coverage buildings, and extended coverage contents.

Q: Do you have an opinion as to whether the data utilized and the methods of calculating the indicated rate level changes and other changes contained in the filing are actuarially sound and reliable and if so, what is that opinion?

A: Yes, I have an opinion. In my opinion, the data utilized and the ratemaking methodologies used by the Bureau are based on and consistent with generally accepted actuarial principles and procedures, and the indicated rates are actuarially sound and reliable. In my opinion, the ratemaking methodology is actuarially sound and produces indicated rates that meet the statutory standard of being not excessive, inadequate or unfairly discriminatory. The filed rates differ from the actuarially indicated rates because of the 0% proposed change for fire and +25% territorial caps for extended coverage as described previously. The filed rates are a reasonable step toward an adequate level.

Q: Do you have an opinion as to whether the indicated rate level changes contained in Exhibit RB-1 are fully justified and, if so, what is that opinion?

A: In my opinion, the indicated rate level changes are fully justified and are not excessive or unfairly discriminatory in any respect.

A: Yes. In reaching my opinion, I have relied on the accuracy of the data supplied by the Bureau, by ISS, AAIS, NISS, by the individual companies that reported their data to ISO and the other statistical agents, and by the Beach Plan and FAIR Plan.

I have relied on Dr. Vander Weide and Dr. Zanjani for the determination of the appropriate profit. I have relied on Mr. Anderson as to the compensation for assessment risk component of the rates. I have relied on Aon for the net cost of reinsurance component of the rates. Additionally, I have relied upon Aon for the blended output of the AIR and RMS models. I have relied on Ms. Mao for her review of the AIR and RMS hurricane models and Mr. Fiete regarding his testimony that supports the provision for the net cost of reinsurance. I have also relied upon and concur with the decisions and the actuarial judgments of the persons on the Bureau's committees, who in many cases are actuaries. I have also reviewed, approved and rely on the work conducted by ISO staff with regards to the preparation of the ISO portions of the rate filing. I have applied appropriate actuarial standards when reviewing these various data sources.

Q: Does that conclude your testimony?

A: Yes, it does.

Exhibit RB-5

PREFILED TESTIMONY
OF
MATTHEW BERRY
2020 DWELLING INSURANCE
RATE FILING BY THE
NORTH CAROLINA RATE BUREAU

Q: Please state your name and your employer.

A: My name is Matthew Berry. I work at Allstate Insurance Company at 2775 Sanders Road, Northbrook, IL 60062.

Q: What is your educational background?

A: I received my Bachelors of Science in 2013 from Purdue University – West Lafayette with a double major in Actuarial Science (with Honors) and Applied Statistics.

Q: Do you have any additional certifications or qualifications?

A: Yes. I have been a Fellow of the Casualty Actuarial Society (CAS) since 2016 after passing each exam on my first attempt. I am a current member of the CAS Examination Committee where I volunteer for writing as well as grading committees. I also hold the Certified Specialist in Predictive Analytics (CSPA) credential awarded by the CAS Institute (iCAS). I am a member of the American Academy of Actuaries (AAA) and meet all of its continuing education requirements. I am in good standing with the CAS, iCAS, and the AAA.

Q: What is your employment background?

A: I have worked as an Actuary for Allstate Insurance Company's Auto and Owners lines of business for my entire career since August 2013. I started on Allstate's Actuarial Training Unit before becoming an Actuarial Analyst in 2014 for the West Central region, which encompasses Colorado, North Dakota, South Dakota, Montana, Wyoming, Kansas, Nebraska, Iowa and Missouri. In 2016, I became an Actuarial Analyst for the state of California. Finally, in 2017, I was promoted to my current role as Actuarial Manager for the state of North Carolina.

Q: Do you have experience with property insurance ratemaking?

A: Yes. I have extensive experience in residential property insurance ratemaking in my career at Allstate. My most recent roles on California and North Carolina involved work on Owners, Condominium and Tenants forms, while my earlier roles solely involved the Owners form. On the Training Unit and West Central regions, I ran Owners rate-level indications where I analyzed factors that drove Owners loss and premium trends and evaluated the adequacy of segmented rates. While working on California, I led a research project on incorporating

catastrophe exposure into rate-level indications for Owners, Condo and Tenants that complied with the unique regulatory environment. That California catastrophe exposure methodology remains in place today and has been incorporated into multiple filings approved by the California Department of Insurance.

In my current role as Actuarial Manager for the state of North Carolina, I have led multiple initiatives to modernize Allstate's Owners product in the state of North Carolina through ratemaking improvements, including the creation of a brand-new rating plan for Allstate's House and Home product launch in North Carolina. Additionally, I have analyzed and implemented multiple North Carolina Rate Bureau ("Bureau") changes for the Owners, Condo and Tenants forms and run rate-level indications for the Owners form.

Q: What is your role with respect to property insurance ratemaking at the Bureau, including specifically Dwelling insurance?

A:

As Allstate's representative, I chair the Property Rating Subcommittee of the Bureau. That Subcommittee has jurisdiction over rates for residential real property insurance, which includes residential Dwelling, Homeowners and Mobile Home insurance rates. I am also on the Property Committee of the Bureau. That Committee has jurisdiction over forms and rates for the Dwelling and Homeowners lines and the two Mobile Home programs.

Q: Can you explain the nature and role of the Bureau with respect to Dwelling insurance rates?

A: The Bureau was created by statute in 1977. According to the statutes and the Bureau's Constitution, its jurisdiction and role generally include the establishment of policy forms and rates for residential real property insurance policies written in North Carolina. This jurisdiction includes all policies of residential Dwelling insurance as well as Homeowners and Mobile Home insurance. Companies writing residential Dwelling policies must be members of the Bureau (with the limited exception of town or county farm mutual writers pursuant to N.C. G. S. 58-36-50). Approximately 48 companies that are members of the Bureau write residential Dwelling policies in the voluntary market.

Dwelling policies are also written by the North Carolina Insurance Underwriting Association (commonly called the "Beach Plan") and the North Carolina Joint Underwriting Association (commonly called the "FAIR Plan"). The Beach Plan writes Dwelling policies in the 18 coastal counties, and the FAIR plan writes Dwelling policies throughout the rest of the state. When those two organizations,

which are known as “residual market organizations,” write residential Dwelling policies, they generally use the Bureau’s forms and rates. Policyholders may end up purchasing residential Dwelling policies either from a company in the voluntary market or from the Beach and FAIR Plans.

The rates for residential Dwelling policies are filed by the Bureau and are subject to approval by the Commissioner of Insurance in filings such as this one. Total premium for residential Dwelling insurance earned (at the current rate level) in the voluntary and residual markets is over $300 million a year (see RB-1, Section A). Approved Bureau rates are sometimes called “manual rates” or “bureau rates.”

Individual companies can charge more or less than the approved Bureau rates through consent to rate and deviations, respectively. Such actions by individual companies are outside of the Bureau’s jurisdiction. In recent years, there has been a significant growth in the use of consent to rate, by which companies may charge higher premiums on individual policies through compliance with the consent to rate procedures. Full residential dwelling policies written by the Beach Plan and FAIR Plan are written at the Bureau rate. There is a 5% surcharge on the premium for residential wind only dwelling policies written in the Beach Plan.

In the 18 beach and coastal counties, the residual market is the largest writer of Dwelling policies. Dwelling policies have increasingly been written by the FAIR Plan in the rest of the state. These facts, together with the fact that there has been an increase in the use of consent to rate by individual companies, indicate that the current Dwelling rates are too low.

Q: Can you explain the responsibilities of the Bureau’s Property Rating Subcommittee?

A: The Property Rating Subcommittee (Subcommittee) is involved in the development of personal lines property insurance rates for the Bureau, including residential Dwelling insurance rates. Companies on the Subcommittee include American Bankers Insurance Company of Florida, American Modern Home Insurance Company, Farmers Insurance Exchange, Foremost Insurance Company, Horace Mann Insurance Company, Nationwide Mutual Insurance Company, N.C. Farm Bureau Mutual Insurance Company, State Farm Mutual Automobile Insurance Company, Travelers Indemnity Company, USAA and Allstate Insurance Company. Allstate Insurance Company chairs the Subcommittee. All representatives on the Subcommittee are actuaries and/or have extensive experience in ratemaking.

Q: Please describe how the Property Rating Subcommittee was involved in this particular Filing.

A: The Subcommittee analyzed the data and methodologies that were presented to the Subcommittee by the Bureau's consultants who are experts in their fields. This includes premium and loss data, expense data, modeled hurricane results, reinsurance analyses and economic analyses. The Subcommittee makes selections based on the data and the expertise provided by Paul Ericksen, Steve Conover and others of Insurance Services Office (ISO); Paul Anderson of Milliman; Dr. James Vander Weide; Dr. George Zanjani; and Minchong Mao and Steve Fiete of Aon.

Ultimately, the Subcommittee developed recommendations to the Property Committee and the Governing Committee as to rate levels that meet the statutory requirements that rates not be "excessive, inadequate, or unfairly discriminatory." Those committees adopted the recommendations of the Subcommittee as to the indicated rate level change required to make Dwelling rates actuarially sound and in accordance with the statutory standards. The Governing Committee capped the rate level changes to be filed as will be discussed below.

The Property Rating Subcommittee has always been involved in developing and recommending the methodology used in property filings to the Bureau. The approach in this Filing meets the required statutory standards and is generally consistent with prior filings. It should be noted that some changes in procedures or methodologies were made in this Filing. These include changes to the trend procedure, changes to the excess wind procedure, and changes to the trending procedure applied in determining the modeled hurricane losses.

Q: Please describe the overall ratemaking equation in the Filing.

A: The approach in this Filing is consistent with prior property filings of the Bureau. Premiums should equal expected losses, plus expected expenses, plus a margin for a fair and reasonable profit. This is the fundamental insurance ratemaking equation to comply with the statutory ratemaking standard. In this Filing, the required base rate per policy is developed by adding the appropriate profit and contingencies to the estimated costs associated with the policy. The required base rate is then compared to the current base rate to determine the "indicated" rate change. For residential Dwelling filings, this is done separately for the two types of coverage afforded by the policy, the Fire portion and the Extended Coverage portion.

The indicated rate change is the actuarially sound percentage change necessary to make the rates comply with the statutory standards that they not be excessive, inadequate or unfairly discriminatory. The indicated rate level change differs from the "filed" rate level change because of capping, which I will discuss later in my testimony. The Bureau's Governing Committee elected to cap to mitigate the impact of this Filing on policyholders. The Bureau's goal is to have rates eventually reach the indicated rate level, but the Bureau has in the past engaged in a process of gradualism to reach the actuarially sound rate level.

The Governing Committee left the Fire indications unchanged. With respect to Extended Coverage, the Governing Committee applied a cap of 25%, by territory. Combined, the inaction on Fire coverage and the cap on Extended Coverage result in an overall filed rate increase of +18.7% for the Dwelling program. Since the indicated Extended Coverage changes generally were the largest in the beach and coastal territories, the impact of capping is greatest in those areas.

Q: How does the methodology account for the loss experience of all of the insurance companies and entities that write residential Dwelling insurance in North Carolina?

A: For purposes of Bureau rate filings for residential Dwelling, all Dwelling loss and exposure data written on NCRB policy forms in the state is consolidated to essentially assume a single insurance entity (often called the "hypothetical one company"). This data contains the aggregate loss experience of residential Dwelling policies in the state and therefore reflects the rating characteristics of all those Dwelling policies. Since the Beach Plan writes many of these policies, its losses and exposure data are included. ISO aggregates the data that it receives directly from various insurers as well as the data compiled by other licensed statistical organizations. The latest year of available statistical data used in the Filing is 2018. In 2018, the total earned premium (at current rate level) for the Fire portion of Dwelling policies was approximately $72 million. In 2018, the total earned premium (at current rate level) for the Extended Coverage portion of Dwelling policies was approximately $229 million. These dollar amounts include both residual market mechanisms that write residential Dwelling policies.

Q: How are the expected losses determined?

A: This Filing uses the loss experience of five accident years from January 1, 2014 through December 31, 2018. Using five years is consistent with prior filings, North Carolina statutes, and generally accepted ratemaking practices. The losses, excluding hurricane and excess losses, are adjusted to the base class level ($500 deductible level) and loss development factors are applied. The loss development factors recognize that the ultimate losses are oftentimes different from those estimated early on. Reasons for loss development include but are not limited to claims that were incurred in the policy period but have not been reported yet, as well as reported claims for which their current estimate will ultimately be inaccurate.

As I explain in more detail below, hurricane losses were determined by modeling. As to non-hurricane losses, a smoothing factor for excess losses of 6.4% for Extended Coverage was determined based on historical experience and applied to each accident year. The use of an excess loss factor is consistent with the general actuarial approach of using either a greater number of years or a model-based approach to estimate exposures that tend to be significantly lower in

frequency and higher in severity, and therefore might not be properly reflected in the five years of experience data. The excess loss factor was determined based on the longstanding excess loss procedure employed by ISO in prior Dwelling filings. Under that procedure, hurricane losses are first excluded. Then, the long-term excess factor is the ratio of the long-term average of the excess loss ratios to the average of the long-term normal loss ratios. Historical non-hurricane wind experience for the most recent 30 years is considered. This is a change from prior filings, where the non-hurricane wind experience back to 1950 was considered. In my opinion, using 30 years of experience for the excess wind procedure provides a better estimate of excess losses that is more responsive to recent loss experience than including experience back to 1950.

Losses are also trended to reflect the change in costs. The loss trend factor is selected separately for Fire and Extended Coverage by the Subcommittee after considering the frequency, severity, and pure premium experience in the Filing, as well as the Modified Consumer Price Index and CoreLogic Index. Unlike past filings, the trend factor is directly selected using these data sources to inform a selection rather than starting with the Modified Consumer Price Index and CoreLogic Index indicated loss trend factor and selecting an additional trend adjustment factor based on the frequency, severity, and pure premium experience in the Filing. Additionally, separate loss trend factors are selected for the historical and prospective periods whereas in prior filings there was only one loss trend factor selection for Fire and one for Extended Coverage. The historical period encompasses the period between the historical loss experience in the Filing and the average occurrence data of the latest year in the Filing, which is 7/1/2018 for this Filing. The prospective period encompasses the period from 7/1/2018 to one year beyond the assumed effective date of the Filing, 9/1/2022.

The committee elected to use this trend selection method due to its wide acceptance in actuarial practice. This method also allows for greater flexibility in reflecting differences between the historical and prospective period loss trend factors as well as the flexibility to consider more sources of data when determining actuarially sound selections for each loss trend factor.

After the loss trend factors are selected, the trended losses and loss adjustment expenses are divided by the earned house years (the exposure-base of this Filing) to determine the average trended loss cost. That cost is then converted to the trended base-class loss cost by dividing by the average rating factor for each accident year.

Each of the five accident years is applied a weight. For the Fire portion of the policy, accident year 2018, the most recent year for which data is available, receives a weight of 30%. Accident year 2017 receives a weight of 25%. Accident year 2016 receives a weight of 20%. Accident year 2015 receives a weight of 15%. Accident year 2014 receives a weight of 10%. These weights are consistent with past filings. The use of differing weights is a longstanding

procedure in the Fire analysis that is intended to reflect responsiveness to changes while incorporating multiple years of data. For the Extended Coverage analysis, all five accident years are applied an equal weight of 20%. This is consistent with past filings and is based on the concept that Extended Coverage perils are weather related and thus more volatile from year to year.

Q: How are losses from North Carolina's hurricane exposure reflected?

A: The Subcommittee considered actual historical experience of hurricanes in North Carolina. However, hurricane losses are so extreme and volatile that, for many years now, the accepted actuarial procedure for determining prospective hurricane losses has been through the use of hurricane models rather than actual hurricane losses. The Bureau began using hurricane modeling in 1993 with the AIR model, and the Bureau used that model uniformly and exclusively in all property filings until 2015 when the Bureau resolved to use two models. The Bureau first filed using two models in its 2016 Dwelling filing. The decision to use two models was deliberate and the result of several considerations. They included the positions and statements of the North Carolina Commissioner of Insurance, the North Carolina Department of Insurance, legislation that had been proposed in North Carolina, and the fact that many companies at that time were using two models (despite the significant extra expense and technical difficulty compared to only using one model). The Bureau decided that an actuarially appropriate methodology for a Bureau filing is to use two models and to weight their results equally. The legislature subsequently enacted a requirement that the Bureau use more than one hurricane model in Bureau property rate filings made after October 1, 2017. The Bureau uses two models in this Filing and thus satisfies this statutory requirement.

Prior to selecting the two modelers, the Subcommittee reviewed which modelers are most commonly relied upon by insurers, reinsurers and parties to related financial transactions. The Subcommittee found that AIR and RMS are the two most widely used hurricane modelers. Therefore, the Subcommittee selected RMS to be the second modeler and decided to continue using AIR as the Bureau has done since 1993. In this Filing, the Bureau has continued using AIR and RMS as the two modelers.

In determining prospective hurricane losses in the Filing, the Subcommittee made certain to use modelers whose models have been approved by the rigorous review process of the Florida Commission on Hurricane Loss Projection Methodology. That Commission has scrutinized hurricane models over many years and authorized their use in Florida rate filings. It retains experts in relevant fields who review the meteorological, wind engineering, damageability, claims, statistical, computer programming, economic and other aspects of modeling in great detail. Over the years, that Commission has recognized advancements in various scientific disciplines related to hurricane modeling and has required

modelers to incorporate such advancements. It approves only those models that meet its rigorous standards.

The Subcommittee noted that it is natural and expected that model results will differ and will change over time. Different models project different loss costs in different areas. Prior to the Bureau's having a second model run for the first time, the Subcommittee concluded that the actuarially sound and fair approach to the use of two models is to blend those models by averaging the loss costs of the two models. The Subcommittee determined that Aon, one of the world's largest reinsurance brokers, with extensive experience with modeling, could run the models, blend the results, and provide those blended results for use in the rate filing. The blended results from the AIR standard catalogue and the RMS long term historical model are employed to determine the prospective hurricane losses on page C-2 of the Filing. As will be discussed further below, the AIR warm sea surface temperature catalogue and the RMS medium term model are employed in the analysis by Aon of the net cost of reinsurance factor in the Filing.

The Subcommittee determined this year to refine the process of determining prospective hurricane losses by trending the exposures used in the models to the prospective period, using the exposure trend selected by the Subcommittee. By doing this, there was no longer any need to apply loss trend to the model results and therefore that was not done.

Finally, for catastrophe loss adjustment expenses in this Filing, the Bureau elected to employ a 6.0% loss adjustment expense factor based on Aon's data as to catastrophes - a factor that is lower than the factor based on data in non-catastrophe situations for extended coverage of 11.5%.

Q. Does hurricane modeling produce artificially high rate levels?

A. Absolutely not. One of the great values of models is that they help stabilize rate levels. Without modeling, rate levels would fluctuate wildly following the occurrence or non-occurrence of significant hurricanes. Modeling is relied upon by all stakeholders in insurance, reinsurance, catastrophe bond and other financial transactions to give the best and most unbiased projection of future hurricane losses. Different parties to those transactions often have opposing economic interests but, nevertheless, uniformly rely on models in their negotiations with each other.

Further, the Subcommittee made decisions that led to a lower estimate of hurricane loss costs than could otherwise have resulted. For example, the Subcommittee chose not to utilize the storm surge component of the models. The storm surge component is intended to reflect the fact that losses from storm surge flooding, that are not intended to be covered under a Dwelling policy, are sometimes paid as wind losses after a hurricane.

The model versions used in the Filing were RMS RiskLink v 18.1 and AIR Touchstone v 7.3. As is the customary and accepted practice in the insurance, reinsurance and catastrophe bond industries, the models were run with aggregate demand surge (AIR) and loss amplification (RMS) included. The Florida Commission on Hurricane Loss Projection Methodology has approved the use of aggregate demand surge and loss amplification for the AIR and RMS models, respectively. These aspects of the models account for the expected additional cost for supplies and labor if a very large hurricane event or series of events occurs. Experience demonstrates that when such catastrophic events have occurred, there is significant increase in demand for the limited supply of plywood, shingles, labor, hotel rooms and other necessities. The high demand for specialized labor often requires contractors to come in from out of state. Fundamental economic principles dictate that such a spike in demand increases prices, and consequently results in larger than normal claims payments in the aggregate. Additionally, there are delays in repairing properties, which can directly lead to longer stays in hotels, and there are other increased costs beyond those that occur after smaller hurricanes. Loss amplification also factors in claims inflation. Claims adjusters may not investigate every claim if it is under a certain threshold, given the volume of claims they have to settle post-event in a limited amount of time.

Q: How is the expense data compiled and reviewed?

A: The Bureau conducts special expense data calls annually. Companies individually complete the special expense call, which includes reporting expense dollars as well as premiums at collected level and adjusted to manual level. The Bureau checks and compiles this information for all companies and sends it to ISO to include in the Filing.

The percentages for Commissions and Brokerage, and Taxes, Licenses, and Fees are a function of written premium. The determination of whether to select expenses as a percentage of written premium or as a percentage of earned premium is influenced by which premium best matches the time at which the expenses are incurred. The ratios for these expenses from the North Carolina special calls for 2015, 2016, 2017, 2018, and 2019 were considered. The most recent three-year average was selected. For commissions & brokerage, the selection was 11.3% for Fire and 9.1% for Extended Coverage. For taxes, licenses and fees, the selection was 2.7% for Fire and 2.6% for Extended Coverage. General and other acquisition expenses are determined based on a ratio to earned premium at manual level. The North Carolina special calls for 2015, 2016, 2017, 2018, and 2019 were used for these as well. The most recent three-year average was selected. The selected general expense was 5.5% for Fire and 4.1% for Extended Coverage. The selected other acquisition expense was 9.0% for Fire and 7.2% for Extended Coverage. These selections are then adjusted by ISO to reflect trend.

The loss adjustment expenses, both allocated and unallocated, are included with the losses in calculating the indication. Like the other expenses, the Subcommittee reviewed the data from NCRB's data calls. Experience from calendar years 2015-2019 was reviewed. The ratio of loss adjustment expenses to incurred losses was analyzed. Consistent with past filings, the highest and lowest years were removed to allow for more stability due to the variable nature of incurred losses. The selected loss adjustment expense was 8.7% for Fire and 11.5% for Extended Coverage. As mentioned earlier, a lower loss adjustment expense provision for modeled hurricane losses of 6.0% was selected, based upon data from Aon.

The Subcommittee reviewed expense index trends, including the All Items CPI Index (both with and without Energy) and the Total Compensation Cost Index – Insurance Carriers, Agent Brokers, and Service from the Bureau of Labor Statistics. Based on the review, the Subcommittee selected a 2.2% trend. This factor was then used to trend expense dollars from the midpoint of the expense experience period to the midpoint of the prospective loss period.

Q: Please describe the nature and the operations of the Beach Plan and FAIR Plan as they relate to Dwelling insurance in North Carolina.

A: As noted earlier, the Beach Plan and the FAIR Plan are both residual market mechanisms created by the North Carolina legislature to write property insurance in situations where policyholders cannot obtain insurance through the competitive, voluntary market.

The Beach Plan and FAIR Plan write residential Dwelling insurance on the same policy forms approved for use by the voluntary insurance companies. Data from all of these policies is in the Filing. Companies that voluntarily write Dwelling insurance anywhere in North Carolina are subject to Beach Plan assessments, even if they do not write in the 18 coastal counties. However, voluntary companies are statutorily prohibited from receiving a distribution from the Beach Plan's surplus or from profiting on business written by the Beach Plan. Thus, the voluntary companies have no opportunity to make a profit on policyholders that are written in the Beach Plan but are subject to assessments for losses on those policyholders.

When a prospective policyholder seeks Dwelling insurance, it is not predetermined whether the policyholder will be written by the Beach Plan or FAIR Plan, or instead by a voluntary company. Policyholders often switch back and forth between the residual market and a voluntary company depending on which option works best for them and depending on whether a voluntary company will write them. In computing the exposures and the loss experience of the hypothetical one company in North Carolina for which rates are being made in

this Filing, the exposures and loss experience of the Beach Plan and the FAIR Plan must be combined with the rest of the data as if the Beach Plan and FAIR Plan were private insurance companies.

It is noteworthy that a very large percentage of Dwelling premium in the coastal counties goes to the residual market, rather than the voluntary companies. The Beach Plan was statutorily set up to be the market of "last resort." However, the voluntary companies have shied away from writing these policies. This is predominantly because the currently approved Bureau rates in the coastal counties are inadequate. Otherwise, with numerous companies competing in the state, normal competitive market forces would prevail, and companies would write voluntarily.

The fact that rates at the beach and coast are inadequate creates a dilemma for the Beach Plan and FAIR Plan. On the one hand, the inadequate rates diminish the their ability to build up sufficient surplus in the "good" years when there are no hurricanes in order to provide a cushion to pay losses in the "bad" years when severe hurricanes occur. Even in the good years, they have to pay claims for higher frequency insured events such as fires, etc.

The Beach Plan's and FAIR Plan's approach has been to purchase both reinsurance and catastrophe bonds. Whatever amounts they spend in the reinsurance and catastrophe bond markets is at the expense of building up their surplus in those years when hurricanes do not affect North Carolina.

Q. What portion of Dwelling insurance in North Carolina is written by the Beach Plan and FAIR Plan?

A. A very large percentage of Dwelling premium in the 18 coastal counties goes to the Beach Plan and the FAIR Plan, which together comprise the residual market. Combined, the Beach Plan and the Fair Plan write approximately 96% of the Dwelling premium in the beach areas (the barrier islands) and approximately 77% of the Dwelling premium in the coast areas (the remainder of the 18 coastal counties). The FAIR Plan also writes approximately 40% of the Dwelling premium in the rest of the state. That means that approximately 61% of Dwelling premium statewide in North Carolina is written by the Beach Plan and the FAIR Plan.

Q. What are some of the other consequences of the inadequacy of Bureau manual rates, both at the coast and in the rest of the state?

The prospect of Beach Plan and FAIR Plan assessments affects the willingness of a company to write property insurance in North Carolina. A company knows that, following a powerful hurricane, it will be subject to residual market assessments for huge losses on business that the company did not choose to write in the first place, and those assessments are based on the company's

market share throughout the state. Therefore, companies that elect to write in the state must consider the extent that they will do so in various areas of the state, particularly in the beach and coastal territories where the risk of hurricane losses is greater.

Q. Please explain assessments on companies and policyholders that will occur when a catastrophic hurricane hits the coastal area and exceeds the ability of the Beach Plan to pay losses.

A. When a truly catastrophic hurricane occurs, the inadequacy of rates at the beach and coast will lead to one and possibly two types of assessments to pay for Beach Plan and FAIR Plan losses: "non-recoupable assessments" on the companies that voluntarily write homeowners insurance throughout the state and "catastrophe recovery charges" on all property insurance policyholders throughout the state. These assessments are provided for in the governing statutes, and those statutes essentially provide that, in order to pay the Beach Plan's and FAIR Plan's losses after their surplus and reinsurance are exhausted, assessments will be made. The first assessment to occur is on companies and, for Beach Plan losses, is capped at $1 billion. As a practical matter, the Beach Plan in recent years has placed this $1 billion in its overall funding plan after its surplus and before its reinsurance. The catastrophe recovery charge on property insurance policyholders statewide will occur following exhaustion of the $1 billion assessment on companies and the Beach Plan's reinsurance. Mr. Anderson's testimony describes these mechanisms and the Beach Plan's current reinsurance program in more detail.

Since the non-recoupable assessments will be imposed on companies in accordance with a formula reflecting each company's property insurance writings across the entire state, a company will be assessed even if it elected not to write any homeowners policies in the beach and coastal counties.

Once the $1 billion assessment on the companies for Beach Plan losses is exhausted, the catastrophe recovery charge on policyholders throughout the state could be up to 10% of their premium per year. The voluntary companies will be required to administer the charge by billing and collecting the catastrophe recovery charge from policyholders. The 10% charge would continue annually as long as necessary to collect the amounts that were paid as Beach Plan losses.

The ultimate effect of the regulatory system in North Carolina is that rates for policyholders insured through the Beach Plan and FAIR Plan are being subsidized. The subsidy arises from the fact that insurance companies have to pay the first $1 billion of losses over and above the Beach Plan's existing surplus. In addition, there is the further subsidy in that policyholders across the state face the possibility of the 10% catastrophe recovery charge. Another way

of looking at the situation is that the insurance industry and policyholders across the state are providing free reinsurance to the Beach Plan.

It is important to note that the companies' exposure to losses of the FAIR Plan are not subject to the $1 billion cap that is applicable to Beach Plan losses. While the FAIR Plan does not write homeowners policies, it writes dwelling fire and extended coverage policies statewide, except in the beach territories. Those policies are vulnerable to losses from catastrophic hurricanes. Companies are subject to unlimited assessments from these losses. The FAIR Plan has experienced significant growth in the years before and during the experience period of this Filing and, as noted above, the portion of the Dwelling premium written by the FAIR Plan in North Carolina is very significant.

Q: Has the risk of residual market assessments been considered in the Filing?

A: Yes. The residual market for property insurance in North Carolina is very large. In all 100 counties, Dwelling policies can be written by a residual market mechanism. The companies that voluntarily write property insurance in North Carolina are vulnerable to situations where large hurricanes cause losses that exceed the surplus and reinsurance of the residual market mechanisms. The prospect of residual market assessments is a cost of doing business in the state and, as I noted, is a condition for writing Dwelling insurance. This cost is imposed by state law and companies have no choice but to absorb it if they want to write in North Carolina. The statutes also provide that this prospective exposure to assessments is to be considered in the rates. As I pointed out above, in the event that payment of hurricane losses exhausts the Beach Plan's surplus and reinsurance, a non-recoupable assessment will be imposed of up to $1 billion dollars annually on the voluntary companies. Losses from the FAIR Plan are also assessed on the companies, but they are not capped and are thus unlimited. Assessments by the Beach Plan and the FAIR Plan are a significant consideration for companies in terms of choosing to do business in North Carolina and selecting the amount of insurance they are willing to write. The voluntary companies need to have and retain capital to pay these potential assessments.

Mr. Anderson performed an analysis to quantify the cost of this prospective exposure to assessments. The Subcommittee reviewed that analysis, which is labeled "compensation for assessment risk," and determined that a 2.9% factor is appropriate to reflect in the Filing for this prospective exposure to assessments. It is important to note that the assessment potential changes with the surplus level of the Beach Plan and with the size of the FAIR Plan. The provision for the compensation for assessment risk would be much higher if the exposure for the voluntary market companies for Beach Plan losses were greater than $1 billion each year.

Q: Is the net cost of reinsurance considered in the Filing?

A: Yes. Large catastrophe losses present a very real risk to the long-term viability of Dwelling insurers and their ability to follow through on their promise to policyholders to pay losses when they occur. There are numerous scenarios where the potential losses due to a single hurricane are far greater than the entire premium collected by all the companies for the entire state of North Carolina. To remain viable long-term and protect against insolvency, the industry must purchase reinsurance to help cover this risk. The costs associated with such reinsurance are costs of doing business in the state. To reflect the portion of those costs that is not already covered in the Filing, a provision for the net cost or reinsurance is included in the Filing.

Q: What is reinsurance?

A: Simply, reinsurance is insurance for insurers. When insurers are aware of scenarios in which the potential losses are greater than the company is willing or able to tolerate, they will frequently purchase reinsurance to mitigate the risk in those situations. Additionally, insurers may issue catastrophe bonds to protect themselves in those situations. Essentially the insurers will use a portion of the premium to purchase reinsurance. This is common across the industry, including at Allstate.

Q: How are the net reinsurance costs reflected in the Filing?

A: The net costs of reinsurance are incorporated through the work of Aon, one of the largest reinsurance brokers in the world. Based on Aon's extensive data and experience related to reinsurance transactions, Aon advised the Subcommittee as to the parameters of the reinsurance program that the hypothetical one company for which rates are being made in the Filing would reasonably select. Aon then applied the reinsurance program selected by the Subcommittee to calculate the net cost of reinsurance. Aon maintains extensive, current data on reinsurance transactions and has vast experience with those transactions. The parameters that were recommended by Aon and selected by the Subcommittee include the attachment and exhaustion points, the placement percentage, the perils that are commonly included in reinsurance treaties for a hurricane prone state such as North Carolina, and the inclusion of one reinstatement. The parameters reflect the amount of reinsurance that the hypothetical one company should purchase to optimally protect its solvency. Consistent with Aon's vast experience and sound advice, the Subcommittee recommended the use of AIR's warm sea surface temperature event set and RMS' medium term model as the bases for determining the provision for reinsurance costs. Reinsurers, primary insurers and other parties customarily use such models to determine reinsurance rates. The results from those two models were used to determine the net cost of

reinsurance that is incorporated in the rate level calculations in Section C of Exhibit RB-1 of the Filing.

Q: Can reinsurance payments by each company writing in North Carolina be allocated and aggregated for use in this Filing?

A: No. It is not possible to measure reinsurance costs of the various insurance companies applicable specifically to Dwelling insurance written in North Carolina. The first reason is that companies often do not enter reinsurance treaties exclusive to only one line of insurance. The approximately 48 individual insurance companies have hundreds of different treaties that cover many different lines of insurance (automobile, commercial property, other residential property, etc.) as well as dwelling. Second, reinsurance treaties often are not exclusive to just North Carolina or for only one peril. Companies negotiate reinsurance treaties in many different geographical areas (portion of a state, single state, multiple states, Atlantic Basin areas, countrywide, international, etc.), and covering many different perils (such as automobile flooding, hurricanes, direct earthquake losses, tornados, wildfires, etc.). Finally, reinsurance for a given set of risk exposure (such as North Carolina Residential Dwelling) is often not limited to one treaty. An individual company will purchase reinsurance from different reinsurers for different layers of loss under different types of treaties, or also use catastrophe bonds for different layers of loss. For these reasons, it is not feasible to measure reinsurance costs specific to North Carolina, much less specific to the line of Dwelling insurance, in each individual treaty or bond or for each individual company.

It is important to note that the calculation of the net cost of reinsurance in this Filing relates exclusively to the residential dwelling loss costs in North Carolina. It would not be appropriate for North Carolina insureds to assume the reinsurance costs of exposures in other states and vice-versa. Aon's database is based on actual reinsurance transactions and on conditions in the current reinsurance market and is updated regularly to reflect changes in actual market conditions. Aon's database and expertise are a great source of information as to actual reinsurance practices and costs for the hypothetical one company writing residential Dwelling insurance in North Carolina.

Q. Are the reasons that the Beach Plan and FAIR Plan purchase reinsurance similar to the reasons that the hypothetical one company must purchase reinsurance?

A. Yes. The Beach Plan/FAIR Plan and companies must purchase reinsurance for essentially the same reasons. Likewise, for ratemaking purposes, the hypothetical "one company" for which the Bureau files rates must purchase reinsurance. That hypothetical one company is faced with numerous realistic hurricane loss scenarios that far exceed its ability to pay.

The hypothetical one company (voluntary companies plus the Beach Plan and FAIR Plan) receives about $300 million in residential Dwelling earned current level premium annually in North Carolina. There are many scenarios in which hurricane losses are projected to be many multiples of that amount. If an individual company experienced a loss many multiples of its collected premium, it would first look to its surplus and reinsurance. If the surplus and reinsurance were not sufficient, then that company would become insolvent. Individual companies do not have a backstop like the Beach Plan and FAIR Plan have, which can call upon the companies and policyholders across the state to pay their claims. There has been a history of company insolvencies following major hurricanes in the United States. Following Hurricane Hugo that hit Charleston, South Carolina and Hurricane Andrew that hit Florida, there were multiple insolvencies.

It would be irresponsible and imprudent for the hypothetical one company not to purchase reinsurance. The net cost of reinsurance analysis prepared by Aon reflects the need of that hypothetical one company to purchase and maintain reinsurance. Aon has access to the world's largest database of reinsurance transactions and uses that database to calculate the net cost of reinsurance provision used in the Filing. The Rating Subcommittee reviewed and approved Aon's analysis.

Q: Have dividends to policyholders been considered in the Filing?

A: Yes. According to the Statement of Principles Regarding Property and Casualty Insurance Company Ratemaking, the rates should contemplate the cost of policyholder dividends. Policyholder dividends are returns of premium to a company's policyholders and are not the same as dividends that publicly traded stock companies (owned by shareholders) pay to their shareholders. The Subcommittee reviewed policyholder dividends over the years 2014 through 2019. It noted that payments have consistently been made and in material amounts. Therefore, the Filing has incorporated a provision of 0.5% of premium for Fire and 0.8% for Extended Coverage to reflect anticipated dividends during the prospective period for which rates are being made in this Filing. Reflecting anticipated dividends is an actuarially sound methodology in a rating bureau context such as that in North Carolina where rates are made for all companies.

Q: Have deviations been considered in the Filing?

A: Yes. Deviations are a cost of doing business in North Carolina for the insurers that have them approved by the Department. They are a cost of risk transfer and therefore need to be contemplated in the rates according to the Statement of Principles Regarding Property and Casualty Insurance Ratemaking. They constitute "savings" that must be considered pursuant to statute. Companies are required to report their approved deviations. If rates were set without contemplating deviations, the industry would not achieve the profit provision

included in the rates. The Subcommittee reviewed the net variances from manual premium from deviations, consent to rate and Beach Plan surcharges and did not elect to include a factor for deviations in this Filing.

Q: Did the Subcommittee consider the profit provision?

A: Yes. The Subcommittee picked a conservative underwriting profit provision. Dr. Vander Weide provided a range for the current cost of capital, which was relied on by the Subcommittee. The range varied from 8.0% to 10.7% on net worth.

The Subcommittee selected an underwriting profit provision of 8.5% of premium for fire and 8.5% for extended coverage. Based on Dr. Zanjani's analysis, these underwriting profit provisions would generate a statutory return on net worth of 7.1% for fire and 6.9% for extended coverage. That return is below Dr. Vander Weide's lower bound of 8.0%.

It is the statutory return that should be considered when determining the underwriting profit in North Carolina because it does not take into account investment income on surplus. Clearly, the Subcommittee is being very conservative with its selection. Even if investment income on surplus were to be considered in addition to investment income from insurance operations, the estimated return on net worth generated by the 8.5% underwriting profit provision selections would be 9.6% for fire and 9.3% for extended coverage. That return is within Dr. Vander Weide's range, and thus the selected underwriting profit provision remains a selection that is not excessive.

The Bureau has capped the filed Extended Coverage rate changes below the indicated rates such that the Extended Coverage rate change does not exceed 25% in any territory. Assuming all other assumptions in the Filing are realized, that would result in even lower profit margins being realized for Extended Coverage.

Q: Did the Subcommittee consider a contingency provision?

A: Yes, the Subcommittee selected a 1% contingency provision. This is consistent with past filings and is a common industrywide practice across the country. The contingency provision takes into account the total systematic bias from multiple sources that tends to cause the indicated rate level to be inadequate. These biases can cause actual losses to be higher than reflected in the rates, or cause actual premiums to be lower, or both. Either way, when realized, the systematic bias typically renders the indicated rate inadequate.

Sources of this systematic bias in property insurance include, but are not limited to, judicial decisions that extend policy coverage beyond what was anticipated in the rates, legislative changes, regulatory delay in achieving the indicated rate change or regulatory reduction of the rate change.

Courts rarely restrict coverage to less than intended in the policy forms and frequently expand coverage beyond what was intended. In addition, major unexpected losses can and do come from large and infrequent events of a type and magnitude that are not reflected in the experience period.

One historical example is the sudden surge of mold claims around the early 2000's that far exceeded the amounts seen in experience periods. In addition to unforeseen claims, rate filings are often not approved prior to their intended effective date, while some much-needed rate filings are denied altogether. The Subcommittee reviewed the analysis performed by Mr. Anderson in Exhibit RB-19 showing that the historical delays in effective date for Bureau Homeowners and Dwelling filings resulted in an average impact of 1.1% to the indicated rate level. This analysis alone, which only covers one potential source of need for a contingency provision, supports the 1% provision selected by the Subcommittee.

Because of these factors, estimated premium that does not reflect a provision for contingencies will fall short of adequate premium very frequently. When these premiums are inadequate and underwriting losses are observed, an insurer must borrow from surplus to indemnify its policyholders or claimants. According to the Actuarial Standard of Practice #30, "the actuary should include a contingency provision if the assumptions used in the ratemaking process produce cost estimates that are not expected to equal average actual costs, and if this difference cannot be eliminated by changes in other components of the ratemaking process." The Subcommittee believes that a contingency provision is appropriate and necessary, and has selected a 1% factor in this Filing, the same as with all recent property insurance filings. The Subcommittee also believes this is a conservative estimate given the multitude of factors that could influence this provision.

Q. Did the Subcommittee consider the potential impact on Dwelling insurance of COVID-19 and the current pandemic?

A. Yes, the Subcommittee contemplated the impact of COVID-19 and the current pandemic on Dwelling insurance but decided not to make an adjustment to the Filing. The Subcommittee was unaware of any quantitative evidence that supported an adjustment to the historical loss costs or other components of the Filing. Additionally, even if 2020 data suggested a possible adjustment to the Filing's projected loss costs, the prospective nature of ratemaking requires the Subcommittee to make further assumptions around whether COVID-related shifts in loss costs would exist as of the implementation date of 9/1/2021 and into the period the rates will be in effect for this Filing. Given the lack of quantitative evidence and inability to accurately project whether a hypothetical adjustment should apply to the prospective period beginning 9/1/2021, the Subcommittee agreed that an adjustment should not be pursued for this Filing.

Q: Are the data in the Filing reliable and accurate for ratemaking purposes?

A. Yes. The data underlying the Filing are reliable, accurate and appropriate for ratemaking. There are three levels of quality checks performed by individual companies, statistical agents and ISO. Individual insurance companies employ extensive procedures to assure the quality and reliability of ratemaking data used in the Filing. When individual companies submit their data to their statistical agents, the statistical agents review the data for possible errors and compliance with approved statistical plans. If an error is suspected, the statistical agents ask the company to review the data and to correct the data if necessary.

When ISO aggregates premium, loss and expense data from the statistical agents, it reviews the accuracy of the data and similarly requests that the data be reviewed and corrected if errors are suspected.

These data include data for business written at or below the Bureau manual rates, business written under consent to rate procedures and therefore above the Bureau manual rate, and business written in residual markets (the Beach Plan and FAIR Plan). When the Bureau assembles expense data and furnishes it to ISO, they also perform checks to determine the data's accuracy. Sometimes it is not feasible for a company to correct its data, and in these cases that company's data is excluded from the Filing and that fact is noted in the Filing.

An additional check is that the Bureau requested that the statistical agents produce exhibits for the 10 largest writers of the Fire and Extended Coverage portions of the policy displaying exposure distributions for key factors (such as territory, amount of insurance and protection class) for the experience years in the Filing. Each company was asked to review and evaluate the accuracy of its data as reported to its statistical agent. Companies have confirmed that they have performed these reviews and that to the best of their knowledge their data are correct in all material respects.

Q: You referred earlier to the difference between the "indicated" rate level and the "filed" rate level. Can you please explain the nature and the effect of capping in this Filing?

The indicated rate level is the actuarially sound rate level. It is the rate level necessary to ensure that rates cover prospective losses and expenses and provide a fair and reasonable profit. The indicated rate level is the one that complies with the statutory standards that the rates be neither excessive, inadequate nor unfairly discriminatory.

In this case, the indicated overall rate level change is 44.4%. That rate level change is the statewide composite of the Dwelling Fire and Extended Coverage indications that vary by territory throughout the state.

The “filed” rates represent the rate changes proposed by the Bureau. The filed rates reflect a procedure known as “capping.” The Bureau’s Governing Committee reviewed the actuarially sound rate level indications determined by the Rating Subcommittee and elected to reduce the impact on policyholders by filing no change for Fire and by capping the indications at 25% in each territory for Extended Coverage.

These caps result in a reduction from the overall indicated rate level change of 44.4% to a filed rate level change of 24.6% on Extended Coverage, and an overall filed rate level change of 18.7%. Capping is a common and justifiable practice in the industry that limits premium disruption to policyholders, and the modest extent of capping in this Filing still allows for significant and meaningful movement towards the full actuarial indicated rate level.

Q. From the standpoint of individual companies, how does ratemaking in North Carolina differ from other states?

A. In almost every other state, each company files its own Dwelling rates independently. However, in North Carolina, the Bureau has the responsibility to file rates on behalf of the entire industry. The filing process in North Carolina establishes a system of “Bureau rates” (often called “manual” rates) for use on all Dwelling policies written in the state.

In essence, the Bureau makes rates based on the aggregate policyholder attributes and loss experience of all the Dwelling policies written in the state. Those policies include characteristics such as the dollar amount of insurance written on each home, the geographic location of the home, the protection class of the area in which the house is located, the type of construction, the deductible amount, etc.

Once the Bureau rate has been set through the filing and approval process, Bureau companies must charge that rate unless they file their own deviations with the Commissioner or engage in the consent to rate process. A company’s proposed premium may exceed the Bureau rate through the consent to rate process only if that higher premium is charged in accordance with rules adopted by the Commissioner.

Q. You stated earlier that premiums should be established at a level equal to expected losses plus expected expenses and a margin for a fair and reasonable profit. Does this mean that Dwelling ratemaking is a simple matter of adding up past losses, past expenses and past profit and then putting them into a simple equation to equal premium?

A. That is not at all the case, for numerous reasons. The first reason is that ratemaking is prospective in nature. The ratemaking process requires the determination of the expected future losses and the expected future expenses of

the composite company that will be incurred in the projection period. While it is important to consider past losses and expenses in determining expected future losses and expenses, the process is much more complex than that. There may be many reasons why past losses and expenses are not a perfectly accurate reflection of future loss and expense levels. Loss and expense cost trends can be driven by a wide range of factors such as inflation, cost of building materials, frequency of weather events, etc. Therefore, trends need to be projected into the future to determine accurate projected losses and expenses.

Further, it is particularly difficult to estimate prospective losses for property lines of business such as Dwelling insurance because loss amounts in those lines are so volatile and the types of perils insured are so varied. For numerous reasons, it is more difficult in property lines than in other personal lines to determine prospective losses because policies cover so many different situations and events. For instance, Dwelling policies must pay for losses to buildings and contents for fires, for numerous types of weather events including hurricanes and tornados and for other perils. Even putting aside the potential impact of hurricanes, property lines are highly impacted by weather events such as tornado outbreaks, winter storms, hail storms, freezing temperatures, etc.

Such volatility is greatly compounded in hurricane prone states such as North Carolina. In North Carolina and other hurricane prone states, a significant percentage of the prospective long-term average annual losses in certain territories of the state are caused by intense hurricanes, which are relatively infrequent but are devastating when they do occur. It would be actuarially unsound to rely on a few years of actual hurricane losses to estimate prospective hurricane losses because of the volatility of these losses driven by low frequency and high severity.

The volatility of property insurance in a hurricane prone state can be explained in part by a statistical concept of “independence” that is useful to consider in distinguishing between different lines of property casualty insurance. If one home is damaged by a hurricane, it is very likely that many other homes in the same geographic region will be damaged at the same time. The risk of damage for each individual home is not independent of the risk of damage to the other homes because a single event can cause widespread damage. As a contrast, in auto liability insurance, when there is one auto collision there generally is not a greater likelihood of there being numerous other auto collisions in the same geographic region at the same time. While the amount paid under bodily injury or property damage coverage because of that single auto collision may far exceed the premium collected for the individual policy involved, that fact is not replicated to numerous other policies because auto collisions are generally random and independent events. However, when intense hurricanes occur, there are likely to be payments far greater than the total premium collected on a large number of policies due to the geographic concentration of the event.

Q. Does the Filing in any manner require policyholders in North Carolina to pay the losses or subsidize the rates of policyholders in other states, particularly hurricane prone states such as the Gulf Coast states?

A: No, it would be actuarially inappropriate to do so. Each state is evaluated separately, and rates in North Carolina are based only on North Carolina's loss potential. Imposing such a subsidy would not be fair to North Carolina policyholders and would not be permitted by North Carolina regulators. There is a greater risk of hurricane losses in Florida and some other Gulf states than in North Carolina, and it would not be fair or actuarially sound for North Carolina policyholders to pay for their losses or subsidize the insurance costs for persons in those areas. For the same reason, it would not be fair or actuarially sound for the Bureau to attempt to spread the hurricane exposure of the hypothetical one company in North Carolina to persons in other states such as in the Midwest where there is little hurricane exposure. Policyholders and regulators in Iowa, for example, would not be willing to share that risk. To summarize, using other states' losses to determine North Carolina rates is unfair and inequitable, and the Bureau does not do this for these reasons.

Q. Did the Subcommittee review rate level adequacy by territory?

A. Yes, the Subcommittee asked ISO to calculate the indicated rate level changes by territory. The indicated change for a particular territory, as you would calculate indicated change for any given rating group, was calculated by dividing the required base class rate by the existing base class rate and subtracting 1.

First, ISO calculated the indicated base class loss cost by territory. This resulted from calculating the total loss cost by territory and applying the resulting territorial relativity to the indicated statewide base loss cost. The territorial indicated base class loss cost was converted to the required base class rate by performing expense, profit, and deviation adjustments at the territorial level – similar to how adjustments were performed at the statewide level for these ratemaking elements. The indicated changes by territory show the rate levels by territory needed to spread the overall rate level equitably.

Q. Can you identify Exhibit RB-1?

A. Yes. This is a large portion of the Filing submitted by the Bureau with respect to revised Dwelling insurance rates in North Carolina. Exhibit RB-1 includes numerous exhibits, regulation responses and explanations pertaining to the indicated and filed rate level changes. The Filing also includes the rate manual (Exhibit RB-2), territory maps (RB-3), as well as the prefiled testimony and exhibits of six witnesses in addition to mine (Exhibits RB-4 through RB-29).

Q. Can you identify the document marked Exhibit RB-2 and entitled "Dwelling Policy Program Manual"?

A. Yes. As I mentioned, Exhibit RB-2 includes the current manual of rules, rates and classifications used to write Dwelling insurance in North Carolina. The manual and any amendments have been approved by and are on file with the Commissioner. Copies are maintained at the offices of the Bureau.

Q. Can you identify the document marked Exhibit RB-3 and entitled "Territory maps"?

A. Yes. These are maps of the current territories used for classifying residential dwelling risks in North Carolina.

Q. Are you aware of changes in this Filing other than to the Dwelling rates?

A. Yes. In addition to the Dwelling base rates, the Windstorm or Hail Exclusion Credits and Windstorm Loss Mitigation Credits are changing. Additionally, Age of Construction factors are being introduced.

Q. What is your opinion as to whether the indicated rate level changes in the Filing are excessive, inadequate or unfairly discriminatory?

A. It is my opinion that the indicated rates in the Filing are actuarially sound and meet the legal standards of producing rates that are not excessive, inadequate or unfairly discriminatory. In that regard, I have relied upon the accuracy of the data and analyses supplied by the statistical agents, the Bureau, Aon and Milliman as reviewed and checked. I have also relied on the reinsurance and profit analyses performed by Aon, Dr. Zanjani and Dr. Vander Weide. I qualify my opinion by noting that the filed rates have been developed by applying territory caps to the indicated rates. The filed rates are not excessive and the 18.7% filed rate increase is a reasonable step toward the adequate rate level.

Q. Does this conclude your prefiled testimony?

A. Yes.

PRE-FILED DIRECT TESTIMONY OF MINCHONG MAO

2020 DWELLING INSURANCE RATE FILING
by the
NORTH CAROLINA RATE BUREAU

Q. Please state your full name and business address for the record.

A. My name is Minchong Mao. My business address is Aon, 200 East Randolph Street, 11th Floor, Chicago, Illinois 60601.

Q. What is your involvement in this matter?

A. My employer, Aon, has been retained by the North Carolina Rate Bureau (NCRB) to provide catastrophe and reinsurance analytics with respect to the expected hurricane losses utilized in the NCRB 2020 Dwelling Insurance rate filing. I am part of the catastrophe analytics team at Aon that performed these services.

Q. What are your primary responsibilities for Aon?

A. I am a Managing Director and a Catastrophe Actuary at Aon's Reinsurance Solutions - Catastrophe Risk Analytics group. I advise clients on catastrophe actuarial services, such as rate indications, rate filing strategy, underwriting

strategy, and use of catastrophe models in risk management. I am responsible for Aon's compliance with ASOP 38 regarding use of catastrophe models. I am a consulting actuary for Aon's in-house model Impact Forecasting, LLC. I work with a group of catastrophe modelers to provide catastrophe modeling support for reinsurance placements. Our client services include but are not limited to support for multi-model analytics, customized view of risks, catastrophe pricing, catastrophe risk selections, data augmentation, model evaluation, real-time event response, portfolio optimization, actuarial support, reinsurance cost allocations, and rating agency questionnaire support.

Q. Describe your professional and educational background.

A. I have been with Aon since September 2018. Prior to joining Aon, I worked at State Farm Insurance Companies for over 17 years from 2001 to 2018 where I led the catastrophe modeling functions since 2005. During my tenure at State Farm, I was responsible for State Farm's use of catastrophe models in pricing, underwriting, claims, reinsurance, securitization, enterprise risk managements, and rating agency reporting.

I had 2 years of rate making experience as a pricing actuary for Homeowner lines at State Farm. I am familiar with the development and implementation of property insurance rates and rules. I understand the challenges for an insurer to balance rate adequacy, competitiveness, and meet financial objectives at the same time.

I have a Bachelor's degree in Biochemical Engineering from Beijing University of Chemical Technology, a Master's degree in Chemistry from Eastern Illinois University, and a Master's degree in Computer Science from the University of Missouri - Columbia.

Q. Are you a member of any professional actuarial organizations?

A. Yes. I am a Fellow of the Casualty Actuarial Society (FCAS), and a Member of the American Academy of Actuaries (MAAA). I am a Certified Catastrophe Risk Management Professional (CCRMP), a new designation created by the CAS Institute (iCAS) and International Society of Catastrophe Managers (ISCM). I am currently serving on the Casualty Actuarial Society's Climate Change Committee, American Academy of Actuaries' Extreme Event Risk Committee, and on the advisory board for CCRMP designation. I am in good standing with the requirements of all of these organizations.

I am part of a working group that authored the following monographs for the American Academy of Actuaries:

- The National Flood Insurance Program: Challenges and Solutions (2017)
- Uses of Catastrophe Model Output (2018)
- Wildfire: An Issue Paper - Lessons Learned from the 2017–2018 California Events (2019)

I am one of the recipients of the Casualty Actuarial Society's Above and Beyond Achievement Award in 2019 to recognize my leadership and contributions to establish the CCRMP designation for the insurance industry.

Q. Please describe your relevant experience and qualifications for this proceeding.

A. I started practicing in the catastrophe risk management field in 2005. During my tenure at State Farm, I managed State Farm's catastrophe modeling function from 2005 to 2018. I managed vendor relationships with AIR, EQECAT, ARA, and RMS. I provided filing support and helped my employer through many regulatory challenges related to the use of models in insurance operations. I provided actuarial opinions on State Farm's use of catastrophe models. I established the due diligence and model validation framework to ensure catastrophe modeling practices at State Farm met the actuarial standards and complied with laws and regulatory requirements. My team provided various catastrophe risk measures and analytics for State Farm Fire and affiliates for rate making, exposure management, claims, ERM, rating agency reporting, reinsurance and securitization purposes.

From 2010 to 2013, I was a member of an advisory group to the Insurance Bureau of Canada (IBC) and Office of the Superintendent of Financial Institutions (OSFI) to provide expert opinions on insurance and the economic impact of

major earthquakes in Canada. From 2011 to 2013, I was a member of an advisory group for IBC and OSFI to revise OSFI Guideline B-9 (Earthquake Exposure Management Sound Practice Guideline for insurance companies). I led a State Farm team to establish the compliance framework to meet OSFI B-9 regulation requirements.

In January 2015, I was appointed by Florida CFO Jeff Atwater to serve on the Florida Commission on Hurricane Loss Projection Methodology (FCHLPM) as the industry actuary. From January 2015 to September 2018, I represented the property insurance industry on the FCHLPM to review and accept hurricane models for use in ratemaking in the State of Florida. My term on the FCHLPM ended in September 2018 due to my job change.

The hurricane models used for this rate filing, AIR Touchstone V7.3 and RMS RiskLink V18.1, are both certified by FCHLPM.

Q. Please describe how ASOP 38 is applicable in this rate filing?

A. The Actuarial Standard of Practice Number 38 (ASOP 38) has been in effect since December 2000. ASOP 38 was created, to some extent, to address the use of stochastic computer hurricane simulation models in the insurance rate making process. ASOP 38 established certain requirements for actuaries who use output from a model that is outside of that actuary's area of expertise.

Hurricane models are developed by a group of experts including meteorologists, structural engineers, actuaries, statisticians and computer scientists. Some model components are outside of the area of expertise of actuaries. Due to their complexity and reliance on different science disciplines, as well as the relative newness of their use in establishing property insurance rates at the time, many actuaries are not as knowledgeable about these models as they are about the traditional rate making methodologies.

Hurricane models are utilized to establish the hurricane loss cost and reinsurance cost allocation for this NCRB filing. Therefore, compliance with ASOP 38 is relevant to the filing.

Q. Is Aon's use of catastrophe models in compliance with ASOP 38?

A. Yes, Aon's catastrophe modeling practice in general and as it relates to this NCRB filing is in compliance with ASOP 38. ASOP 38 provides guidance to the actuary in using models that incorporate specialized knowledge outside the actuary's own area of expertise when developing an actuarial work product, and has been included as Exhibit RB-8. When using such a model, the standard requires that the actuary perform five specific tasks:

a. Determine appropriate reliance on experts;
b. Have a basic understanding of the model;

c. Evaluate whether the model is appropriate for the intended application;

d. Determine that appropriate validation has occurred; and

e. Determine the appropriate use of the model.

In addition to relying on vendors' experts, Aon has an in-house model evaluation team. This team consists of members with advanced degrees in meteorology, structural engineering and statistics. Soon after models are released, the model evaluation team performs sensitivity testing to identify key drivers of model changes and potential anomalies. I work closely with the model evaluation team at Aon to ensure the sensitivity testing covers all aspects of ASOP 38 requirements. I review the testing results through an analytics dashboard. I document my reviews for each peril model. Upon completion of the review, I sign an ASOP 38 attestation. Copies of the current ASOP 38 attestations for the AIR and RMS models are included in the filing as Exhibits RB-9 and RB-10, respectively.

Q. Describe the role of Aon Reinsurance Solutions Analytics and Catastrophe Risk Analytics.

A. Aon Reinsurance Solutions Analytics (a.k.a Reinsurance Analytics) provides consultative services to Aon's clients who place catastrophe reinsurance through Aon. These clients are primary insurers selling property insurance products in catastrophe prone areas. Aon Reinsurance Analytics provides value added

service that is above and beyond reinsurance brokering transactions. Our client services include but are not limited to support for multi-model analytics, customized view of risks, catastrophe pricing, catastrophe risk selections, data augmentation, model evaluation, real-time event response, portfolio optimization, reinsurance cost allocations, actuarial support and rating agency questionnaire support.

Within the Reinsurance Analytics division, there is a team specialized in catastrophe risk analytics. I am part of the catastrophe risk analytics team that provides clients with catastrophe risk management information and assists clients with their reinsurance purchasing decisions.

Q. Describe your experience with catastrophe models.

A. From 2005 to 2006, I performed the catastrophe modeling analyst's role, which includes hands-on experience with multiple models - from data preparation to running the models, to post model aggregation. My daily work involved data preparation and converting exposure data into model input files. I gained knowledge about how different models handle building characteristics and insurance terms. I used RMS RiskLink, AIR Clasic/2, and EQECAT models on a daily basis. I developed an understanding of the models' back end database and output. I performed post model analysis and wrote computer programs to develop risk metrics such as PMLs, AALs, and TVaR to help State Farm assess

and manage catastrophe risks. Later in my career, I assembled a team and delegated many modeling tasks to my colleagues. I stayed involved by providing guidance and managing the day to day work of the catastrophe modeling unit.

Q. Describe your experience with catastrophe reinsurance.

A. My experience with reinsurance started in 2005 at State Farm. State Farm is a reinsurance buyer and I was a part of the company's reinsurance buying team. I supported the reinsurance function at multiple levels. My work included using catastrophe model output and financial information to help my employer in structuring reinsurance, conducting technical pricing, drafting and reviewing reinsurance contracts, and participating in reinsurance buying trips. I evaluated catastrophe risks and cost of capital from both ceding and assuming parties. I worked closely with our reinsurance broker to validate our view of risks using external benchmarks. At Aon, I work directly with our clients who are seeking to purchase catastrophe reinsurance. Output from models is used by our brokers, clients, and capital markets to determine the reinsurance structure and pricing. We customize reinsurance solutions based on clients' risk appetite and risk profile.

Q. Do you speak on topics pertaining to catastrophe modeling?

A. Yes. I have presented at CAS Ratemaking, Product and Modeling Conferences. I am a frequent speaker at Reinsurance Association of America's

annual catastrophe modeling conference. My topics have included model blending, model regulation, and wildfire modeling, among others. From 2012 to 2018, I was a visiting instructor for the Illinois State University Math Department Actuarial Science program. I presented catastrophe modeling and regulatory topics to actuarial students. From 2016 to 2018, I was a member of the planning committee for the Reinsurance Association of America's annual catastrophe modeling conference. I organized and moderated panels and engaged speakers to cover a variety of catastrophe topics.

Q. What was Aon's role in this filing with respect to expected hurricane losses?

A. Aon performed data validation and shared control totals with NCRB; Aon's catastrophe modelers ran AIR Touchstone V7.3 and RMS RiskLink V18.1 models based on exposure data provided by NCRB; Aon blended the model results for NCRB based on well-established methodology and provided the modeled average annual loss to NCRB; Aon conducted industry research, recommended and applied loss adjustment factors for NCRB.

Q. Did the NCRB ask Aon to run the AIR and RMS models?

A. Yes. Aon ran AIR Touchstone and RMS RiskLink for the NCRB under the NCRB's direction. AIR and RMS are the most commonly used catastrophe models in the insurance and reinsurance industries. Aon runs these two models

on all of Aon clients' exposure data pertinent to reinsurance transactions. The majority of Aon's clients use either one or both of these two models when evaluating their catastrophe risk.

Q. How are losses from two models blended?

A. Model results are blended by taking a straight average toward the end of the process. This means that we run the individual models and determine the appropriate loss costs and reinsurance cost allocation independently for each model. Then the outcome from the two models is averaged.

Q. Is it common that modeled losses will differ between the various model vendors?

A. Yes. Catastrophe models are complex. When modeling vendors develop a hurricane model, they start with similar underlying information, such as the National Hurricane Center's historical hurricane dataset, land use/land cover database, similar wind engineering principles and statistical theories. However, there are differences between modeling vendors in their approaches to interpreting and supplementing the data to build a robust model. Different assumptions and judgements are made by model developers. Vendors may also use claims data from different data sources to calibrate their model. These varying assumptions, judgements, and methodologies will result in different model results. Model results deviate more at location level than at the state

level. When models generate different results, it does not necessarily mean any model is wrong. The spread among different views of the same risk reflects the inherent uncertainties of catastrophe modeling.

Given the number of variables involved in the development of a catastrophe model and the degree of uncertainty associated with each variable, we would not expect that two independently developed models would result in the same output or conclusions on a given set of data.

Q. How do the models change over time?

A. Catastrophe models are built based on state of the art science and technology. As science continues to evolve and computing powers continue to advance, modeling technology is updated and improved. In addition, research into historical and recent events, updates to building practices and building codes, and data from engineering experiments will also provide insights to enable model developers to enhance their models. Each modeling vendor takes a different approach on how frequently it updates its models and which perils and regions will be updated. As noted above, because different assumptions and judgements are made when information is applied, the impact of an update could vary greatly between models. Changes due to model updates are to be expected.

Q. Is using multiple models to determine catastrophe risk actuarially sound?

A. Yes. Using multiple models allows users to incorporate different views of risk into their exposure management. Using multiple models can effectively mitigate modeling volatility and smooth out significant model changes. Using multiple models is a practice endorsed by major rating agencies such as AM Best and S&P.

Q. How does the NCRB exposure data impact model output?

A. The following data factors would impact model output:

- Changes in coverage and/or policy conditions such as deductible and limits, and the underlying policies-in-force
- Changes in an insurer's portfolio composition, such as geographic concentration
- Changes in building characteristics, such as loss mitigation features and age of roof
- Changes in data quality, such as replacing unknown building characteristics with known building characteristics

Q. Please describe the client data that was employed as input for the model runs?

A. The underlying exposure data was provided to Aon by the NCRB. To the best of my knowledge, the data was compiled on behalf of the NCRB by Insurance Services Office (ISO). NCRB's exposure data sent to Aon consisted of the trended aggregate exposure information for all residential Dwelling risks in North Carolina, including those written voluntarily by insurance companies and those written by the residual market (NCIUA and NCJUA). NCRB instructed Aon to run the models using the aggregate data at zip code and territory level for the entire North Carolina portfolio in a single model run. Model results were aggregated at the territory level.

ISO provided trended exposure data to Aon. In the 2018 filing, trending factors were applied to modeled losses after model runs. This new method is a more precise way to reflect policy terms in modeled results.

Q. Please describe what Aon Reinsurance Solutions then did with the data provided by the NCRB.

A. We reviewed the data received from the NCRB for completeness and reasonableness before we input it into the AIR and RMS models. Since the two models have different formats for inputting data, we worked with the NCRB to assure that the exposure data was properly and consistently mapped in the required format for each model. NCRB provided earned insurance years (EIY), which is the sum of primary coverage amount expressed in thousands, and earned house years (EHY), which is the number of risks. Limit by coverage is

calculated from EIY and EHY as instructed by the NCRB. A comparison of this year's data with last year's data was conducted. Any anomalies were investigated.

The next step was to input the data and run the models. We ran the AIR Standard model using the 100K event catalogue and the RMS Historical model (both are long term views of the hurricane risk) to determine the modeled hurricane loss cost. We also ran the AIR Warm Sea Surface Temperature (WSST) model and the RMS Medium Term Rate model (both are near term views of hurricane risk) to analyze the cost of reinsurance. It is a standard practice throughout the reinsurance industry to rely upon the models we used to determine modeled hurricane loss cost and reinsurance placements, and this has been true since the 1990s.

After the models were run, we reviewed each model's output separately to ensure data integrity. We then blended the results of the two models by taking a straight average of the results. Additional reviews were conducted of the blended results to ensure that the blending procedures were correctly performed and that the blended results were reasonable. The blended modeled hurricane loss results were provided to the NCRB for use in its Dwelling rate review. At the NCRB's request, we also provided the results to Milliman for its use in its rate filing work as part of the NCRB's Dwelling rate review. Exhibit RB-8 sets forth the blended modeled hurricane losses resulting from the work I have described.

Based on my knowledge and experience, and the input data provided by the NCRB, these modeled hurricane losses are reasonable and appropriate projections of expected hurricane losses for use by the NCRB in its Dwelling rate review and rate filing.

Also, we employed the modeled hurricane losses as part of our work in determining and allocating the cost of reinsurance. My colleague, Steve Fiete, led our analysis of the net cost of reinsurance, and his testimony is also included in this filing.

Q. Did Aon make adjustments to modeled results?

Yes. A 6% loss adjustment expense (LAE) factor was applied to modeled losses. This factor was recommended by Aon based on a broad industry study at the state level. The results of that study are shown in Exhibit RB-14. The application of the LAE factor was reviewed and approved by the NCRB, and the 6% catastrophe LAE factor was selected by the NCRB.

Another adjustment was made after the models were run. NCRB learned that the data from one of the statistical agents, NISS, consisted primarily of data from dwelling insurance programs that do not use the NCRB forms or rates, and therefore NCRB removed the NISS data entirely from the rate review. Since re-running the models would be a time-consuming and expensive process, NCRB decided to adjust the model results by applying appropriate factors to reflect the removal of the NISS data. Aon applied the factors provided by ISO for that purpose to the modeled loss results at the territory level.

Q. Does that conclude your testimony?

A. Yes.

North Carolina Rate Bureau
Gross Modeled Hurricane Expected Losses including Cat LAE

Total	82,224,963

Territory	Total
110	19,078,346
120	19,402,386
130	2,145,287
140	17,296,104
150	3,935,052
160	4,536,748
170	160,847
180	2,287,513
190	1,178,918
200	791,731
210	491,617
220	2,173,829
230	1,245,622
240	1,156,591
250	839,212
260	286,002
270	1,390,621
280	209,953
290	358,000
300	243,496
310	881,574
320	483,500
330	22,963
340	978,523
350	268,834
360	304,627
370	13,493
380	33,428
390	30,146

Modeled hurricane expected losses for North Carolina Rate Bureau, net of limits and deductibles. Results include demand surge and exclude storm surge. Losses represent 50/50 blend of AIRv7.3 100k Standard event set and RMSv18.1 Historical event set. Results also include provisions for LAE.

ACTUARIAL STANDARDS BOARD

Actuarial Standard of Practice No. 38

Using Models Outside the Actuary's Area of Expertise (Property and Casualty)

Developed by the
Task Force on Complex Models of the
Casualty Committee of the
Actuarial Standards Board

Adopted by the
Actuarial Standards Board
June 2000
Updated for Deviation Language Effective May 1, 2011

(Doc. No. 155)

ASOP No. 38—June 2000

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TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Use of Models Outside the Actuary's Area of Expertise in Property and Casualty Insurance

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 38.

This booklet contains the final version of ASOP No. 38, *Using Models Outside the Actuary's Area of Expertise (Property and Casualty).*

Background

The Casualty Practice Council of the American Academy of Actuaries requested that the ASB consider drafting an actuarial standard of practice concerning the use of complex models. In submitting to the ASB its proposal for a new ASOP, the council expressed concern over the use of catastrophe models when estimating catastrophe costs. Catastrophe models are developed by groups of scientists, engineers, and actuaries working together to simulate catastrophic events. While most actuaries conceptually agree that catastrophe models may provide more realistic measures of catastrophic risk than those provided by analyzing the latest twenty to fifty years of catastrophe losses, most actuaries are not experts in many of the underpinnings of these models.

Of course, catastrophe models are not the only models with which actuaries work. Actuaries also may utilize interest rate models, investment return models, credit scoring models, asbestos and pollution models, and dynamic financial analysis models, to name a few. The standard would not apply to models that incorporate specialized knowledge within the actuary's own area of expertise, since working with these components is part of the normal actuarial effort and is covered by other ASOPs.

In order to feel comfortable with relying on models that incorporate specialized knowledge outside the actuary's area of expertise, actuaries seek guidance in defining their *duty of care* in understanding and relying upon these models. This was another reason for the development of the standard, and why the ASB created the Task Force on Complex Models, under its Casualty Committee, to initiate the project.

The task force intended that the standard should define the guidelines that an actuary should follow when working with models outside of the actuary's own area of expertise. In providing such guidance, the standard makes it clear that an actuary may rely upon a model evaluation by another actuary who has performed his or her evaluation in accordance with this standard, and

that the standard is not intended to discourage the use of new methodologies in advancement of the profession.

First Exposure Draft

The first draft of a proposed standard, titled *The Use of Models with Nonactuarial Components*, was exposed for review in a document dated May 1998. As originally proposed in this first exposure draft, the standard would have applied to models in all areas of actuarial practice. In response to the fifty-two comment letters and forty-two comment postcards received, the scope of the standard was narrowed to apply only to property and casualty practice. In addition, the standard was refocused to apply to models that incorporate specialized knowledge outside the actuary's own area of expertise. Each actuary must determine what this boundary means to him or her. The title of the standard was changed accordingly. The significant issues and questions contained in the comment letters on the first exposure draft as well as the task force's responses to them are summarized in appendix 2 of the second exposure draft titled *Using Models Outside the Actuary's Area of Expertise (Property and Casualty)* dated September 1999.

Second Exposure Draft

The second draft of the standard was exposed for review in a document dated September 1999, with a comment deadline of March 1, 2000. Ten comment letters were received. The task force considered the issues and questions raised in these letters and made some editorial changes to the text, but no substantive changes were necessary. For a summary of the issues contained in these ten comment letters and the task force's responses, please see appendix 2.

The Task Force on Complex Models and the Casualty Committee thank everyone who took the time to contribute comments and suggestions on both exposure drafts.

The Casualty Committee would like to thank Godfrey Perrott and Kurt Reichle for their assistance in the initial drafting of this standard.

The ASB voted in June 2000 to adopt this standard.

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Task Force on Complex Models of the Casualty Committee

Karen F. Terry, Chairperson

Kay A. Cleary
Alice H. Gannon
Paul E. Kinson
Ronald T. Kozlowski
David A. Lalonde
Jeffrey F. McCarty
Daniel M. Scheibenreif
A. Eric Thorlacius
Joan M. Weiss

Casualty Committee of the ASB

Michael A. LaMonica, Chairperson

Christopher S. Carlson
Anne Kelly
Ronald T. Kozlowski
Robert J. Lindquist
Robert S. Miccolis
Karen F. Terry
William J. VonSeggern
Alfred O. Weller
Patrick B. Woods

Actuarial Standards Board

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ACTUARIAL STANDARD OF PRACTICE NO. 38

USING MODELS OUTSIDE THE ACTUARY'S AREA OF EXPERTISE (PROPERTY AND CASUALTY)

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose—The purpose of this standard is to provide guidance to the actuary in using models that incorporate specialized knowledge outside of the actuary's own area of expertise when developing an actuarial work product. This guidance addresses the actuary's obligation to review the model and make appropriate disclosures.

1.2 Scope—This standard applies to actuaries who use models that incorporate specialized knowledge outside of the actuary's own area of expertise when performing professional services in connection with property and casualty insurance coverages (including risk financing systems, such as self-insurance and securitization products, that provide similar coverages). This standard applies to the use of all models whether or not they are proprietary in nature.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard will be effective for work performed on or after December 15, 2000.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

2.1 Expert—One who is qualified by knowledge, skill, experience, training, or education to render an opinion concerning the matter at hand.

2.2 Model—An information structure, such as a set of mathematical equations, logic, or algorithms, that is used to represent the behavior of specified phenomena.

Section 3. Analysis of Issues and Recommended Practices

3.1 Introduction—In performing actuarial work, an actuary may find it appropriate to use models that incorporate specialized knowledge outside of the actuary's own area of expertise. When using such a model, the actuary should do all of the following:

a. determine appropriate reliance on experts;

b. have a basic understanding of the model;

c. evaluate whether the model is appropriate for the intended application;

d. determine that appropriate validation has occurred; and

e. determine the appropriate use of the model.

The actuary's level of effort in understanding and evaluating a model should be consistent with the intended use of the model and its materiality to the results of the actuarial analysis.

3.2 Appropriate Reliance on Experts—An actuary may rely on experts concerning those aspects of a model that are outside of the actuary's own area of expertise. The experts relied upon may either be the experts who provided the model or other experts. In determining the appropriate level of reliance, the actuary should consider the following:

a. whether the individual or individuals upon whom the actuary is relying are experts in the applicable field;

b. the extent to which the model has been reviewed or opined on by experts in the applicable field, including any known significant differences of opinion among experts concerning aspects of the model that could be material to the actuary's use of the model; and

c. whether there are standards that apply to the model or to the testing or validation of the model, and whether the model has been certified as having met such standards.

3.3 Understanding of the Model—The actuary should be reasonably familiar with the basic components of the model and understand both the user input and the model output, as discussed below.

3.3.1 Model Components—The actuary should be reasonably familiar with the basic components of the model and have a basic understanding of how such components interrelate within the model. In addition, the actuary should identify which fields of expertise were used in developing or updating the model, and should make a reasonable effort to determine if the model is based on generally accepted practices within the applicable fields of expertise. The actuary should also be reasonably familiar with how the model was tested or validated and the level of independent expert review and testing.

3.3.2 User Input—Certain user input may be required to produce model output for the specific application. The actuary should understand the user input that is required to produce the model output. This understanding includes the level of detail required in the user input to produce results that are consistent with the intended use of the model.

3.3.3 Model Output—The actuary should determine that the model output is consistent with the actuary's intended use of the model.

3.4 Appropriateness of the Model for the Intended Application—The actuary should evaluate whether the model is appropriate for the particular actuarial analysis, and consider limitations of the model, modifications to the model, and the assumptions needed in order to apply the model output.

Some additional considerations include the following:

a. Applicability of Historical Data—To the extent historical data are used in the development of the model or the establishment of model parameters, the actuary should consider the adequacy of the historical data in representing the range of reasonably expected outcomes consistent with current knowledge about the phenomena being analyzed.

b. Developments in Relevant Fields—The actuary should make a reasonable effort to be aware of significant developments in relevant fields of expertise. The

actuary should evaluate whether such developments are likely to materially affect the current actuarial analysis.

3.5 Appropriate Validation—The actuary should evaluate the user input and the reasonableness of the model output, as discussed below.

3.5.1 User Input—With respect to the quality and availability of the user input data to be used in the model, the actuary should refer to ASOP No. 23, *Data Quality*.

3.5.2 Model Output—In view of the intended use of the model, the actuary should examine the model output for reasonableness, considering factors such as the following:

a. the results derived from alternate models or methods, where available and appropriate;

b. how historical observations, if applicable, compare to results produced by the model;

c. the consistency and reasonableness of relationships among various output results; and

d. the sensitivity of the model output to variations in the user input and model assumptions.

3.6 Appropriate Use of the Model—Having completed the analysis described in sections 3.2–3.5 above, the actuary should use his or her professional judgment to determine whether it is appropriate to use the model results, subject to any appropriate adjustments. The actuary should disclose any such adjustments in accordance with section 4.3.

3.7 Reliance on Model Evaluation by Another Actuary—The actuary may rely on another actuary who has, for a particular model, conducted some or all of the evaluations and processes described in this standard. However, the relying actuary should be satisfied that the other actuary's evaluation was performed in accordance with this standard and is appropriate for the intended application. The actuary should document the extent of such reliance in accordance with section 4.1.

Section 4. Communications and Disclosures

4.1 Documentation—This standard requires documentation whether or not a legal or regulatory requirement exists. The actuary should maintain appropriate documentation on the evaluation of the model and the use of the model output in the analysis. Documentation should demonstrate how the actuary has met the requirements of sections 3.2–3.7 above.

4.2 Proprietary Information—If the model has proprietary aspects or contains proprietary information, the actuary should document the steps taken to comply with this standard in light of the proprietary aspects or information.

4.3 Disclosures—In communicating the results of actuarial work using a model that incorporates specialized knowledge outside of the actuary's own area of expertise, the actuary should disclose the model(s) used and any adjustments made to the model results as described in section 3.6.

In addition, the actuary should include the following, as applicable, in an actuarial communication:

a. the disclosure in ASOP No. 41, *Actuarial Communications*, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);

b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and

c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

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Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

Actuaries have always used models. Most of the models used by actuaries are developed using expertise that is common to actuaries, and their use by actuaries is addressed by existing standards of practice and statements of principles.

However, actuaries have also used models that contain components that are outside the actuary's own area of expertise. For example, certain catastrophe models, interest rate models, dynamic financial analysis models, credit scoring models, and pollution models contain components that are outside the expertise of many of the actuaries who use them. Although in retrospect the use of models may have posed the need for a specific standard of practice, it was not until recently, as actuaries grappled with the financial issues surrounding various natural catastrophes, that the need for such a standard was recognized and acted on by the Actuarial Standards Board.

Specifically, Hurricane Andrew in 1992 and the Northridge Earthquake in 1994 led actuaries involved in evaluating hurricane and earthquake exposures to recognize the severe inadequacy of the traditional, empirical actuarial methods used for ratemaking for these exposures. In recognition of the need to replace these methods, many actuaries began using stochastic computer simulation models for their actuarial analysis of hurricane and earthquake exposure. Computer simulation models had been commonly used for some time by actuaries and others for the purpose of evaluating probable maximum loss but had not been widely used for ratemaking.

Computer simulation models are now widely used by actuaries for calculating expected losses due to hurricane and earthquake perils. The accuracy of these models is heavily dependent on the accuracy of meteorological, seismological, or engineering assumptions, areas clearly outside the expertise of most actuaries.

Because models sometimes contain components that incorporate specialized knowledge outside the actuary's own area of expertise, this raises the question as to what is required of an actuary before he or she makes use of model output in his or her actuarial analysis. This standard addresses such requirements. Although the development of this standard originated with the problem of providing accurate actuarial analysis of hurricane and earthquake exposure, the standard applies to *any model*

that incorporates specialized knowledge outside the actuary's own area of expertise used in connection with property and casualty insurance coverages.

Current Practices

The use of output from models is an evolving area of actuarial theory and practice. To date, current practices have been governed by the former *Guides and Interpretative Opinions as to Professional Conduct*, and their successor documents, the Code of Professional Conduct and the *Qualification Standards for Prescribed Statements of Actuarial Opinion*. Practices have varied according to individual interpretations of the *Guides* and the Code.

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Appendix 2

Comments on the Second Exposure Draft and Task Force Responses

The second exposure draft of this actuarial standard of practice (ASOP) was exposed for review in September 1999, with a comment deadline of March 1, 2000. Ten letters of comment were received on the second exposure draft. Summarized below are the significant issues and questions contained in the comment letters, printed in roman type. The task force's responses appear in **boldface**.

General Observations

Two basic concerns were raised as general observations. One commentator believed the phrase "outside an actuary's area of expertise" was not clear enough to define when the standard applies and when it doesn't. An actuary has some training in econometric techniques but may not be familiar with state of the art methods and protocols. Are econometric models outside the actuary's area of expertise or not? Does the standard apply?

The task force believes this example clearly shows the need for this standard. Actuaries performing professional services must determine if they are qualified to practice in that area. As such, they are making a determination of their area of expertise and if using models should then determine if this standard applies. Since the situation will differ for every individual actuary, the task force believes the ASOP can not be made more specific and no changes were made.

The other commentator making a general observation questioned if the ASOP applies when "commercial models" such as @Risk, BestFit, and Evolver are used. The commentator asked "is it not enough to know that these are commercially available products...and have general acceptance as tools...without contacting the vendor to ask questions about the fields of expertise used to develop these models?"

This standard applies when using any model outside the actuary's area of expertise. The extent of the effort applied will be dependent on the individual circumstances and application of each model. The task force does not believe an unreasonable effort is required on the part of the actuary to apply this standard to the use of "commercial models." In fact, the task force believes that in most cases, the actuary is probably already complying with the standard with perhaps the exception of the documentation requirement.

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Section 1. Purpose, Scope, Cross References, and Effective Date

Section 1.2, Scope—Some commentators questioned the application of the standard to health companies and some forms of health coverages. They implied the standard should define property and casualty. **The ASOP does not apply to companies but rather to actuaries "performing professional services in connection with property and casualty insurance coverages." The task force does not believe a definition of property and casualty is possible since it is not static and will tend to change over time. Actuaries will have to determine if the work they are doing is "in connection with property and casualty insurance coverages."**

One commentator questioned the intent of the phrase "if a conflict exists between this standard and applicable law." If a regulator requires something that is not either a regulation or a law, does this fall under section 4.5, Deviation from Standard [clause] or is it exempt because of the conflict clause? **The task force believes this depends on the individual circumstances of the situation and made no changes to the text.**

Section 3. Analysis of Issues and Recommended Practices

Section 3.1, Introduction—One commentator believed the use of the word "basic" in section 3.1(b) sets too high of a standard and suggested replacing it with "general." **The task force discussed this issue and determined that the requirement to have a basic understanding of the model is appropriate. No change was made.**

Section 3.2, Appropriate Reliance on Experts—Some commentators were concerned with this section. One believed it was confusing and did not provide the actuary with sufficient guidance, others believed it was unreasonable to expect the actuary to know "the extent to which significant differences of opinion exist among experts...." **The task force reviewed the suggested changes from these commentators and made two changes to this section. A sentence was added to clarify that "experts relied upon may either be the experts who provided the model or other experts." Secondly, the reference to "differences of opinion among experts" was deleted as a separate item and included with section 3.2 (b), "the extent to which the model has been reviewed or opined on by experts in the applicable field."**

Section 3.3, Understanding of the Model—Some commentators believed the requirement in section 3.3.1, Model Components, stating "The actuary should be aware of the extent to which the model is based on contested or new theory" is unnecessary. They believed is was duplicative since the actuary is required in section 3.2(b) to consider "whether the model has been reviewed or opined on by expert...." and consider "the extent to which significant differences of opinion

exist." **The task force agrees that the language in section 3.2 provides sufficient guidance and deleted the sentence**

from section 3.3.1 that read, "The actuary should be aware of the extent to which the model is based on contested or new theory."

Section 3.4, Appropriateness of the Model for the Intended Application—In section 3.4(b), a few commentators believed it was unreasonable to expect the actuary to "[make a reasonable effort to] be aware of significant developments in relevant fields of expertise." **The task force disagrees with this concern and made no changes to the text.**

Section 3.5, Appropriate Validation—Section 3.5.2, Model Output, provides a list of items to consider when checking the model output for reasonableness. One commentator believed the list was not necessary as it implies that the actuary must perform all checks on the list. **The task force believes the list of examples provides valuable guidance with regard to the intent of the statement. The task force modified the introductory language to clarify that the list of examples is illustrative. The actuary, however, is not relieved from the duty to check for reasonableness.**

In section 3.5.2(d), one commentator expressed concern that considering "the sensitivity of the model output to variations in the assumptions" was too broad of a requirement. **The task force revised the section to narrow the scope of the sensitivity consideration to "variations in the user input and model assumptions."**

Section 4. Communications and Disclosures

Section 4.1, Documentation—One commentator was confused by the intent of the documentation requirement. **The task force clarified that the "documentation should demonstrate how the actuary met the requirements of sections 3.2–3.7."**

Section 4.2, Proprietary Information—One commentator offered alternative language for this section to clarify the intent. **The task force shortened the wording without changing the intent or meaning of the section.**

Section 4.3, Disclosure—**To clarify the disclosure requirement, wording was added to this section specifying that the actuary should disclose the model(s) used and any adjustments made to the model results as described in section 3.6.**

Aon ASOP 38 attestation - AIR Model

Statement of Compliance with Actuarial Standard of Practice 38
Minchong Mao, FCAS, MAAA

Background

Actuarial Standard of Practice 38 provides guidance to the actuary in using models that incorporate specialized knowledge outside the actuary's own area of expertise when developing an actuarial work product. When using such a model, the standard requires that the actuary perform five specific tasks, as described below using the numbering system of the standard. This document certifies that Minchong Mao, FCAS, MAAA, has performed these tasks for the catastrophe loss model(s) relied upon in the actuarial work product to which it is attached. It is intended that actuaries utilizing the actuarial work product in their insurance ratemaking efforts can rely on my model evaluation in accordance with Section 3.7 of the standard of practice.

Model Versions Covered by this document

- AIR Hurricane model for the United States v17.0.0 utilized in Touchstone versions 6.1.0, 7.0 and 7.x, released in 2019
- AIR Severe Thunderstorm Model for the United States v7.0 implemented in Touchstone version 5, 6, 7 and 7.x, released in 2019
- AIR Winter Storm Model for the United States v1.5 implemented in Touchstone version 5, 6, 7 and 7.x, released in 2019
- AIR Wildfire Model for the United States v2 implemented in Touchstone version 6, 7 and 7.x, released in 2019
- AIR Earthquake and Fire Following Model for the United States v10.1 implemented in Touchstone version 6, 7 and 7.x, released in 2019. This version included Time Dependent Earthquake Hazard Adjustment.

3.2 Appropriate Reliance on Experts

An actuary may rely on experts concerning those aspects of a model that are outside of the actuary's own area of expertise. The experts relied upon may either be the experts who provided the model or other experts.

For those aspects of the model that are outside my area of expertise, I have relied on the list of experts provided by the modeler. Please see the modeler's ASOP 38 document and supporting documentation for additional information.

In determining the appropriate level of reliance, the actuary should consider the following:

a. whether the individual or individuals upon whom the actuary is relying are experts in the applicable field;

The individuals listed as employees of the modeler appear to be experts in their respective fields.

b. the extent to which the model has been reviewed or opined on by experts in the applicable field, including any known significant differences of opinion among experts concerning aspects of the model that could be material to the actuary's use of the model; and

The modeler has provided documentation of reviews by outside experts. Many of these reviewers are well-recognized experts in their fields. I have reviewed the findings of the outside experts and found no significant differences of opinion with respect to the validity of the model.

c. whether there are standards that apply to the model or to the testing or validation of the model, and whether the model has been certified as having met such standards.

Standards for catastrophe loss models have been promulgated by a few states. Most notably, the Florida Commission on Hurricane Loss Projection Methodology was created to review catastrophe loss models. The model(s) used in this work product, or derivatives thereof, have been certified by the Florida Commission on Hurricane Loss Projection Methodology.

3.3 Understanding of the Model

The actuary should be reasonably familiar with the basic components of the model and understand both the user input and the model output, as discussed below.

I have reviewed the modeler's ASOP 38 document and supporting documentation describing the model's components, input, and output, as well as other documentation, to comply with this requirement. In addition, I have specialized in actuarial applications of catastrophe model output since 2005.

3.3.1 Model Components—The actuary should be reasonably familiar with the basic components of the model and have a basic understanding of how such components interrelate within the model. In addition, the actuary should identify which fields of expertise were used in developing or updating the model, and should make a reasonable effort to determine if the model is based on generally accepted practices within the applicable fields of expertise. The actuary should also be reasonably familiar with how the model was tested or validated and the level of independent expert review and testing.

I am reasonably familiar with the basic components of the model and have a basic understanding of how such components interrelate with in the model. I have identified the fields of expertise used in developing and updating the model and have determined that the model is based on generally accepted practices within the applicable fields of expertise. I am reasonably familiar with how the model was validated and have reviewed the documentation of reviews by outside experts.

3.3.2 User Input—Certain user input may be required to produce model output for the specific application. The actuary should understand the user input that is required to produce the model output. This understanding includes the level of detail required in the user input to produce results that are consistent with the intended use of the model.

I understand the user input required to produce model output, including the level of detail required to produce results that are consistent with insurance ratemaking and risk management applications.

3.3.3 Model Output—The actuary should determine that the model output is consistent with the actuary's intended use of the model.

I have determined that the model output is consistent with the insurance ratemaking applications for which it was used. We most often use event loss detail in our work, so we are always careful that our results balance to the model's prepared exhibits.

3.4 Appropriateness of the Model for the Intended Application

The actuary should evaluate whether the model is appropriate for the particular actuarial analysis, and consider limitations of the model, modifications to the model, and the assumptions needed in order to apply the model output.

The catastrophe model(s) we have relied upon were developed for purposes related to the management of risk. I have evaluated the model(s) in light of available alternatives and determined that the catastrophe loss model is the most appropriate method of estimating expected catastrophe loss distributions for insurance ratemaking.

Some additional considerations include the following:

a. Applicability of Historical Data—To the extent historical data are used in the development of the model or the establishment of model parameters, the actuary should consider the adequacy of the historical data in representing the range of reasonably expected outcomes consistent with current knowledge about the phenomena being analyzed.

Historical data is relied upon extensively in the development and validation of catastrophe loss models. Smoothing procedures are applied in cases where reasonably foreseeable events are underrepresented in the historical data.

b. Developments in Relevant Fields—The actuary should make a reasonable effort to be aware of significant developments in relevant fields of expertise. The actuary should evaluate whether such developments are likely to materially affect the current actuarial analysis.

Catastrophe loss models are typically updated on an annual basis in order to incorporate the most current scientific research and information from recent catastrophe events.

I have made a reasonable effort to be aware of significant developments in the relevant fields of expertise. In particular, meteorological studies related to the current period of elevated hurricane activity are important in determining which of a model's frequency assumptions should be utilized in insurance ratemaking applications involving hurricane-exposed risk portfolios. Aon maintains a documentation library containing current research in the science of catastrophe perils.

3.5 Appropriate Validation

The actuary should evaluate the user input and the reasonableness of the model output, as discussed below.

3.5.1 User Input—With respect to the quality and availability of the user input data to be used in the model, the actuary should refer to ASOP No. 23, Data Quality.

The model input data for this analysis was supplied by the client. The data was reviewed for reasonableness in accordance with ASOP 23.

3.5.2 Model Output—In view of the intended use of the model, the actuary should examine the model output for reasonableness, considering factors such as the following:

a. the results derived from alternate models or methods, where available and appropriate;

In addition, Aon conducts extensive testing of each model that we license whenever a new model is released. Output from Model output is checked for reasonability against other models and for consistency with the modeler's representations as to changes incorporated in the current version. I have reviewed the results of these tests and found the model used in this analysis to provide reasonable output.

b. how historical observations, if applicable, compare to results produced by the model;

Catastrophes, by their nature, involve significant uncertainty in the amount of insured losses they produce. In light of this uncertainty, the model has been shown to produce reasonable estimates of losses incurred from historical events.

I have reviewed the modeler's ASOP 38 document and supporting documentation describing comparisons of model output to historical observations and found that the model produces reasonable estimates.

c. the consistency and reasonableness of relationships among various output results; and

I have reviewed the relationships among output results and found them to be consistent and reasonable.

d. the sensitivity of the model output to variations in the user input and model assumptions.

Aon conducts extensive testing of each model that we license with respect to the sensitivity of model output to variations in the user input and model assumptions. I have reviewed the results of these tests and obtained an understanding of the model's sensitivity.

3.6 Appropriate Use of the Model

Having completed the analysis described in sections 3.2–3.5 above, the actuary should use his or her professional judgment to determine whether it is appropriate to use the model results, subject to any appropriate adjustments. The actuary should disclose any such adjustments in accordance with section 4.3.

In my professional judgment, it is appropriate to use the model results, without adjustment, for the purposes of the actuarial work product to which this document is attached.

3.7 Reliance on Model Evaluation by Another Actuary

The actuary may rely on another actuary who has, for a particular model, conducted some or all of the evaluations and processes described in this standard. However, the relying actuary should be satisfied that the other actuary's evaluation was performed in accordance with this standard and is appropriate for the intended application. The actuary should document the extent of such reliance in accordance with section 4.1.

Actuaries utilizing the actuarial work product to which this document is attached can rely on my complete evaluation of the model(s) used as described above. In doing so, they should document the extent of such reliance in their work.

Minchong Mao FCAS, MAAA

Aug 13th 2020

Aon ASOP 38 attestation - RMS Model

Empower Results®

Statement of Compliance with Actuarial Standard of Practice 38
Minchong Mao, FCAS, MAAA

Background

Actuarial Standard of Practice 38 provides guidance to the actuary in using models that incorporate specialized knowledge outside the actuary's own area of expertise when developing an actuarial work product. When using such a model, the standard requires that the actuary perform five specific tasks, as described below using the numbering system of the standard. This document certifies that Minchong Mao, FCAS, MAAA, has performed these tasks for the catastrophe loss model(s) relied upon in the actuarial work product to which it is attached. It is intended that actuaries utilizing the actuarial work product in their insurance ratemaking efforts can rely on my model evaluation in accordance with Section 3.7 of the standard of practice.

Model Versions Covered by this document

- RMS North Atlantic Hurricane Model v18.1, released in 2019, implemented in RiskLink V18,1
- RMS North America Earthquake Model v17.0, released in 2017, implemented in RiskLink V17, 18, and18,1
- RMS Sever Convective Strom Model for the United States, released in 2014, implemented in RiskLink V17,18, and 18.1
- RMS Winter Storm Model for the United States, release in 2013, implemented in RiskLink V17,18, and 18.1

3.2 Appropriate Reliance on Experts

An actuary may rely on experts concerning those aspects of a model that are outside of the actuary's own area of expertise. The experts relied upon may either be the experts who provided the model or other experts.

For those aspects of the model that are outside my area of expertise, I have relied on the list of experts provided by the modeler. Please see the modeler's ASOP 38 document and supporting documentation for additional information.

In determining the appropriate level of reliance, the actuary should consider the following:

a. whether the individual or individuals upon whom the actuary is relying are experts in the applicable field;

The individuals listed as employees of the modeler appear to be experts in their respective fields.

b. the extent to which the model has been reviewed or opined on by experts in the applicable field, including any known significant differences of opinion among experts concerning aspects of the model that could be material to the actuary's use of the model; and

The modeler has provided documentation of reviews by outside experts. Many of these reviewers are well-recognized experts in their fields. I have reviewed the findings of the outside experts and found no significant differences of opinion with respect to the validity of the model.

c. whether there are standards that apply to the model or to the testing or validation of the model, and whether the model has been certified as having met such standards.

Standards for catastrophe loss models have been promulgated by a few states. Most notably, the Florida Commission on Hurricane Loss Projection Methodology was created to review catastrophe loss models. The model(s) used in this work product, or derivatives thereof, have been certified by the Florida Commission on Hurricane Loss Projection Methodology.

3.3 Understanding of the Model

The actuary should be reasonably familiar with the basic components of the model and understand both the user input and the model output, as discussed below.

I have reviewed the modeler's ASOP 38 document and supporting documentation describing the model's components, input, and output, as well as other documentation, to comply with this requirement. In addition, I have specialized in actuarial applications of catastrophe model output since 2005.

3.3.1 Model Components—The actuary should be reasonably familiar with the basic components of the model and have a basic understanding of how such components interrelate within the model. In addition, the actuary should identify which fields of expertise were used in developing or updating the model, and should make a reasonable effort to determine if the model is based on generally accepted practices within the applicable fields of expertise. The actuary should also be reasonably familiar with how the model was tested or validated and the level of independent expert review and testing.

I am reasonably familiar with the basic components of the model and have a basic understanding of how such components interrelate with in the model. I have identified the fields of expertise used in developing and updating the model and have determined that the model is based on generally accepted practices within the applicable fields of expertise. I am reasonably familiar with how the model was validated and have reviewed the documentation of reviews by outside experts.

3.3.2 User Input—Certain user input may be required to produce model output for the specific application. The actuary should understand the user input that is required to produce the model output. This understanding includes the level of detail required in the user input to produce results that are consistent with the intended use of the model.

I understand the user input required to produce model output, including the level of detail required to produce results that are consistent with insurance ratemaking and risk management applications.

3.3.3 Model Output—The actuary should determine that the model output is consistent with the actuary's intended use of the model.

I have determined that the model output is consistent with the insurance ratemaking applications for which it was used. We most often use event loss detail in our work, so we are always careful that our results balance to the model's prepared exhibits.

3.4 Appropriateness of the Model for the Intended Application

The actuary should evaluate whether the model is appropriate for the particular actuarial analysis, and consider limitations of the model, modifications to the model, and the assumptions needed in order to apply the model output.

The catastrophe model(s) we have relied upon were developed for purposes related to the management of risk. I have evaluated the model(s) in light of available alternatives and determined that the catastrophe loss model is the most appropriate method of estimating expected catastrophe loss distributions for insurance ratemaking.

Some additional considerations include the following:

a. Applicability of Historical Data—To the extent historical data are used in the development of the model or the establishment of model parameters, the actuary should consider the adequacy of the historical data in representing the range of reasonably expected outcomes consistent with current knowledge about the phenomena being analyzed.

Historical data is relied upon extensively in the development and validation of catastrophe loss models. Smoothing procedures are applied in cases where reasonably foreseeable events are underrepresented in the historical data.

b. Developments in Relevant Fields—The actuary should make a reasonable effort to be aware of significant developments in relevant fields of expertise. The actuary should evaluate whether such developments are likely to materially affect the current actuarial analysis.

Catastrophe loss models are typically updated on an annual basis in order to incorporate the most current scientific research and information from recent catastrophe events.

I have made a reasonable effort to be aware of significant developments in the relevant fields of expertise. In particular, meteorological studies related to the current period of elevated hurricane activity are important in determining which of a model's frequency assumptions should be utilized in insurance ratemaking applications involving hurricane-exposed risk portfolios. Aon maintains a documentation library containing current research in the science of catastrophe perils.

3.5 Appropriate Validation

The actuary should evaluate the user input and the reasonableness of the model output, as discussed below.

3.5.1 User Input—With respect to the quality and availability of the user input data to be used in the model, the actuary should refer to ASOP No. 23, Data Quality.

The model input data for this analysis was supplied by the client. The data was reviewed for reasonableness in accordance with ASOP 23.

3.5.2 Model Output—In view of the intended use of the model, the actuary should examine the model output for reasonableness, considering factors such as the following:

a. the results derived from alternate models or methods, where available and appropriate;

In addition, Aon conducts extensive testing of each model that we license whenever a new model is released. Output from Model output is checked for reasonability against other models and for consistency with the modeler's representations as to changes incorporated in the current version. I have reviewed the results of these tests and found the model used in this analysis to provide reasonable output.

b. how historical observations, if applicable, compare to results produced by the model;

Catastrophes, by their nature, involve significant uncertainty in the amount of insured losses they produce. In light of this uncertainty, the model has been shown to produce reasonable estimates of losses incurred from historical events.

I have reviewed the modeler's ASOP 38 document and supporting documentation describing comparisons of model output to historical observations and found that the model produces reasonable estimates.

c. the consistency and reasonableness of relationships among various output results; and

I have reviewed the relationships among output results and found them to be consistent and reasonable.

d. the sensitivity of the model output to variations in the user input and model assumptions.

Aon conducts extensive testing of each model that we license with respect to the sensitivity of model output to variations in the user input and model assumptions. I have reviewed the results of these tests and obtained an understanding of the model's sensitivity.

3.6 Appropriate Use of the Model

Having completed the analysis described in sections 3.2–3.5 above, the actuary should use his or her professional judgment to determine whether it is appropriate to use the model results, subject to any appropriate adjustments. The actuary should disclose any such adjustments in accordance with section 4.3.

In my professional judgment, it is appropriate to use the model results, without adjustment, for the purposes of the actuarial work product to which this document is attached.

3.7 Reliance on Model Evaluation by Another Actuary

The actuary may rely on another actuary who has, for a particular model, conducted some or all of the evaluations and processes described in this standard. However, the relying actuary should be satisfied that the other actuary's evaluation was performed in accordance with this standard and is appropriate for the intended application. The actuary should document the extent of such reliance in accordance with section 4.1.

Actuaries utilizing the actuarial work product to which this document is attached can rely on my complete evaluation of the model(s) used as described above. In doing so, they should document the extent of such reliance in their work.

Minchong Mao FCAS, MAAA

Aug 13th 2020

EXHIBIT RB-11

PRE-FILED DIRECT TESTIMONY OF STEPHEN C. FIETE
2020 DWELLING INSURANCE RATE FILING
by the
NORTH CAROLINA RATE BUREAU
December 2020

Q. Please state your full name and business address for the record.

A. My name is Stephen Charles Fiete. My business address is 200 East Randolph Street, 11th Floor, Chicago, Illinois 60601.

Q. What is your involvement in this matter?

A. I am currently an employee of Aon Corporation working in the Catastrophe Management area of Aon Reinsurance Services. Aon has been retained by the North Carolina Rate Bureau (NCRB) to provide expertise and analysis with respect to the expected catastrophe losses and net cost of reinsurance utilized in the NCRB's 2020 Dwelling Insurance rate filing. I manage an analytics group within the Catastrophe Management area which focuses on analysis of catastrophe cost as it relates to ratemaking and underwriting.

Q. You indicated that you are employed by Aon. Who is Aon and what are your primary duties for that employer?

A. Aon is a leading global professional services firm that provides advice and solutions to clients focused on risk, retirement, and health. I work in the Reinsurance Services area which represents insurance carriers in the reinsurance market. My position is Managing Director in the Catastrophe Modeling group. My primary responsibility is to assist insurance company clients of Aon in the areas of managing catastrophe risk. I work with carriers that purchase catastrophe reinsurance and perform analyses to provide insight into how segments of their portfolio contribute to their total catastrophe cost.

Q. Describe the role of the Catastrophe Management area within Aon Reinsurance Services.

A. The Catastrophe Management group provides consultative services to Aon's reinsurance clients. The main areas of services include: catastrophe modeling; catastrophe ratemaking assistance; catastrophe cost allocation; actuarial services; rating agency modeling and analysis; insurance and reinsurance accounting; and tax and finance related modeling and assistance.

Q. Describe the role of the analytics group that you manage.

A. This group performs analysis and provides tools to help Aon's reinsurance clients manage their total cost of catastrophe risk. The total cost of catastrophe risk consists of the following: expected average annual loss from modeled catastrophic perils, net cost of reinsurance, and the cost of capital required to support the volatility of retained loss. The group draws on Aon's experience placing catastrophe reinsurance to develop an understanding of the factors that drive reinsurance cost, which is used to develop a method to allocate portfolio level reinsurance cost to any subset of the portfolio. This method reflects the relationship between modeled loss distributions and market reinsurance prices. The analyses and tools are used in ratemaking, including rate filings, underwriting, and exposure management by carriers.

Q. What is catastrophe reinsurance, who buys it, and why do they buy it?

A. Catastrophe reinsurance is a contract purchased by a primary carrier and sold by a reinsurer, or a group of reinsurers, to transfer risk from loss due to large catastrophic events. The most common type of contract used for catastrophe risk is called "Portfolio Excess of Loss", a.k.a. "Portfolio XOL", or just "XOL". A single XOL contract has an "attachment" and a "limit". An XOL covers the amount of portfolio loss plus loss adjustment expense (LAE) caused by a single event in the amount which exceeds the XOL attachment with a maximum equal to the XOL limit. In some instances, there is co-participation, which means that only a percentage of the amount of loss in the XOL layer is covered. Portfolio XOL contracts (a.k.a. "treaties" since there are typically multiple reinsurers involved) cover the first event within a year of coverage. It is standard practice to write into the treaty a provision for the primary carrier to automatically purchase a "reinstatement" if they have a loss which triggers a reinsurance payment. The reinstatement premium allows for the full limit to be available after the first event uses up limit provided. There are cases where a limit is provided and if an event uses up that limit, then there is no coverage available for the remainder of the contract period. It is typical of primary carriers to buy multiple treaties that stack on top of each other. In other words, a treaty will have an attachment equal to the attachment plus limit of another treaty.

Primary carriers buy reinsurance to ensure that money is available to pay claims for very large and uncommon to rare events, and still have the financial strength to continue operations after such an event.

Q. Describe your professional and educational background.

A. I have been employed as an actuary since 1992 and have focused on ratemaking for my entire career. From 1992 to 1999 I worked for CNA Insurance and worked in both commercial lines and personal lines pricing. From 2000 to early 2006 I worked in a pricing area of Allstate Insurance. I have performed state rate level indications, workers

compensation program pricing, underwriting scorecard development and rating plan development.

I was hired by Aon in 2006 to lead, design, develop, and market underwriting tools based on Aon's catastrophe cost allocation methodologies.

I received a BA in Math from West Virginia University in 1988 and an MS in Math from the University of Illinois at Urbana Champaign in 1991. I am an Associate of the Casualty Actuarial Society. I have satisfied the continuing education requirements of and am in good standing with the CAS.

Q. Describe your experience with catastrophe models.

A. I have been using output from catastrophe models since joining Aon in 2006. My initial work was to develop an underwriting tool for carriers which would provide total catastrophe cost allocated to an individual location at the point of sale. I am still responsible for maintaining and enhancing the capabilities of that tool today. I have also designed tools for measuring incremental catastrophe volatility and reinsurance cost impact from changes to a portfolio that are larger than a single policy.

Q. Describe your experience with catastrophe reinsurance.

A. Since joining Aon in 2006 I have been working on projects which involve allocation of average annual loss, ceded average annual loss, allocation of reinsurance premium, and allocation of capital cost for Aon's reinsurance clients. Allocation has been done by geographic area and business division, and all the way to a location level. I have also developed tools for carriers to calculate the effect on probable maximum loss (PML), and other volatility metrics, from potential changes to their portfolios.

I have also collaborated with colleagues at Aon to adjust Aon's reinsurance and capital cost allocation methodology to reflect observed changes in market pricing.

Q. What was your role in this filing with respect to expected catastrophe losses?

A. I determined a suitable provision for the net cost of reinsurance for the state overall and an allocation of that cost by territory. The provision used exposure data from all the risks in the state so that a cost provision would be appropriate to use in a uniform rate schedule applicable to all insurers in the state.

Q. Are catastrophe simulation models commonly used by insurers for ratemaking in catastrophe-exposed lines and jurisdictions?

A. Yes, catastrophe models have become the standard method of estimating catastrophe risk in rate filings. I have provided data and analysis for Aon clients to use in their rate filings in multiple states.

Q. What is demand surge?

A. Demand surge represents the increase in the cost of labor, materials and services (lodging, for example) needed to repair damaged property following a significant natural catastrophe event or series of events. This increase has been observed following such very large events and it is a natural result of the increased demand for labor, materials and services in those situations. As a result, the models incorporate it into their loss estimates.

Q. Which applications of catastrophe model output typically reflect demand surge?

A. All applications of catastrophe model output should reflect demand surge. There is no reason to underestimate the impact of large events by ignoring the increase in demand for labor and materials as a result of those events. In our experience, all companies run the models with demand surge. In fact, the only times we have ever run a model without demand surge at Aon are to measure the impact of demand surge for testing purposes and where specifically requested.

Q. Does any state prohibit the inclusion of demand surge in modeled losses for rate filings?

A. I am not aware of any prohibitions against the use of demand surge in rate filings in any jurisdiction. The South Carolina Department of Insurance Bulletin 2014-03 states "Demand surge may be included in the modeled results as long as the company provides the impact it has on the modeled losses." In fact, the Florida Hurricane Commission standards actually require that accepted models incorporate demand surge based on relevant data and actuarially sound methods and assumptions.

Q. North Carolina has laws prohibiting "price gouging" following a hurricane. Does that eliminate demand surge?

A. No. Florida has a similar law (Title XXXIII 501.160). Demand surge can and does occur due to supply and demand economics in situations that would not be considered price gouging and/or that would not be prevented by statutes prohibiting price gouging.

Q. Does it make sense for North Carolina hurricane losses to include demand surge for very large events impacting other states even if those events were less significant in North Carolina?

A. The intent of the model is to reflect economic conditions that will influence construction prices and other aspects of insured loss (such as, for example, the increased period of time a carrier has to pay for hotel rooms for insureds while their damaged homes are repaired) in the time period shortly after a hurricane occurs. Since labor and

materials resources are exchanged by people across state lines, we believe the demand surge effect on prices in other states will have an effect in North Carolina.

Q. Are you aware of how the reinsurance program was designed and priced for purposes of this rate filing? Do you think it is reasonable?

A. Yes, I designed it with my team. The basis of the reinsurance program structure and pricing is determined by an analysis of reinsurance programs placed by Aon for its reinsurance clients. Three components of the analysis are described here.

Program attachment and total limit describes the total amount of reinsurance coverage. Since companies vary substantially in size, so does their limit purchase and attachment for their bottom layers. To normalize for company size, we looked at the frequency with which a single event would trigger a recovery and the frequency with which a single event would exhaust the limit of the entire program for each company. This was calculated separately for the AIR and the RMS models. We then calculated the median attachment and exhaustion (exhaustion = bottom layer attachment + total program limit) frequencies by model and by region (Southeast and Nationwide). The frequencies for attachment and exhaustion were averaged across the regions, which resulted in attachment and exhaustion frequency by model. Using portfolio loss and LAE distributions by model for the portfolio in the filing, we calculated the dollar amount of attachment and exhaustion (and therefore limit) by model. The loss distributions come from the AIR 7.3 and RMS 18.1 catastrophe models, and the LAE is based on an analysis of data which is summarized in Exhibit RB-14. The attachment of the reinsurance program in the filing is the average of the AIR indicated attachment and RMS indicated attachment. The exhaustion of the reinsurance program in the filing is the average of the AIR indicated exhaustion and the RMS indicated exhaustion.

Reinsurance Market Pricing Model For AIR and RMS, a log-linear regression model was built to calculate fitted reinsurance price based on modeled expected ceded loss and LAE. Using these regression models, an indicated price for any layer can be calculated based on each cat model (AIR and RMS). The selected prices by layer used in this rate filing are the averages of the AIR indicated prices and the RMS indicated prices.

Note: Because insight into reinsurance market pricing is an important proprietary asset for Aon, the log-linear models are considered a trade secret and therefore not disclosed in this public filing.

Program Structure After the program attachment and limit are determined and the market pricing model is determined, we break up the program limit into layers. We run an optimization analysis which finds the five-layer cat program that has the lowest possible total program reinsurance premium. In the prior filing we looked at the ratio of standard deviation of ceded loss and LAE to limit by layer and selected breakpoints. The method this year removes subjectivity and is designed to calculate an indicated reinsurance premium that is as low as possible subject to the market pricing model and program attachment and limit specifications.

The reinsurance structure determined by the method described above is shown in Exhibit RB-12. The pricing with loss analysis is shown in Exhibit RB-13.

Q. How was the reinsurance premium allocated?

A. Reinsurance premium by layer is allocated to a territory based on that territory's share of expected ceded loss and loss adjustment expense by layer. Exhibit RB-13 shows the total expected ceded loss and LAE by layer and Exhibit RB-15 shows the proportion of hurricane peril reinsurance premium, ceded average annual loss, and reinsurance margin (a.k.a. "net cost of reinsurance") allocated to each territory segment for each layer. Other perils were used in the calculation, but because they contributed such a small amount of expected ceded loss and LAE they were not shown on the exhibits. Exhibit RB-16 shows the dollar amount of reinsurance margin allocated by territory.

Q. How was the net cost of reinsurance calculated?

A. Net cost of reinsurance is Deposit Premium + Expected Reinstatement Premium - Expected Ceded Loss & LAE. The reinsurance program, the loss distribution from the portfolio as determined by a cat model and the LAE assumptions are input into ReMetrica, Aon's DFA (Dynamic Financial Analysis) software program, to calculate the average ceded loss and LAE and average reinstatement premium over a number of simulated years. The loss distribution which is produced by the AIR models is already in the form of simulated loss experience for 100,000 years. ReMetrica calculates for each year the total reinsurance recoveries and reinstatement premium paid. ReMetrica then calculates the average annual ceded loss & LAE, and the average reinstatement premium. The loss distribution from RMS models is a list of possible catastrophic events. Instead of providing specific year, day and amount of loss from each event, each event has a parametric distribution for frequency and severity. ReMetrica creates a simulation of 1,000,500 years of loss experience to make a table containing year, day, and specific amount of loss. From that point the calculation works the same as the AIR model. One million five hundred simulated years were used instead of a round one million because the hardware configuration works most efficiently if the number of years is a multiple of 23.

For the NCRB filing, our analysis shows that expected premium is $136,922,380, expected ceded loss & LAE is $40,845,931, and the net cost of reinsurance is $96,076,450, as shown on Exhibit RB-16 and the summary on Exhibit RB-13. Allocation by territory is done using the method described above.

Q. Given your experience in catastrophe reinsurance, do you find this approach to be reasonable?

A. Yes. Our approach is based on detailed information on current reinsurance market rates and underlying model output.

Q. Do you know whether the Rate Bureau has used in its 2020 Dwelling filing the Aon net cost of reinsurance results you provided?

A. Yes, I am advised that the Rate Bureau has used in the filing both our statewide net cost of reinsurance results and those results allocated to the territory level.

Q. Are you aware of the provisions in the North Carolina statutes, in N.C.G.S. 58-36-10(7), that state:

Property insurance rates established under this Article may include a provision to reflect the cost of reinsurance to protect against catastrophic exposure within this State. Amounts to be paid to reinsurers, ceding commissions paid or to be paid to insurers by reinsurers, expected reinsurance recoveries, North Carolina exposure to catastrophic events relative to other states' exposure, and any other relevant information may be considered when determining the provision to reflect the cost of reinsurance.

A. Yes, I am.

Q. Do you have an opinion whether the analysis you and Aon have performed on behalf of the Rate Bureau on the net cost of reinsurance for this filing has taken into consideration the provisions of that statute?

A. Yes. Based on my experience with hurricane models and using modeled hurricane losses and my experience with catastrophe reinsurance and determining catastrophe reinsurance costs for rate filings, it is my opinion that the analysis we have performed on the net cost of reinsurance for this filing properly considers all of the items set out in that statute. Further, it is my opinion based on my experience in the actual marketplace that a reasonable and appropriate provision for the net cost of reinsurance must be incorporated into Dwelling insurance rates in North Carolina in order for those rates to properly reflect and protect against the catastrophe exposure in this state.

Q. Do you have an opinion regarding the appropriateness of the net cost of reinsurance provision incorporated into this filing?

A. Yes. Based on my experience with hurricane models and using modeled hurricane losses and my experience with catastrophe reinsurance and determining catastrophe reinsurance costs for rate filings, it is my opinion that the provision for the net cost of reinsurance in the filing, at the statewide and territory levels, is reasonable and appropriate.

Q. Does that conclude your testimony?

A. Yes.

EXHIBIT RB-12

North Carolina Rate Bureau
Dwelling Insurance Rate Filing
Support for Selected Reinsurance Structure

Over the Top	CY18 Dwelling	
	Attachment Return Period	Exhaustion Return Period
$612M xs $1,616M	132	242
$500M xs $1,116M	73	132
$400M xs $716M	38	73
$300M xs $416M	19	38
$200M xs $216M	10	19
Retention		

The table above shows the All Peril 50/50 AIRv7.3/RMSv18.1 blend attachment and exhaustion points which combine modeled loss with Catastrophe LAE for the North Carolina Rate Bureau portfolio, along with the selected reinsurance program.

EXHIBIT RB-13

North Carolina Rate Bureau
Dwelling Insurance Rate Filing
Reinsurance Program Summary

Reinsurance Layer	Rate-On-Line	Deposit Premium	Reinstatement Premium	Expected Total Premium	Expected Ceded Loss	Net Cost of Reinsurance
612M xs 1,616M	3.00%	18,360	102	18,462	3,439	15,023
500M xs 1,116M	4.58%	22,900	237	23,137	5,226	17,911
400M xs 716M	6.93%	27,720	525	28,245	7,714	20,531
300M xs 416M	10.58%	31,740	1,120	32,860	10,893	21,967
200M xs 216M	16.07%	32,140	2,078	34,218	13,574	20,644
Total		**132,860**	**4,062**	**136,922**	**40,846**	**96,076**

Dollar amounts are in thousands

The table above shows indicated rates-on-line for the filing's reinsurance structure along with analysis of modeled catastrophe losses. Rate-on-Line values have been selected using the current Loss-On-Line approach, which is a benchmarking analysis done using reinsurance treaties placed by Aon.

Deposit Premium is Rate-On-Line * Layer Limit

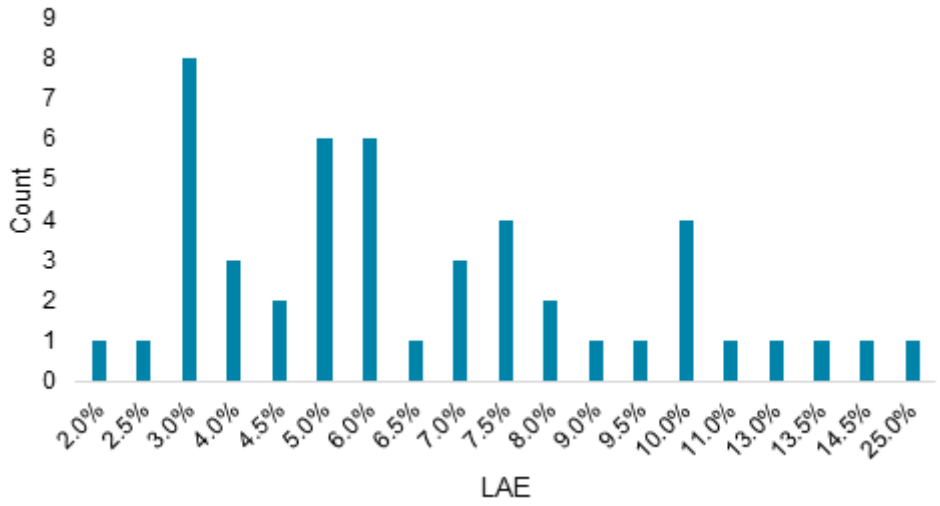
Expected Ceded Loss and Expected Reinstatement premium are the average annual amounts of each based on a simulation of catastrophe losses subject to the reinsurance program.

Expected Total Premium = Deposit Premium + Expected Reinstatement Premium

Net Cost of Reinsurance = Expected Total Premium - Expected Ceded Loss

EXHIBIT RB-14

North Carolina Rate Bureau
Dwelling Insurance Rate Filing
Support for Selected Catastrophe LAE Factor



This chart shows Catastrophe LAE factors applied to modeled catastrophe event losses in AM Best SRQ Submissions by Aon clients in 2019.

- Factors were rounded to the nearest 0.5
- A weighted average was used where factors varied by peril
- Multiple factors were counted where factors varied by company within a group
- Reflects all clients that included a provision for LAE

The mean factor is 6.8, the median is 6.0, and the mode is 3.0.

North Carolina Rate Bureau
Reinsurance Cost Allocation
CY 2018
AIR v7.3 / RMS v18.1

Layer 1: 200M xs 216M

Peril/Territory	Premium	Ceded AAL	Reins Margin
HU	**98.76%**	**98.19%**	**99.14%**
110	22.67%	22.33%	22.90%
120	22.76%	22.98%	22.62%
130	2.71%	2.66%	2.74%
140	20.42%	20.75%	20.21%
150	5.08%	5.04%	5.11%
160	5.58%	5.53%	5.62%
170	0.21%	0.21%	0.21%
180	2.99%	2.90%	3.05%
190	1.50%	1.47%	1.53%
200	0.98%	0.96%	1.00%
210	0.64%	0.62%	0.65%
220	2.70%	2.60%	2.77%
230	1.52%	1.50%	1.54%
240	1.49%	1.45%	1.52%
250	1.04%	1.00%	1.06%
260	0.37%	0.36%	0.37%
270	1.76%	1.70%	1.80%
280	0.26%	0.25%	0.27%
290	0.44%	0.42%	0.45%
300	0.29%	0.28%	0.30%
310	1.07%	1.02%	1.10%
320	0.57%	0.54%	0.58%
330	0.03%	0.03%	0.03%
340	1.10%	1.05%	1.13%
350	0.27%	0.26%	0.28%
360	0.27%	0.26%	0.27%
370	0.01%	0.01%	0.01%
380	0.02%	0.02%	0.02%
390	0.01%	0.01%	0.01%
OW	**1.05%**	**1.65%**	**0.65%**
WT	**0.19%**	**0.15%**	**0.21%**
Grand Total	**100.00%**	**100.00%**	**100.00%**

North Carolina Rate Bureau
Reinsurance Cost Allocation
CY 2018
AIR v7.3 / RMS v18.1

Layer 2: 300M xs 416M

Peril/Territory	Premium	Ceded AAL	Reins Margin
HU	**99.52%**	**99.24%**	**99.66%**
110	20.44%	19.89%	20.71%
120	23.91%	24.39%	23.67%
130	2.51%	2.45%	2.54%
140	21.28%	21.89%	20.98%
150	5.02%	4.96%	5.04%
160	6.00%	5.98%	6.01%
170	0.20%	0.20%	0.20%
180	3.09%	3.00%	3.14%
190	1.60%	1.56%	1.62%
200	1.04%	1.01%	1.05%
210	0.67%	0.65%	0.68%
220	2.92%	2.79%	2.99%
230	1.61%	1.59%	1.63%
240	1.56%	1.52%	1.59%
250	1.11%	1.07%	1.13%
260	0.38%	0.37%	0.39%
270	1.89%	1.83%	1.93%
280	0.28%	0.27%	0.28%
290	0.47%	0.45%	0.48%
300	0.29%	0.28%	0.30%
310	1.12%	1.07%	1.14%
320	0.57%	0.54%	0.58%
330	0.03%	0.02%	0.03%
340	1.02%	0.96%	1.05%
350	0.24%	0.23%	0.24%
360	0.23%	0.23%	0.23%
370	0.01%	0.01%	0.01%
380	0.01%	0.02%	0.01%
390	0.01%	0.01%	0.01%
OW	**0.40%**	**0.70%**	**0.25%**
WT	**0.08%**	**0.06%**	**0.09%**
Grand Total	**100.00%**	**100.00%**	**100.00%**

North Carolina Rate Bureau
Reinsurance Cost Allocation
CY 2018
AIR v7.3 / RMS v18.1

Layer 3: 400M xs 716M

Peril/Territory	Premium	Ceded AAL	Reins Margin
HU	**99.87%**	**99.79%**	**99.90%**
110	18.04%	17.27%	18.33%
120	25.21%	25.95%	24.93%
130	2.27%	2.19%	2.30%
140	22.17%	23.03%	21.85%
150	4.82%	4.76%	4.84%
160	6.41%	6.40%	6.41%
170	0.19%	0.19%	0.19%
180	3.12%	3.04%	3.14%
190	1.67%	1.64%	1.68%
200	1.08%	1.05%	1.09%
210	0.67%	0.66%	0.68%
220	3.13%	2.96%	3.19%
230	1.69%	1.66%	1.70%
240	1.59%	1.55%	1.61%
250	1.17%	1.12%	1.20%
260	0.38%	0.38%	0.38%
270	1.98%	1.92%	2.01%
280	0.29%	0.29%	0.30%
290	0.50%	0.47%	0.51%
300	0.29%	0.28%	0.30%
310	1.17%	1.11%	1.19%
320	0.58%	0.54%	0.59%
330	0.03%	0.02%	0.03%
340	0.96%	0.88%	1.00%
350	0.21%	0.20%	0.21%
360	0.21%	0.21%	0.21%
370	0.01%	0.01%	0.01%
380	0.01%	0.01%	0.01%
390	0.01%	0.01%	0.01%
OW	**0.10%**	**0.19%**	**0.07%**
WT	**0.03%**	**0.02%**	**0.03%**
Grand Total	**100.00%**	**100.00%**	**100.00%**

North Carolina Rate Bureau
Reinsurance Cost Allocation
CY 2018
AIR v7.3 / RMS v18.1

Layer 4: 500M xs 1,116M

Peril/Territory	Premium	Ceded AAL	Reins Margin
HU	**99.99%**	**99.99%**	**100.00%**
110	15.94%	14.69%	16.30%
120	26.31%	27.18%	26.05%
130	2.08%	1.95%	2.12%
140	22.97%	23.95%	22.69%
150	4.64%	4.53%	4.68%
160	6.79%	6.78%	6.79%
170	0.18%	0.17%	0.18%
180	3.12%	3.05%	3.14%
190	1.73%	1.71%	1.74%
200	1.10%	1.08%	1.11%
210	0.67%	0.66%	0.68%
220	3.25%	3.13%	3.28%
230	1.73%	1.73%	1.73%
240	1.60%	1.58%	1.61%
250	1.21%	1.18%	1.22%
260	0.38%	0.39%	0.38%
270	2.03%	2.02%	2.04%
280	0.30%	0.31%	0.30%
290	0.52%	0.50%	0.52%
300	0.30%	0.28%	0.30%
310	1.20%	1.18%	1.20%
320	0.59%	0.57%	0.59%
330	0.03%	0.03%	0.03%
340	0.92%	0.89%	0.93%
350	0.18%	0.19%	0.18%
360	0.19%	0.21%	0.19%
370	0.01%	0.01%	0.01%
380	0.01%	0.01%	0.01%
390	0.01%	0.01%	0.00%
OW	**0.01%**	**0.01%**	**0.00%**
Grand Total	**100.00%**	**100.00%**	**100.00%**

North Carolina Rate Bureau
Reinsurance Cost Allocation
CY 2018
AIR v7.3 / RMS v18.1

Layer 5: 612M xs 1,616M

Peril/Territory	Premium	Ceded AAL	Reins Margin
HU	**100.00%**	**100.00%**	**100.00%**
110	14.34%	11.92%	14.89%
120	26.95%	28.36%	26.62%
130	1.94%	1.70%	2.00%
140	23.50%	24.92%	23.18%
150	4.41%	4.22%	4.45%
160	7.07%	7.24%	7.03%
170	0.16%	0.15%	0.16%
180	3.10%	3.06%	3.11%
190	1.78%	1.80%	1.77%
200	1.10%	1.12%	1.10%
210	0.68%	0.67%	0.68%
220	3.37%	3.37%	3.37%
230	1.75%	1.79%	1.74%
240	1.62%	1.61%	1.62%
250	1.26%	1.25%	1.26%
260	0.39%	0.40%	0.39%
270	2.13%	2.13%	2.13%
280	0.32%	0.32%	0.32%
290	0.54%	0.53%	0.54%
300	0.31%	0.29%	0.31%
310	1.27%	1.24%	1.28%
320	0.63%	0.60%	0.63%
330	0.03%	0.03%	0.03%
340	0.94%	0.87%	0.96%
350	0.19%	0.18%	0.19%
360	0.20%	0.20%	0.19%
370	0.01%	0.01%	0.01%
380	0.01%	0.01%	0.01%
390	0.01%	0.01%	0.01%
Grand Total	**100.00%**	**100.00%**	**100.00%**

North Carolina Rate Bureau
Reinsurance Margin Allocation
CY 2018
AIR v7.3 / RMS v18.1

Territory	Policy Form 1	Policy Form 2	Total
110	1,277,672	16,953,293	18,230,965
120	3,677,702	20,004,166	23,681,869
130	895,167	1,378,726	2,273,893
140	6,844,445	13,981,379	20,825,824
150	1,899,915	2,770,335	4,670,250
160	2,073,142	4,019,018	6,092,161
170	112,554	68,700	181,254
180	1,375,658	1,625,058	3,000,717
190	919,410	676,946	1,596,355
200	743,477	282,805	1,026,282
210	342,392	305,835	648,227
220	639,036	2,382,270	3,021,306
230	1,230,486	365,058	1,595,544
240	793,307	731,765	1,525,072
250	386,399	741,910	1,128,309
260	220,918	147,847	368,765
270	187,159	1,715,061	1,902,220
280	65,881	215,754	281,635
290	132,173	348,503	480,676
300	186,320	104,422	290,742
310	302,558	847,962	1,150,520
320	175,846	405,998	581,845
330	14,634	11,847	26,480
340	164,702	846,595	1,011,296
350	73,283	150,295	223,577
360	80,592	147,607	228,199
370	5,325	5,138	10,463
380	4,202	9,400	13,602
390	2,312	6,091	8,402
Total	**24,826,667**	**71,249,784**	**96,076,450**

PREFILED TESTIMONY
OF
PAUL D. ANDERSON

2020 DWELLING PROPERTY INSURANCE RATE FILING BY THE NORTH CAROLINA RATE BUREAU
DECEMBER 2020

Q. Please state your name and business address.

A. My name is Paul D. Anderson. My business address is 15800 West Bluemound Road, Brookfield, WI 53005.

Q. By whom are you employed?

A. I am employed by Milliman, Inc. (Milliman) and have been employed by Milliman since February 1, 2007.

Q. What is your educational background?

A. I received a Bachelor of Science in Actuarial Science from Drake University in Des Moines, Iowa in 1993.

Q. Do you have any additional certifications or qualifications?

A. Yes. I have been a Fellow of the Casualty Actuarial Society (CAS) since 2002 and a Certified Specialist in Predictive Analytics of the CAS Institute (iCAS) since 2018. Since 2002, I have served on several committees of the Casualty Actuarial Society, including the following:

- Syllabus & Examination Committee: April 2004 to July 2006;
- Volunteer Support Task Force: February 2012 to April 2013;
- Volunteer Resources Committee: April 2013 to March 2020;
- Vehicle Technology & Impact on Loss Trends Planning Committee: October 2017 to August 2018;
- Participation Survey Task Force: January 2018 to Present;
- Crash Course in Vehicle Technology & Driverless Cars Committee (chairperson): February 2020 to Present; and
- Volunteer Resources Advisory Committee: June 2020 to Present.

I have also been a member of the American Academy of Actuaries since 2002 and meet all of the continuing education requirements of that organization as well as those of the Casualty Actuarial Society.

Q. What is your employment background?

A. I was employed by Allstate Insurance Company from June 1993 until January 2007. While at Allstate, I held various actuarial roles. I began my career as an Auto Pricing Analyst and, over time, I assumed increasing responsibility in various departments that included Property Pricing, Auto Pricing, Property Research, and Auto Research. On the pricing teams, I assisted in developing rates for property and auto insurance products in most states across the country. On the research teams, I assisted in developing new property and auto risk classification plans to be implemented by Allstate's pricing teams. From 2006 until January 2007, I served as a Senior Manager for Allstate's Eastern region, which included assisting in the oversight of the pricing strategies for approximately half the country, including North Carolina.

In February 2007 I began my career at Milliman. Since 2007, I have completed, managed, or overseen numerous property and auto pricing analyses for a variety of clients. My clients have included small single-state insurance companies, industry-leading national insurance companies, start-up InsurTech insurance companies, government entities, the North Carolina Rate Bureau, and other entities with similar coastal property exposure in states such as Florida, Hawaii, and Texas. These client assignments have included such projects as pricing analyses to evaluate overall rate adequacy, predictive modeling assignments to develop new risk classification plans, and analyses of catastrophe losses to evaluate the adequacy and allocation of property premiums corresponding to catastrophe risk.

Q. What is Milliman?

A. Milliman is among the world's largest independent actuarial and consulting firms. Milliman was founded in Seattle in 1947 as Milliman & Robertson and today has offices in principal cities worldwide, covering markets in North America, Latin America, Europe, Asia and the Pacific, the Middle East, and Africa. Milliman employs more than 4,000 people, including actuaries and specialists ranging from clinicians to economists. The firm has consulting practices in employee benefits, financial services, healthcare, life insurance, and property and casualty insurance. Milliman serves the full spectrum of business, education, financial, governmental, union, and nonprofit organizations.

Q. What are your current responsibilities at Milliman?

A. I am responsible for managing and overseeing the personal lines and insurance-related predictive analytics portion of Milliman's Milwaukee Casualty practice. The personal lines and predictive analytics team conducts a variety of property and auto pricing, product development, and predictive modeling assignments, primarily for insurance companies. Over the last five years, we have completed property analyses for nearly every state in the country, including North Carolina.

Q. Were you engaged to provide actuarial services to the North Carolina Rate Bureau (the Rate Bureau) in relation to its 2020 dwelling rate filing?

A. Yes, I was.

Q. What was the scope of that engagement?

A. Milliman was engaged for several aspects of the 2020 dwelling rate filing. My role was to review the compensation for assessment risk provision and the contingency provision in this filing. I was also engaged to conduct an independent review and provide feedback on the actuarial analyses underlying the filing. In this role, I participated in many of the discussions in which ISO presented preliminary data and analyses to the Rate Bureau. In addition, my role also included participating in the Rate Bureau's Property Rating Subcommittee meetings in which the 2020 dwelling filing was discussed. During these discussions, I offered feedback and insights to assist in the subcommittee's selections and decisions related to this filing.

Q. Is your firm being compensated for this engagement?

A. Yes, it is.

Q. Is that compensation in any way contingent on the provision of favorable testimony in support of the proposed filing?

A. No, it is not.

Q. Have you completed your review of the 2020 dwelling rate filing?

A. Yes, I have.

Q. Were there any constraints placed on your review, such as limited or delayed access to data or limited time that may have hindered your complete review?

A. No, I was provided all the data and information that were necessary and I had adequate time for a complete review. My review was not limited in any way.

Q. What is the overall indicated change in dwelling rates in this filing?

A. This filing shows the need for an overall 44.4% statewide average rate increase. This includes a 0.5% change to fire rates and a 58.1% change to extended coverage rates.

Q. Please describe the overall ratemaking methodology that underlies the filing.

A. The approach in this filing is generally consistent with prior dwelling filings submitted by the Rate Bureau. Consistent with the *Statement of Principles Regarding Property and Casualty Insurance Ratemaking* as published by the Casualty Actuarial Society, the indicated rates reflect the expected costs associated with insuring residential real property on dwelling policies. These expected costs include claims, claim settlement expenses, operational and administrative expenses, and the cost of capital. I also note that the dwelling insurance addressed in this filing is insurance on residential real property using Rate Bureau forms, rules, and rates, and that is what I am addressing when I refer to dwelling insurance in this testimony.

The statewide rate-level indications for dwelling insurance are developed based on a loss cost methodology (instead of a loss ratio methodology). The indicated rate-level change is calculated for each segment by comparing the required base class rate per policy to the current average base class rate. The required base class rate per policy is calculated by first projecting the losses and loss adjustment expenses for the policy period for which the filed rates are expected to be in effect. For extended coverage, losses are projected excluding historical hurricane losses. In addition to the exclusion of those hurricane losses, the projected losses for extended coverage are adjusted to remove excess losses and an excess factor is applied based on an average of the excess losses over 30 years of historical experience. Base class loss costs are calculated by dividing the adjusted incurred losses and loss adjustment expenses for each historical accident year by the corresponding earned house years and average rating factors. The base class loss costs by year are weighted together to develop a weighted trended base class loss cost for fire and a weighted trended non-hurricane base class loss cost for extended coverage. For the extended coverage portion of the filing, a trended modeled hurricane base class loss cost is also developed and added to the weighted trended non-hurricane base class loss cost to determine the total base class loss cost.

Following the development of the base class loss cost, a per-policy fixed expense provision and other expected underwriting expenses associated with issuing dwelling insurance policies are incorporated to determine the required base rate per policy. These expected underwriting expenses include provisions for underwriting profit, contingencies, dividends, compensation for assessment risk, the net cost of reinsurance per policy, and deviations. As mentioned above, the required base class rate per policy is compared to the current average base class rate to develop the overall statewide indicated rate-level change. This comparison of the required and current base class rates is consistent with the *Statement of Principles* referenced above, is commonly used throughout the industry, and as such, is an actuarially sound method of developing an indicated rate-level change.

Q. Are there any changes in the ratemaking methodology compared to prior filings?

A. Yes. Although the 2020 dwelling filing is generally consistent with prior filings, there are a several components of this filing that rely on different approaches as compared to the 2019 dwelling filing.

The first revised approach is that the excess factor for extended coverage is calculated using 30 years of historical experience. In the 2019 dwelling filing, the excess factor was calculated using more than 60 years of historical experience. This change impacts the non-hurricane losses in the statewide and by-territory rate-level indications for the extended coverage portion of the filing.

A second change in methodology in this dwelling filing is found in the calculation of the trended non-hurricane base class loss cost for the rate-level calculations by territory. With this filing, the non-hurricane losses and corresponding average rating factors used to calculate the non-hurricane base class loss cost have been trended to the prospective period to be consistent with the modeled loss experience. By comparison, in the rate-level calculations by territory in the 2019 dwelling filing, the non-hurricane losses and corresponding average rating factors used to calculate the non-hurricane base class loss cost were trended to the latest year since the modeled loss experience was based on the latest-year exposures. This change impacts the by-territory rate-level indications for all policy forms.

A third change in methodology is in the manner of determining the modeled hurricane losses for the period the rates will be in effect. With this filing, the exposures used as inputs to the hurricane models were trended to the prospective period using the selected exposure trends. This trending of exposures was applied prior to determining the modeled hurricane losses corresponding to those exposures. In the 2019 dwelling filing, the exposures from the latest year in the experience period were used as inputs to the hurricane models and the resulting modeled hurricane losses were trended to the prospective period using the selected loss trends.

A fourth change in methodology is in the calculation of the compensation for assessment risk provision. With this filing, simulated event-level losses based on the most recent exposure year were unavailable for analysis. As a result, event-level losses from the prior year were trended forward based on summary information provided by the hurricane model vendors. In the 2019 dwelling filing, event-level losses were available based on exposures evaluated at a time period consistent with the rest of the filing so no adjustments or trending were needed. This change has minimal impact on the rate-level indications.

Each of these updated approaches used to develop the statewide and by-territory rate-level indications is reasonable and actuarially sound.

Q. How are the expected losses determined?

A. This filing uses the latest available five years of historical loss experience, which is accident years ending December 31, 2014 through December 31, 2018, to determine expected losses other than hurricane losses. Using five years of experience is consistent with North Carolina statutes and prior dwelling fire and extended coverage rate filings. It is also consistent with generally accepted ratemaking practices because the use of five years of historical experience balances stability of the overall rate level with responsiveness to the most recent conditions. Because severe weather-related events can cause volatility in the loss experience, hurricane losses and excess losses (for extended coverage only) have been removed from the base loss experience. Each of the five years of losses has been developed to ultimate amounts and has been adjusted to a common $500 deductible level. Losses are developed to ultimate because the final incurred losses for an accident year are often different than initial loss estimates due to late-reporting of claims or as yet unknown settlement amounts on known claims.

After these initial adjustments, a provision for excess losses is applied to each accident year for extended coverage, and a provision for loss adjustment expenses is applied to each accident year for all dwelling forms. The excess factor of 1.064 for the extended coverage section of the filing is determined using ISO's standard excess loss procedure, using a 30-year experience period as noted earlier. This procedure evaluates historical non-hurricane loss experience back to 1989 to develop a ratio of the long-term average excess loss ratio to the long-term average normal loss ratio.

Following these additional adjustments, in order to reflect the expected change in costs, the losses are trended from the midpoint of each experience period to the policy period for which the filed rates are expected to be in effect. Similar to prior dwelling filings, historical claim frequency, loss severity, and pure premium experience, Fast Track data, and external cost indices were considered in the evaluation of loss trends. In the prior filing, losses were trended using current cost factors and loss projection factors based on external indices and loss trend adjustment factors that reflected the difference between the external indices and actual historical experience. With this filing, this process was simplified and the historical experience is adjusted to the prospective period using selected loss trends that are based on the data described above.

In addition to reflecting a loss trend, a premium trend is also determined by combining current amount factors with premium projection factors for each accident year. The current amount factors are developed by comparing the average policy size relativity for each accident year to the comparable relativity for the most recent year in the experience period. The premium projection factors are calculated based on the fitted annual change in the average policy size relativity for each policy form.

In my opinion, the selections and methodologies referenced above, including the excess factor, the loss adjustment expense factors, the loss trend factors, and the premium trend factors, are reasonable and actuarially sound.

After adjusting the losses for each of the items mentioned above, each year's trended losses and loss adjustment expenses are divided by the earned house years to determine the average trended loss cost. The average trended loss costs are converted to Trended Base Class Loss Costs by dividing by the Average Rating Factor applicable to each accident year. Finally, these base class loss costs are weighted together to develop a Weighted Trended Base Class Loss Cost for fire and a Weighted Trended Non-Hurricane Base Class Loss Cost for extended coverage. The weights applied to each accident year differ between fire and extended coverage because there tends to be more variation in the extended coverage loss costs as compared to the fire loss costs. As a result, to avoid giving too much weight to an unusually high or low loss cost, an even distribution of weights is applied to the historical experience for extended coverage. In contrast to this, a distribution that assigns more weight to the more recent years is used for fire, since that segment typically has more stable base loss costs.

In my opinion, the methodology used to develop average loss costs and the weights assigned to each of the dwelling policy forms are reasonable and are consistent with widely-used actuarial ratemaking practices.

Q. In the previous response, you mentioned a loss adjustment expense provision. How are the dwelling provisions for loss adjustment expense determined?

A. The allocated and unallocated loss adjustment expenses are included with non-hurricane losses by applying a trended loss adjustment expense factor. Using information received from the Rate Bureau's data call for expense experience, loss adjustment expenses are summarized for calendar years 2015 through 2019. Consistent with prior dwelling filings, a three-year average is calculated after removing the highest and lowest ratio of expenses to losses. By excluding the highest and lowest ratios observed in the historical experience period, this methodology reduces the volatility in the average loss adjustment expense ratio that may result from variation in the underlying incurred losses from year to year. After the average loss adjustment expense ratio is calculated, it is adjusted to reflect the difference in the loss adjustment expense trend and the loss trend.

A separate provision for hurricane-related loss adjustment expenses is included in the modeled hurricane losses based on data and a recommendation provided by Aon.

Q. In your opinion, are the provisions for loss adjustment expenses reasonable?

A. Yes, the loss adjustment expense provisions are reasonable. It is common practice in the industry to use an average of historical experience to determine a loss adjustment expense provision, and it is reasonable to adjust that provision for expected differences in the loss adjustment expense trend and the loss trend.

Q. Did the Rate Bureau consider the potential impact of COVID-19 when selecting loss trend factors?

A. Yes, the Rate Bureau considered the potential impact of COVID-19 when selecting loss trend factors. As noted above, this filing uses five years of historical loss experience including accident years through December 31, 2018. As a result of the timing of this historical loss experience, the data supporting this filing was not impacted by COVID-19. With a proposed effective date of September 1, 2021, it is unknown what impact COVID-19 may have on dwelling claims occurring during the prospective time period. It is possible that the frequency of claims arising from some causes of loss (e.g., fire or water) may increase as people spend more time at home, and the frequency of claims resulting from other causes of loss (e.g., theft or vandalism) may decrease. This uncertain and potentially varying impact of COVID-19 on dwelling loss trends was taken into account during the discussion and selection of loss trends.

Q. Is credibility considered in the rate-level indication?

A. Yes, credibility is considered. At the statewide level, based on the volume of data supporting the statewide rate-level indications, both fire and extended coverage are considered fully credible. The full credibility standards are 500,000 house years for fire and 330,000 house years for extended coverage. When the territorial rate-level indications are calculated, partial credibility is determined using the square root rule, which is a long-standing actuarial methodology used throughout the industry.

Q. How is hurricane exposure reflected in each policy form's rate-level indication?

A. Similar to the Rate Bureau's prior dwelling filing, this filing reflects hurricane exposure in the extended coverage section of the rate-level indication by using modeled hurricane losses rather than actual hurricane loss experience. Although there are actual hurricane losses in the experience period, the hurricane and excess losses have been removed from the base loss experience, as noted in my testimony above. Actual hurricane losses have a significant amount of variability even when evaluating twenty or more years of historical loss experience in a state. As such, it is universally accepted by the property and casualty insurance industry that hurricane models provide the most reliable approach to determining

anticipated average annual hurricane losses over an extended time period. Hurricane models can be used to simulate 100,000 or more years of events, which provides a broader perspective on potential insured losses as compared to only evaluating the last several decades of losses. This broader perspective provides a more reliable estimate of the average frequency and severity of insured hurricane losses. Similarly, it provides a more reliable estimate of the frequency and severity of rare, but very severe events that may not have occurred within the last 100 years of recorded history, but have the potential to occur next year.

Q. How is the provision for expected hurricane losses determined?

A. The provision for average annual hurricane losses in this filing is consistent with the prior dwelling filing in that expected hurricane losses are developed through the use of hurricane models of two independent catastrophe modelers. To facilitate the use of two hurricane models, the Rate Bureau retained Aon to run both models and to develop modeled hurricane losses using the blended results of these two models. I reviewed the exposure data provided as input to each model, and it is my opinion that the data was reasonable and consistent with other sections of this filing. I am also familiar with the assumptions selected as inputs to each model, and it is my opinion that the assumptions were applied consistently in both the AIR and RMS models such that the resulting output of both models is comparable. However, because Aon ran both models, I am relying on the work and opinions of Minchong Mao of Aon as it relates to specific details about the modeling process. The reliance on Aon to run both models and to develop modeled hurricane losses using the blended results of these two models is consistent with the prior dwelling filing.

The Rate Bureau requested that Aon combine the results of the two hurricane models by averaging the results from each model. This approach of giving equal weight to each model is intuitive, easy to understand, and the most reasonable method of blending two hurricane models. This blending approach (i.e., averaging) is also a common practice among insurance companies that consider multiple hurricane models. Based on my review of the blended model results, it is my opinion that the resulting hurricane losses reflected in this filing are reasonable and can be relied upon for the various purposes for which modeled hurricane losses are used in this filing. Additionally, since both models are equally credible, it is also my opinion that assigning equal weight to each model is the most reliable blending method and the most actuarially sound manner to consider two hurricane models.

Q. What model versions and modeling assumptions were used to develop estimated hurricane losses?

A. The current AIR model is Touchstone v7.3 and the current RMS model is RiskLink v18.1. To develop the expected hurricane losses, Aon relied on AIR's Standard event set and on RMS' Historical event set. These event sets were used instead

of AIR's Warm Sea-Surface Temperature (WSST) event set and RMS' Medium-Term Rate event set. Although many primary insurance companies consider the WSST and Medium-Term Rate events sets when developing expected hurricane losses for indicated rates in states other than North Carolina, the event sets selected for this filing are reasonable and actuarially sound.

Both the AIR and RMS models were run with aggregate demand surge included, which was identified as loss amplification in the RMS model. This standard procedure accounts for the expected additional cost for labor and materials after a very large hurricane occurs. Historical experience shows that, when major catastrophic events occur, the increased demand for building materials, labor, temporary housing, and other basic necessities can exceed the supply of these same items, which consequently increases their cost. Running models with demand surge is consistent with the Rate Bureau's prior dwelling filings, and is the common practice by insurance companies when developing rates based on modeled hurricane losses. Although the demand surge component of each model was used in this filing, the storm surge component of each model was not used to develop hurricane losses.

Q. Were any other calculations applied to the hurricane losses derived from the models?

A. Yes. Before providing the blended hurricane losses, Aon applied a hurricane-specific provision for loss adjustment expense. After Aon provided the modeled hurricane losses (including LAE), ISO calculated a Trended Modeled Hurricane Base Class Loss Cost for the extended coverage segment. The Trended Modeled Hurricane Base Class Loss Cost has been adjusted for LAE and trended such that the resulting amount is evaluated at a point in time consistent with the amount developed for the Weighted Trended Non-Hurricane Base Class Loss Cost.

Q. How are the provisions for commission and brokerage determined?

A. The provisions for commission and brokerage are determined based on the latest three-year average of the ratio of each segment's commission and brokerage expense relative to each segment's written premium including deviations. Deviations are included in the premium amounts underlying this calculation in order to be consistent with the actual calculation of commission and brokerage amounts paid by individual companies within the industry.

Q. In your opinion, are the provisions for commission and brokerage reasonable?

A. Yes, the commission and brokerage provisions are reasonable. It is common practice in the industry to use a three-year average to determine a commission and brokerage provision.

Q. How are the provisions for taxes, licenses, and fees determined?

A. The provisions for taxes, licenses, and fees are determined based on the latest three-year average of the ratio of each segment's taxes, licenses, and fees expense relative to each segment's written premium including deviations. Deviations are included in the premium amounts underlying this calculation in order to be consistent with the actual calculation of taxes, licenses, and fees paid by individual companies within the industry.

Q. In your opinion, are the provisions for taxes, licenses, and fees reasonable?

A. Yes, the taxes, licenses, and fees provisions are reasonable. It is common practice in the industry to use a three-year average to determine a taxes, licenses, and fees provision.

Q. How are the provisions for other acquisition expense determined?

A. The provisions for other acquisition expense are determined based on the latest three-year average of the ratio of each segment's other acquisition expense relative to each segment's earned premium excluding deviations.

The three-year average provisions are then trended from the midpoint of the experience period to the midpoint of the trend period based on an expense trend derived from cost indices. Following this, the trended other acquisition expense provisions are added to the trended general expense provisions and applied to the statewide average current base rates (adjusted for premium trend) to develop an average fixed expense per policy for fire and for extended coverage.

Q. In your opinion, are the provisions for other acquisition expense reasonable?

A. Yes, the other acquisition expense provisions are reasonable. It is common practice in the industry to use a three-year average to determine an other acquisition expense provision, and to trend fixed expense provisions to account for inflation.

Q. How are the provisions for general expense determined?

A. The provisions for general expense are determined based on the latest three-year average of the ratio of each segment's general expense relative to each segment's earned premium excluding deviations.

The three-year average provisions are then trended from the midpoint of the experience period to the midpoint of the trend period based on an expense trend derived from cost indices. As noted above, the trended general expense provisions are added to the trended other acquisition expense provisions and

applied to the statewide average current base rates (adjusted for premium trend) to develop an average fixed expense per policy for fire and for extended coverage.

Q. In your opinion, are the provisions for general expense reasonable?

A. Yes, the general expense provisions are reasonable. It is common practice in the industry to use a three-year average to determine a general expense provision, and to trend fixed expense provisions to account for inflation.

Q. Is a provision for policyholder dividends included in the filing?

A. Yes, the Rate Bureau reviewed historical data for fire and extended coverage and developed provisions for expected policyholder dividends separately for each segment. The Rate Bureau evaluated five years of historical experience and selected provisions for policyholder dividends of 0.50% for fire and 0.80% for extended coverage. These provisions were based on five-year average ratios of the total policyholder dividends issued by dwelling insurers in North Carolina to the total direct written premium of those same companies.

The Actuarial Standard of Practice (ASOP) No. 29 regarding *Expense Provisions in Property/Casualty Insurance Ratemaking* states:

> The *Statement of Principles Regarding Property and Casualty Insurance Ratemaking* of the Casualty Actuarial Society (CAS) classifies policyholder dividends as an expense to operations. When the actuary determines that policyholder dividends are a reasonably expected expense and are associated with the risk transfer, the actuary may include a provision in the rate for the expected amount of policyholder dividends. In making this determination, the actuary should consider the following: the company's dividend payment history, its current dividend policy or practice, whether dividends are related to loss experience, the capitalization of the company, and other considerations affecting the payment of dividends.

As stated in ASOP NO. 29, policyholder dividends are classified as an operating expense. In addition to the above excerpt from the *Statement of Principles Regarding Property and Casualty Insurance Ratemaking*, the Statement also provides that indicated rates should reflect the expected costs associated with insuring dwelling policies, including all operating expenses. As such, since policyholder dividends are classified as an operating expense, it is consistent with the *Statement of Principles Regarding Property and Casualty Insurance Ratemaking* and ASOP No. 29 to include a provision for policyholder dividends in the proposed rates reflected in this filing.

Q. In your opinion, are the provisions for policyholder dividends reasonable?

A. Yes, the provisions for policyholder dividends are reasonable. It is reasonable and actuarially sound to calculate a five-year average ratio to determine a provision for policyholder dividends, and to treat this provision in a similar manner as a variable underwriting expense.

By reviewing five years of historical experience to determine provisions for policyholder dividends, the Rate Bureau is complying with the *Statement of Principles Regarding Property and Casualty Insurance Ratemaking* by considering the dividend payment history and ensuring that the selected provisions are reasonably expected expenses.

Q. Is a contingency provision included in the filing?

A. Yes, the Rate Bureau is including a 1% contingency provision in this filing. This is consistent with the prior dwelling rate filings submitted by the Rate Bureau.

In addition to being consistent with prior Rate Bureau filings, the use of a contingency provision is common within the property and casualty insurance industry. According the *Actuarial Standard of Practice No. 30: Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance Ratemaking,* "the actuary should include a contingency provision if the assumptions used in the ratemaking process produce cost estimates that are not expected to equal average actual costs, and if this difference cannot be eliminated by changes in other components of the ratemaking process." There are several reasons why expected cost estimates may not be equal to actual costs. Some of these reasons include adverse court decisions, extension of coverage for unforeseen or unintended exposures, regulatory delay or reduction in filed rate changes, and unexpected large losses not sufficiently recognized in the normal ratemaking process. For these reasons, among others, the Rate Bureau believes a contingency provision is appropriate and necessary.

Included with this filing as Exhibit RB-19 is an exhibit I prepared that summarizes the estimated impact of delays in the filing process within the State of North Carolina. The delay in obtaining rate changes, whether caused by the regulatory review process or other delays inherent in the filing process, is one of several items listed above that supports the use of a contingency provision in a rate-level indication. Exhibit RB-19 lists the fourteen property rate filings submitted by the Rate Bureau between 2008 and 2019. For each filing, I compared the effective date assumed in the rate filing to the actual effective date. This difference, which reflects the delay due to the filing process, ranges from 0 months in the 2019 dwelling filing, to 22 months in the 2011 dwelling filing. After determining the length of delay for each filing, I applied the net trend (i.e., the loss trend offset by the premium trend) in that filing for the number of months of delay to determine the estimated impact of the delay in the filing process on the overall rate level. The

estimated impact of delay varies across the fourteen filings, ranging from -1.2% in the 2018 dwelling filing to +5.9% in the 2008 MH(C) mobile homeowners filing, with an average impact of +1.1%.

Based on prior filings submitted by the North Carolina Rate Bureau, my experience with property filings submitted by insurance companies in other states, and the 1.1% estimated impact of delays in the North Carolina filing process, it is my opinion that a 1% contingency provision is reasonable, consistent with common actuarial practice, and appropriate based on fundamental actuarial principles.

Q. Are you providing expert testimony concerning the underwriting profit provision?

A. No, I am relying on the work and opinions of Dr. Vander Weide and Dr. Zanjani as to the underwriting profit provision. The scope of my analysis and testimony relates to other aspects of the proposed rate filing.

Q. Earlier you said that one of your roles related to this filing was to review the compensation for assessment risk provision. Can you please explain this issue?

A. Yes. There is considerable risk to primary insurers that is attributable to the exposures written in the North Carolina Insurance Underwriting Association (i.e., the Coastal Property Insurance Pool, or “Beach Plan”) and the North Carolina Joint Underwriting Association (i.e., the FAIR Plan). Together, the Beach Plan and FAIR Plan serve as the “residual market” for residential property insurance in North Carolina. These two entities provide property insurance when policyholders are unable to purchase insurance coverage from companies in the voluntary market. In states with significant exposure to catastrophic events, property insurance residual markets may grow to represent a sizable portion of the total insured risk in the exposed regions of the state. In North Carolina, the Beach Plan and FAIR Plan have become the predominant writers of dwelling insurance in the 18 coastal counties.

Similar to voluntary insurance companies, the Beach and FAIR Plans use the premiums collected from policies they issue to fund the losses and expenses attributable to the coverages they insure. When premiums are greater than losses and expenses during a fiscal year, the Beach and FAIR Plans accumulate surplus. That surplus is available to pay losses in the event that future losses and expenses exceed collected premiums plus investment income. However, if the surplus of either the Beach Plan or FAIR Plan is exhausted, then additional losses are passed through to property insurers in North Carolina in the form of an assessment. The potential overall industry assessment each year from the Beach Plan is capped at $1 billion, but the potential assessment from the FAIR Plan is unlimited. If losses in the Beach Plan exceed the retained surplus, the $1 billion industry assessment, and any other resources of the Beach Plan (such as reinsurance), any additional

losses are passed through directly to residential property insurance policyholders in North Carolina.

This risk of potential assessment by the Beach Plan or FAIR Plan on property insurers in North Carolina requires that insurance companies be compensated for the additional risk to their capital. To quantify this risk, I have applied a procedure developed by Milliman to incorporate a provision in the dwelling rates that compensates insurers for that risk.

Q. Can you please explain the procedure you applied?

A. Yes. The methodology developed by Milliman to quantify the compensation for assessment risk involves two steps. The first step is to calculate the magnitude of the exposure itself, and the second step is to determine the fair compensation to be paid to insurers for being required to bear that risk.

To quantify the magnitude of the exposure, it was necessary to estimate the expected value of the assessments on insurers arising from catastrophic losses incurred by the Beach Plan or FAIR Plan. Because an assessment on insurers results only after either the Beach or FAIR Plan has exhausted other resources available to pay losses, I needed to determine the likelihood of that occurring as well as the amount by which the losses exceed those other resources. As such, I obtained information from the Beach and FAIR Plans regarding the reinsurance programs in place for the 2020 storm season, along with assumptions of each plan's accumulated surplus available for the season. The accumulated surplus and available reinsurance represent the "other resources" that are available to pay for hurricane losses during the 2020 storm season. I then relied on the AIR and RMS hurricane model runs used by the Beach and FAIR Plans for the 2019 storm season, adjusted the estimated losses to the 2020 storm season based on the impact of changes in the underlying exposures and the hurricane models, and evaluated the adjusted losses corresponding to each event simulated by the models. For each adjusted modeled loss, I determined the amount of loss that would be covered by reinsurance and the remaining losses that would be funded either from the plans' accumulated surplus, through assessments on property insurers in the state, or ultimately through assessments on North Carolina property insurance policyholders. I subtracted the accumulated surplus of the Beach and FAIR Plans from the losses remaining after reinsurance, limited the assessable losses due to the Beach Plan exposures to $1 billion, and calculated the average assessment on property insurers across all events simulated by the models. This average assessment on property insurers is equal to the expected value of the losses that would be funded through assessments on North Carolina property insurers.

As noted above, this calculation produces a measure of the magnitude of the exposure. That is, it represents the risk to insurers' capital that is associated with the exposure to Beach or FAIR Plans assessments. The second step in Milliman's analysis is to develop a method of measuring the fair compensation to insurers for bearing this risk.

Q. Can you please explain how you measured the compensation for bearing this risk?

A. Yes. To measure the fair compensation for bearing this risk, I relied on publicly-available data that quantifies the market price of catastrophe risk, taken from recently-issued insurance linked securities. Insurance linked securities (ILS) are securities such as bonds, which have conditional payoffs that are very similar to reinsurance. Investors purchase these securities at significant yield premiums compared to risk-free bonds because the investors are exposed to loss of principal and interest if certain "insured events" occur.

Q. What kind of data is available and how is this information used to determine the compensation for assessment risk?

A. Lane Financial, LLC is a firm that specializes in the analysis of insurance linked securities. In March of each year, Lane publishes a table of data that summarizes a variety of information that can be used to evaluate the fair compensation for bearing catastrophe risk. For each ILS in the table, Lane publishes the following data: the yield on the security; the excess return over the risk-free rate; the probability that the security will suffer a loss; and the expected value of loss anticipated on the security. These data elements provide the foundation for my analysis of the proper compensation for bearing the risk of Beach or FAIR Plan assessments.

Before describing the mechanics of the analysis, I will first define several terms that will prove useful in this discussion.

- The "*yield spread*" is simply the difference between the yield on a particular ILS and the risk-free rate. If a $100 million bond is issued with a yield spread of 10%, this implies that the insurer issuing the bond would pay $10 million in interest in excess of the risk-free rate to encourage investors to purchase such a security.
- Now assume that the distribution of hurricane losses is such that, based on the probability and amount of potential hurricane losses, an investor would anticipate having an average loss of $2 million per year. This amount is identified as the "*expected loss*."
- Since the investor in this example receives compensation of $10 million in excess of the risk-free rate for bearing the risk of loss, the "*expected profit*" to the investor is $8 million (i.e., $10 million in interest in excess of the risk-free rate minus $2 million of expected losses).

- Finally, I define a term known as the "*profit multiple*," which is the ratio of expected profit to expected loss. In the above example, the profit multiple would be $8 million of expected profit divided by $2 million of expected loss, or a profit multiple of 4.0.

The profit multiples derived from insurance linked securities provide an estimate of the compensation that investors require to bear catastrophe risk, in that they tell us what investment returns are required in order to take on the risk of loss from a catastrophic event. One particularly important feature of this metric is that it is a measure of compensation per dollar of expected loss. As a result, because the first step of my analysis determines the expected value of losses that would be funded through assessments, the profit multiple can be applied to those expected values to develop an estimate of the fair compensation for bearing such risk. This is the measure of risk I relied upon in evaluating the fair compensation for property insurers whose capital is exposed to Beach or FAIR Plan assessments.

Q. Generally speaking, which insurance linked securities have larger risk premiums and higher profit multiples?

A. For exposures such as catastrophic events, securities that have a lower probability of incurring a loss have greater volatility and as a result, have larger risk premiums. Securities with larger risk premiums have a larger ratio of expected profit to expected loss and, as such, have higher profit multiples.

Q. Have you developed any exhibits that summarize the calculations used to develop the fair compensation to insurers for bearing the risk of Beach Plan or FAIR Plan assessments?

A. Yes. Exhibit RB-18 contains ten pages of information required to develop the fair compensation for bearing Beach and FAIR Plan assessment risk.

- *Page 1* of Exhibit RB-18 shows the curve I fit to the ILS profit multiples based on all catastrophe-related securities issued in the last ten years. This exhibit also includes the equation of the fitted curve, which can be used to determine the average profit multiple for any layer to which insurer capital is exposed.

- *Page 2* of Exhibit RB-18 shows a summary of the Beach Plan's reinsurance program, and *Page 6* shows a similar summary of the FAIR Plan's reinsurance program. These summaries include the various layers of reinsurance purchased and the coverage levels within those layers.

- *Pages 3 and 7* display the profit multiples calculated for each layer of the Beach and FAIR Plan's loss distributions, based on the equation shown on Page 1. In order to determine the fair compensation to voluntary insurers for bearing the risk of assessments, I need to determine which layers contain losses that will be funded by assessments, as well as the corresponding expected losses within those layers. The profit multiples can then be applied to the expected

losses to determine the appropriate compensation per dollar of expected loss in each layer.

- *Pages 4 and 8* illustrate how potential losses for the Beach Plan Residential Account and FAIR Plan are funded. (The Beach Plan determines losses and assesses voluntary insurers separately for each account, while the FAIR Plan has only one account.) Because of the $1 billion cap on Beach Plan assessments, any amounts needed to pay claims in excess of the assessable amounts are to be collected through surcharges on property insurance policyholders statewide.

  For each event simulated by the hurricane models, losses are separated by account (Beach Plan Residential, Beach Plan Commercial, FAIR Plan Residential, and FAIR Plan Commercial). Then, the losses for each account are divided into layers based on the source of funding for those losses – Beach or FAIR Plan surplus, assessments on voluntary insurers, private reinsurance, and ultimately any additional amounts in the Beach Plan to be covered by policyholder surcharges. Finally, the losses associated with each event are accumulated in each of the loss layers to determine expected values.

- Although Pages 4 and 8 illustrate the funding of potential losses within each layer, the purpose of my analysis is to determine the fair compensation for the risk of assessments on private insurers. As such, the analysis must consider the probability of losses occurring within each layer and the expected value of losses that will be borne by private insurers. *Pages 5 and 9* of Exhibit RB-18 provide that analysis. They show the expected value of the losses that would be covered by the Beach Plan Residential and FAIR Plan accounts, and the average annual amount of those losses that would be assessed to private insurers. Pages 5 and 9 also display the average profit multiples associated with each layer of the loss distribution, and the product of the indicated profit multiples times the expected losses within each layer. The sum of those values is the indicated compensation for assessment risk for each account.

- The final step in my calculation is to determine the appropriate provision to be included in the dwelling rates to compensate insurers for the risk of Beach Plan or FAIR Plan assessments. This provision, expressed as a percent of premium, is developed on *Page 10* of Exhibit RB-18. Since assessments for Beach or FAIR Plan losses are applied to all property insurance lines in the state, the bottom table on Exhibit RB-18, Page 10 shows the development of a charge that will produce an amount of revenue equal to the total required compensation of $103.59 million. As shown on this exhibit, that charge amounts to 2.9% of total property insurance premium in the state.

Q. In your opinion, is it appropriate to include a 2.9% provision for the compensation for assessment risk in dwelling rates in North Carolina?

A. Yes. Insurance companies writing dwelling policies in North Carolina are exposed to the risk of Beach Plan or FAIR Plan assessments as a result of writing voluntary market property insurance in the state. As such, those insurance companies are entitled to receive fair compensation for bearing that risk and it is appropriate to include that compensation in the dwelling rates. The model Milliman has developed relies on a widely-accepted measure of compensation to determine a provision that will fairly compensate insurers for bearing this additional risk to their capital.

Q. Earlier, when describing the overall ratemaking methodology that underlies this filing, you said that the expected underwriting expenses include a provision for the net cost of reinsurance per policy. Can you please explain this issue?

A. Yes. Dwelling insurance is one of several types of coverages that has exposure to potential catastrophic events. In such coverages (dwelling, homeowners, and other property coverages), individual catastrophic events can result in significant losses that exceed the amount of liability the typical insurer can reasonably assume for solvency and financial stability considerations and that can jeopardize the insurer's ability to pay claims. As a result, in these lines of business, insurers routinely purchase reinsurance to mitigate their exposure to extreme events. In order to accurately reflect the expected costs associated with insuring property policies, as discussed in the *Statement of Principles Regarding Property and Casualty Insurance Ratemaking*, it is appropriate to include the cost of this reinsurance in the ratemaking process for these lines of insurance.

Q. In your opinion, is it appropriate to include a provision for the net cost of reinsurance per policy in dwelling rates in North Carolina?

A. Yes. Insurance companies writing dwelling policies in North Carolina incur a significant cost for bearing the risk of properties exposed to catastrophic events. Regardless of whether the risk of catastrophic losses is retained by the primary insurer or transferred to a reinsurer, the market cost of bearing that risk must be included in the rates. This is a foundational actuarial principle included in the *Statement of Principles Regarding Property and Casualty Insurance Ratemaking* and is a legitimate cost of the risk transfer inherent in the purchase of property insurance. As such, the net cost of reinsurance per policy should be included in the North Carolina dwelling rates.

Q. How does this filing reflect the net cost of reinsurance per policy?

A. For many years, the Rate Bureau has included a provision for the net cost of reinsurance per policy. To support this filing, the Rate Bureau has engaged Aon, one of the world's largest reinsurance brokers, to develop the provision for the net cost of reinsurance per policy. It is my understanding that Aon was retained by the Rate Bureau based on their ability to access relevant data and experience from the reinsurance market, their expertise with catastrophe-related issues, and their prominence with respect to the reinsurance industry. This is consistent with the previous dwelling rate filing submitted by the Rate Bureau.

Q. In your opinion, is it appropriate to allocate reinsurance costs within North Carolina in a way that is proportional to risk?

A. Yes. The risk associated with insuring properties exposed to catastrophic events varies geographically within North Carolina. As such, the cost for bearing that risk should be allocated proportionally to the measurement of risk. In its analysis of reinsurance costs for this filing, Aon provides the statewide provision for the net reinsurance cost per policy and also allocates the reinsurance costs to each policy form and each territory. This allocation is appropriate and consistent with the objective of producing rates that are not inadequate, not excessive, and not unfairly discriminatory across policyholders.

Q. Are you providing expert testimony concerning the development of the net cost of reinsurance provision?

A. No, I am relying on the work and opinion of Stephen Fiete of Aon as to the development of the net cost of reinsurance provision.

Q. Is a provision for deviations included in the filing?

A. No, the Rate Bureau reviewed historical data and considered whether to apply a provision for deviations, but elected not to include one in this filing.

Q. Does the filing review the rate-level adequacy by class?

A. Yes. With this filing, the Rate Bureau developed indicated rate-level changes by class (i.e., Buildings or Contents) using a similar methodology as the statewide indication. A base class loss cost is calculated for each class using the historical loss experience. In addition, a credibility value is assigned to each class based on the number of house years underlying each loss cost. As mentioned above, the full credibility standards are 500,000 house years for fire and 330,000 house years for extended coverage. Using the credibility for each class, a credibility-weighted loss cost is determined by class. Additional calculations are applied to each class to reflect expenses, dividends, and reinsurance in a similar manner as applied at

a statewide level. The result of these calculations is an indicated rate change by class.

In my opinion, the methodology used to develop the indicated rate-level change by class is reasonable and is consistent with widely-used actuarial ratemaking practices.

Q. Does the filing review the rate-level adequacy by territory?

A. Yes. With this filing, the Rate Bureau developed indicated rate-level changes by territory using a similar methodology as the statewide indication. A base class loss cost is calculated for each territory using the historical loss experience. In addition, a credibility value is assigned to each territory based on the number of house years underlying each loss cost. As mentioned above, the full credibility standards are 500,000 house years for fire and 330,000 house years for extended coverage. Using the credibility for each territory, a credibility-weighted base class loss cost is determined by territory. Additional calculations are applied to each territory to reflect expenses, dividends, and reinsurance in a similar manner as applied at a statewide level. The result of these calculations is an indicated rate-level change by territory, which is allocated to each class based on the statewide indicated rate-level change by class.

In my opinion, the methodology used to develop the indicated rate-level change by territory and by class is reasonable and is consistent with widely-used actuarial ratemaking practices.

Q. Does the filing review the wind exclusion credits and wind mitigation credits?

A. Yes. Based on the indicated rates by territory (for Territories 110 to 160) and by class that are being proposed with this filing, the wind exclusion credits and wind mitigation credits are being updated in a corresponding manner. Using the underlying formula for the statewide rate-level indication, an adjustment is made to the appropriate components of the indication formula to reflect the non-wind losses as a percent of the total losses. The indicated non-wind rate is subtracted from the indicated overall rate to determine the indicated wind exclusion credit for each territory. For those territories where the proposed rate is less than the indicated rate, the wind exclusion credit is similarly reduced such that the resulting non-wind rate remains consistent with the indicated non-wind rate. The wind mitigation credits for Territories 110 to 160 are being revised in a manner proportional to the wind exclusion credits.

In my opinion, the methodology used to develop the revised wind exclusion credits and wind mitigation credits is reasonable and is consistent with widely-used actuarial ratemaking practices.

Q. Does the filing review any other rating factors used in the premium calculation process?

A. Yes. This filing proposes to introduce age of construction rating factors for fire and extended coverage. Using five years of historical loss experience including accident years ending December 31, 2014 through December 31, 2018, average pure premiums are calculated by age. Using a cutoff age of 15 years, indicated relativities are determined by fitting a straight line to the pure premiums from ages 0 to 15. Proposed factors are calculated by applying a constant discount factor of 1.0% for each incrementally newer year compared to the base age of 15 years. This methodology results in a proposed factor of 0.860 for new homes (i.e., age of construction = 0, which receives the largest discount) compared to indicated new home factors of 0.323 for fire and 0.600 for extended coverage.

In my opinion, the methodology used to develop the age of construction rating factors is reasonable and is consistent with widely-used actuarial ratemaking practices. In addition, in my opinion, the proposed age of construction rating factors are reasonable and reflect an effective strategy to introduce this discount while also mitigating the impact of this change on policyholders who do not receive the discount.

Q. What is the difference between the <u>indicated</u> rate level and the <u>filed</u> rate level?

A. The indicated rate level is the actuarially sound and correct rate level for each territory, each segment, and each class. It is the indicated rate change by territory that is needed to cover the expected losses and expenses while still providing a fair and reasonable profit. The indicated rate level is also the rate level that complies with the statutory requirements that rates not be excessive, inadequate, or unfairly discriminatory.

For extended coverage, the statewide indicated rate-level change is 58.1%. Due to differences by territory in historical loss experience, modeled hurricane losses, and other expenses, the indicated change by territory varies throughout the state. For many of the western territories, the indicated change is less than 58.1%, but for several of the territories closer to the coast, the indicated change is greater than 58.1%. The indicated rate-level change by territory is further divided into an indicated Buildings rate-level change and an indicated Contents rate-level change based on the indicated rate change by class (discussed above) relative to the total indicated rate change. For extended coverage, the statewide indicated Contents rate-level change is significantly lower than the statewide indicated Buildings rate-level change. As such, the indicated Contents rate-level change for each territory is also significantly lower than the corresponding indicated Buildings rate-level change.

In contrast to extended coverage, the statewide indicated rate-level change for fire is 0.5%. Similar to the extended coverage segment, the indicated change by territory varies across the state, but the variation is less significant. Also similar to the extended coverage segment, the indicated rate-level change by territory is further divided by class such that the indicated Contents rate-level changes are lower than the indicated Buildings rate-level changes in each territory. When the indicated rate changes for fire and extended coverage are combined, the total statewide indicated dwelling rate-level change is 44.4% and several territories have a combined rate-level change in excess of 50%.

In order to mitigate the impact of these indicated rate changes on policyholders, the Rate Bureau has filed rates that reflect no change in the dwelling fire rates by territory within each class and caps on the dwelling extended coverage rate changes by territory within each class. The filing caps the rate changes by territory and by class at 25% for extended coverage. This capping results in an overall statewide rate-level change of 18.7% instead of the indicated rate-level change of 44.4%.

In my opinion, the Rate Bureau's selected no change for fire and by-territory cap of 25% for extended coverage are reasonable and are an effective strategy to mitigate the impact of this filing on those territories with the highest indicated rate changes. However, for those territories that are impacted by the cap (i.e., their indicated fire and extended coverage rate changes are greater than 0% or 25%, respectively), it should be noted that the filed rates in those territories will continue to be inadequate.

Q. I understand that you are not providing an opinion concerning the underwriting profit (profit) provision or the net cost of reinsurance (NCOR) provision. If I ask you to assume that the provisions for profit and NCOR are reasonable and actuarially sound, then in your opinion, is the overall rate-level indication shown in the dwelling filing by the North Carolina Rate Bureau reasonable?

A. Yes, if I assume that the provisions for profit and NCOR are reasonable, then in my opinion, the overall dwelling rate-level indication shown by the Rate Bureau, and the rate-level indications for each segment and each class, are reasonable and actuarially sound.

Q. Again, assuming that the provisions for profit and NCOR are reasonable, do you have an opinion whether the proposed rates, as capped in the filing, reasonably provide for the expected costs for dwelling insurance in North Carolina?

A. If I assume that the provisions for profit and NCOR are reasonable, then in my opinion, the proposed rates in this filing reasonably reflect the expected costs for dwelling insurance. However, in those territories where the Rate Bureau has

capped the rates in this filing to mitigate the impact on affected policyholders, the proposed rates do not reflect all expected costs. The expected costs that can be quantified by the difference between a territory's indicated rate change and its capped rate change are not being reflected in the proposed rates.

Q. Assuming that the provisions for profit and NCOR are reasonable, what is your opinion on whether the proposed dwelling rates are not excessive, not inadequate, and not unfairly discriminatory?

A. If I assume that the provisions for profit and NCOR are reasonable, then in my opinion, the proposed dwelling rates in this filing are not excessive or unfairly discriminatory. Similarly, the rates in those territories unaffected by the proposed cap are not inadequate; however, in those territories where the Rate Bureau is proposing to cap the effect of this filing, the proposed rates continue to be inadequate by the difference between the indicated rate change and the capped rate change.

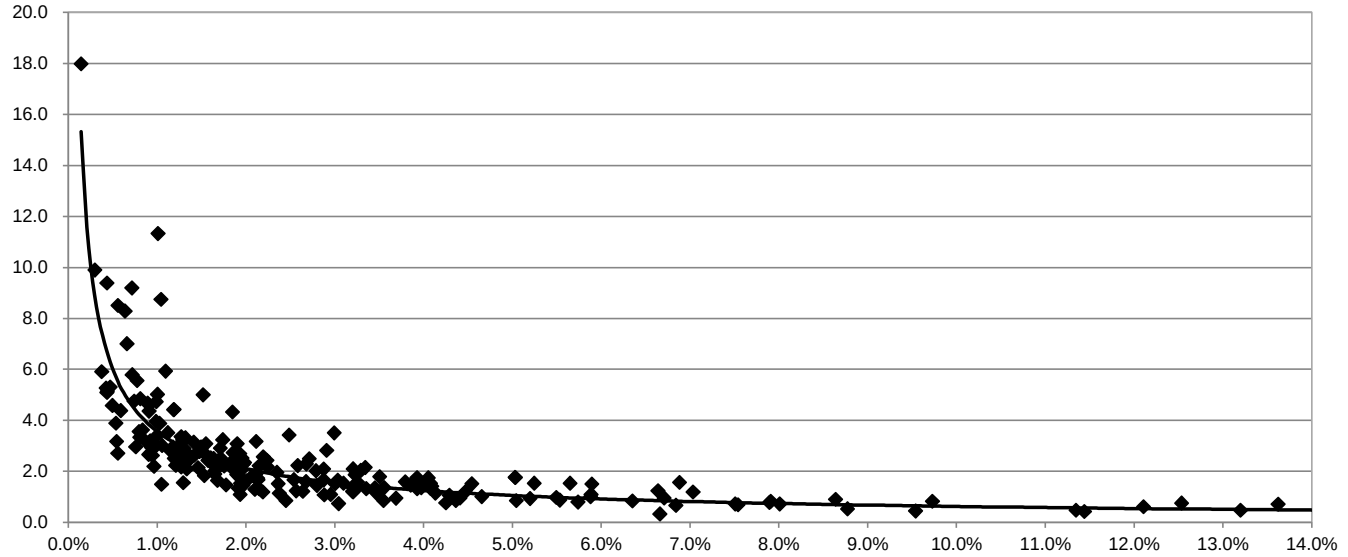
Q. Does this conclude your testimony?

A. Yes, it does.

North Carolina Insurance Underwriting Association (NCIUA) -- Beach Plan
North Carolina Joint Underwriting Association (NCJUA) -- FAIR Plan

Catastrophe Bond Profit Multiples

Adjusted Profit Multiples by Average Probability of Loss



Source: Lane Financial LLC, Annual Securitization Reviews (http://lanefinancialllc.com).

Notes: Based on near-term cat bonds issued from January 2011 to March 2020.
Includes all U.S. bonds with a probability of first loss between 0.05% and 20.0%; excludes bonds with no stated profit multiples.
Profit multiples were adjusted based on the year each bond was issued in order to normalize for different market conditions by year.

Equation of the fitted curve: $y = 0.10982 \times^{-0.75557}$

Equation to determine average Profit Multiple over specific interval: $\text{Avg PM} = \int_a^b 0.10982 \times^{-0.75557} dx / (b-a)$

North Carolina Insurance Underwriting Association (NCIUA) -- Beach Plan

Summary of 2020 Reinsurance Structure

Risk Finance Structure [1]	Attachment Point ($ Millions)	Exhaustion Point ($ Millions)	Coverage
Reinsurance Layer 1	$1,400.0	$1,700.0	100.0%
Reinsurance Layer 2	1,700.0	1,750.0	100.0%
Reinsurance Layer 3	1,750.0	2,250.0	100.0%
Reinsurance Layer 4	2,250.0	2,300.0	100.0%
Reinsurance Layer 5	2,300.0	3,015.0	100.0%

Source: https://www.ncjua-nciua.org/html/mbr_co.htm

Note: The above reinsurance covers aggregate losses for all Beach Plan accounts combined (Residential & Commercial).

(1) Each layer of reinsurance provides Annual Aggregate coverage, which implies that a reinstatement provision is not applicable.

North Carolina Insurance Underwriting Association (NCIUA) -- Beach Plan

Determination of Average Profit Multiple by Layer of Loss
($ in Millions)

Annual Aggregate Layer	Source of Funding	Total Beach Plan Layer Attachment	Total Beach Plan Layer Exhaustion [1]	Attachment Probability	Exhaustion Probability	Indicated Profit Multiple
$0 to 400	Surplus	$0.0	$400.0	46.35%	11.10%	0.31
$400 to 1,400	Company Assessments	400.0	1,400.0	11.10%	3.74%	0.83
$1,400 to 1,700	Reinsurance Layer 1	1,400.0	1,700.0	3.74%	3.01%	1.43
$1,700 to 1,750	Reinsurance Layer 2	1,700.0	1,750.0	3.01%	2.93%	1.57
$1,750 to 2,250	Reinsurance Layer 3	1,750.0	2,250.0	2.93%	2.14%	1.78
$2,250 to 2,300	Reinsurance Layer 4	2,250.0	2,300.0	2.14%	2.07%	2.03
$2,300 to 3,015	Reinsurance Layer 5	2,300.0	3,015.0	2.07%	1.46%	2.34
$3,015 & Higher	Policyholder Surcharges	3,015.0	45,847.5	1.46%	0.0005%	9.41

(1) The Layer Exhaustion for the highest layer was selected to be equal to the largest amount of modeled annual hurricane losses after blending 100,000 years of AIR and RMS modeled losses.

North Carolina Insurance Underwriting Association (NCIUA) -- Beach Plan
Residential Accounts Only

Illustration of How Hurricane Losses are Funded
Voluntary Market Assessments Limited to $1 Billion on All Beach Plan Accounts Combined
($ in Millions)

	Total Beach Plan			Beach Plan:	Hurricane Losses Funded by:			
Annual Aggregate Layer	Layer Attachment	Layer Exhaustion	Total Losses in Layer	Residential Share of Layer	Beach Plan Surplus	Private Reinsurance	Assessments on Member Companies [1]	Policyholder Surcharges
$0 to 400	$0.0	$400.0	$400.0	$348.2	$348.2	-	-	-
$400 to 1,400	400.0	1,400.0	1,000.0	855.2	-	-	$855.2	-
$1,400 to 1,700	1,400.0	1,700.0	300.0	254.9	-	$254.9	-	-
$1,700 to 1,750	1,700.0	1,750.0	50.0	42.5	-	42.5	-	-
$1,750 to 2,250	1,750.0	2,250.0	500.0	425.2	-	425.2	-	-
$2,250 to 2,300	2,250.0	2,300.0	50.0	42.6	-	42.6	-	-
$2,300 to 3,015	2,300.0	3,015.0	715.0	609.6	-	609.6	-	-
$3,015 & Higher	3,015.0	45,847.5	42,832.5	37,116.3	-	-	-	$37,116.3
Total					$348.2	$1,374.7	$855.2	$37,116.3

(1) Total losses paid by Member Companies ($855.2 M) reflects the Residential portion of the $1 Billion Beach Plan assessment on the total Voluntary Market.

North Carolina Insurance Underwriting Association (NCIUA) -- Beach Plan
Residential Accounts Only

Determination of the Cost of Reinsurance Provided to the NCIUA by the Voluntary Market
Voluntary Market Assessments Limited to $1 Billion on All Beach Plan Accounts Combined
($ in Millions)

Annual Aggregate Layer	Beach Plan: Residential Share of Layer	Potential Assessments Paid by Member Companies [1]	Expected Losses [2] Total	Expected Losses [2] Exposed [3]	Indicated Profit Multiple [4]	Cost of Funding Assessments [5]
$0 to 400	$348.2	-	$61.70	-	0.31	-
$400 to 1,400	855.2	$855.2	55.11	$55.11	0.83	$45.74
$1,400 to 1,700	254.9	-	8.72	-	1.43	-
$1,700 to 1,750	42.5	-	1.29	-	1.57	-
$1,750 to 2,250	425.2	-	10.87	-	1.78	-
$2,250 to 2,300	42.6	-	0.92	-	2.03	-
$2,300 to 3,015	609.6	-	10.84	-	2.34	-
$3,015 & Higher	37,116.3	-	36.20	-	9.41	-
Total		$855.2	$185.64	$55.11		$45.74

(1) See Exhibit RB-18, Page 4.
(2) From AIR & RMS hurricane models.
(3) Expected loss subject to Beach Plan assessments of Voluntary Market.
(4) See Exhibit RB-18, Page 3.
(5) = Exposed Expected Losses x Profit Multiple (based on Cat Bond data).

North Carolina Joint Underwriting Association (NCJUA) -- FAIR Plan

Summary of 2020 Reinsurance Structure

Risk Finance Structure [1]	Attachment Point ($ Millions)	Exhaustion Point ($ Millions)	Coverage
Reinsurance Layer 1	$115.0	$260.0	100.0%

Source: https://www.ncjua-nciua.org/html/mbr_co.htm

Notes: The above reinsurance covers aggregate losses for all FAIR Plan accounts combined (Residential & Commercial).

(1) Each layer of reinsurance provides Annual Aggregate coverage, which implies that a reinstatement provision is not applicable.

North Carolina Joint Underwriting Association (NCJUA) -- FAIR Plan

Determination of Average Profit Multiple by Layer of Loss
($ in Millions)

Annual Aggregate Layer	Source of Funding	Total FAIR Plan Layer Attachment	Total FAIR Plan Layer Exhaustion [1]	Attachment Probability	Exhaustion Probability	Indicated Profit Multiple
$0 to 15	Surplus	$0.0	$15.0	45.80%	19.94%	0.26
$15 to 115	Company Assessments	15.0	115.0	19.94%	6.98%	0.53
$115 to 260	Reinsurance	115.0	260.0	6.98%	3.11%	1.09
$260 & Higher	Company Assessments	260.0	6,293.3	3.11%	0.0005%	5.46

(1) The Layer Exhaustion for the highest layer was selected to be equal to the largest amount of modeled annual hurricane losses after blending 100,000 years of AIR and RMS modeled losses.

North Carolina Joint Underwriting Association (NCJUA) -- FAIR Plan
Residential Accounts Only

Illustration of How Hurricane Losses are Funded
Reflecting Unlimited Industry Exposure to FAIR Plan Assessments
($ in Millions)

	Total FAIR Plan			FAIR Plan:	Hurricane Losses Funded by:		
Annual Aggregate Layer	Layer Attachment	Layer Exhaustion	Total Losses in Layer	Residential Share of Layer	FAIR Plan Surplus	Private Reinsurance	Assessments on Member Companies
$0 to 15	$0.0	$15.0	$15.0	$14.5	$14.5	-	-
$15 to 115	15.0	115.0	100.0	96.5	-	-	$96.5
$115 to 260	115.0	260.0	145.0	139.8	-	$139.8	-
$260 & Higher	260.0	6,293.3	6,033.3	5,775.1	-	-	5,775.1
Total					$14.5	$139.8	$5,871.6

North Carolina Joint Underwriting Association (NCJUA) -- FAIR Plan
Residential Accounts Only

Determination of the Cost of Reinsurance Provided to the NCJUA by the Voluntary Market
Reflecting Unlimited Industry Exposure to FAIR Plan Assessments
($ in Millions)

Annual Aggregate Layer	FAIR Plan: Residential Share of Layer	Potential Assessments Paid by Member Companies [1]	Expected Losses [2] Total	Expected Losses [2] Exposed [3]	Indicated Profit Multiple [4]	Cost of Providing Reinsurance [5]
$0 to 15	$14.5	-	$3.63	-	0.26	-
$15 to 115	96.5	$96.5	10.88	$10.88	0.53	$5.76
$115 to 260	139.8	-	6.50	-	1.09	-
$260 & Higher	5,775.1	5,775.1	9.54	9.54	5.46	52.09
Total		$5,871.6	$30.55	$20.42		$57.86

(1) See Exhibit RB-18, Page 8.
(2) From AIR & RMS hurricane models.
(3) Expected loss subject to FAIR Plan assessments of Voluntary Market.
(4) See Exhibit RB-18, Page 7.
(5) = Exposed Expected Losses x Profit Multiple (based on Cat Bond data).

North Carolina Insurance Underwriting Association (NCIUA) -- Beach Plan
North Carolina Joint Underwriting Association (NCJUA) -- FAIR Plan
Residential Accounts Only

Determination of the Compensation for Bearing the Risk of Beach Plan & FAIR Plan Assessments
($ in Millions)

(1) Cost of Reinsurance Provided by the Voluntary Market to the Residential Accounts in the NCIUA (Beach Plan):	$45.74
(2) Cost of Reinsurance Provided by the Voluntary Market to the Residential Accounts in the NCJUA (FAIR Plan):	$57.86
(3) Total Cost of Reinsurance Provided by the Voluntary Market to the Residential Accounts in the NCIUA & NCJUA:	$103.59

	(4)	(5) = (4) / Total (4)	(6) = (3) x (5)	(7) = (6) / (4)
Policy Form	Estimated 2020 Industry Written Premium @ Manual Rates	% of Total Industry Premium	Allocated Compensation for Risk of Assessment	Compensation for Assessment Risk as % of 2020 Manual Premium
Homeowners	$3,034.8	86.3%	$89.45	2.9%
Dwelling Fire & EC	335.4	9.5%	9.89	2.9%
MobileHome	144.5	4.1%	4.26	2.9%
Total	$3,514.6	100.0%	$103.59	2.9%

(1) From Exhibit RB-18, Page 5.
(2) From Exhibit RB-18, Page 9.
(3) = (1) + (2)
(4) 2020 Industry Written Premium includes NCIUA and NCJUA.

NORTH CAROLINA
DWELLING PROPERTY INSURANCE

Development of the Estimated Impact of Delay in Rate Filing Process

NCRB Rate Filing	Policy Type / Coverage	Premium Weight	(1) Assumed Effective Date	(2) Actual Effective Date	(3) Selected Loss Trend	(4) Selected Premium Trend	(5) Estimated Impact of Delay in Filing Process
2019 Dwelling	Fire	$83,923,771	7/1/20	7/1/20	2.0%	1.1%	0.0%
	EC	241,506,295	7/1/20	7/1/20	3.2%	0.8%	0.0%
	Total	$325,430,066					0.0%
2019 MH(C)	Mobile Home Structures	$52,069,226	2/1/20	6/1/20	3.5%	1.6%	0.6%
	Adjacent Structures	4,212,665	2/1/20	6/1/20	4.0%	2.8%	0.4%
	Personal Effects	10,255,303	2/1/20	6/1/20	2.0%	4.1%	-0.7%
	Liability	2,410,058	2/1/20	6/1/20	5.0%	n/a	1.6%
	Total	$68,947,252					0.5%
2019 MH(F)	Owners	$51,661,941	2/1/20	6/1/20	0.7%	-0.5%	0.4%
	Tenants	66,881	2/1/20	6/1/20	2.0%	2.1%	0.0%
	Total	$51,728,822					0.4%
2018 HO	Owners	$2,017,285,314	10/1/19	5/1/20	4.6%	1.0%	2.0%
	Tenants	72,370,871	10/1/19	5/1/20	-3.1%	-1.4%	-1.0%
	Condos	29,047,171	10/1/19	5/1/20	1.9%	0.2%	1.0%
	Total	$2,118,703,356					1.9%
2018 Dwelling	Fire	$102,088,428	6/1/18	2/1/19	0.2%	2.3%	-1.3%
	EC	187,663,877	6/1/18	2/1/19	0.4%	2.1%	-1.1%
	Total	$289,752,305					-1.2%
2017 HO	Owners	$2,010,516,565	6/1/18	10/1/18	3.1%	1.1%	0.7%
	Tenants	62,551,401	6/1/18	10/1/18	-3.1%	-1.0%	-0.7%
	Condos	24,591,783	6/1/18	10/1/18	1.9%	0.5%	0.5%
	Total	$2,097,659,749					0.6%
2014 HO	Owners	$2,257,970,589	7/1/14	6/1/15	5.3%	2.3%	2.7%
	Tenants	45,065,871	7/1/14	6/1/15	2.9%	-1.0%	3.6%
	Condos	22,629,842	7/1/14	6/1/15	5.4%	0.0%	5.0%
	Total	$2,325,666,302					2.7%
2014 MH(C)	Property	$77,349,418	6/1/15	10/1/15	3.0%	2.8%	0.1%
	Liability	1,546,804	6/1/15	10/1/15	2.8%	n/a	0.9%
	Total	$78,896,222					0.1%
2014 MH(F)	Owners	$44,750,216	6/1/15	10/1/15	4.6%	2.2%	0.8%
	Tenants	100,658	6/1/15	10/1/15	2.5%	-0.2%	0.9%
	Total	$44,850,874					0.8%
2012 HO	Owners	$2,168,814,729	6/1/13	7/1/13	5.4%	3.0%	0.2%
	Tenants	32,405,190	6/1/13	7/1/13	4.0%	0.0%	0.3%
	Condos	18,252,996	6/1/13	7/1/13	4.0%	2.0%	0.2%
	Total	$2,219,472,915					0.2%
2011 Dwelling	Fire	$84,664,174	6/1/11	4/1/13	3.6%	2.9%	1.3%
	EC	150,823,062	6/1/11	4/1/13	4.1%	2.8%	2.3%
	Total	$235,487,236					2.0%
2008 HO	Owners	$1,498,766,325	1/1/09	5/1/09	4.4%	3.9%	0.2%
	Tenants	24,074,875	1/1/09	5/1/09	0.2%	2.7%	-0.8%
	Condos	13,213,524	1/1/09	5/1/09	0.2%	2.9%	-0.9%
	Total	$1,536,054,724					0.1%
2008 MH(C)	Property	$76,284,985	10/1/07	12/1/08	7.5%	2.4%	5.9%
	Liability	1,161,840	10/1/07	12/1/08	4.0%	n/a	4.7%
	Total	$77,446,825					5.9%
2008 MH(F)	Owners	$43,659,180	10/1/07	12/1/08	6.6%	5.8%	0.9%
	Tenants	158,638	10/1/07	12/1/08	0.4%	-4.1%	5.5%
	Total	$43,817,818					0.9%
				Average Estimated Impact of Delay in Filing Process:			**1.1%**

(1), (3), (4) From historical NCRB rate filings
(2) From historical NCRB settlement agreements or circulars
(5) = {[1 + (3)] / [1 + (4)]} ^ {[(2) - (1)]/365} - 1

PREFILED TESTIMONY
OF
JAMES H. VANDER WEIDE

2020 DWELLING FIRE AND EXTENDED COVERAGE
INSURANCE RATE FILING
BY THE NORTH CAROLINA RATE BUREAU

Q. WHAT IS YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS?

A. My name is James H. Vander Weide. I am President of Financial Strategy Associates, a firm that provides strategic and financial consulting services to corporate clients. My business address is 3606 Stoneybrook Drive, Durham, North Carolina 27705.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PRIOR ACADEMIC EXPERIENCE.

A. I graduated from Cornell University with a bachelor's degree in economics and then attended Northwestern University where I earned a Ph.D. in Finance. I joined the faculty of the School of Business at Duke University where I was subsequently named Assistant Professor, Associate Professor, Professor, and Research Professor. I have published research in the areas of finance and economics and taught courses in these fields at Duke for more than thirty-five years. I am now retired from my teaching duties at Duke.

I have taught courses in corporate finance, investment management, and management of financial institutions. I also taught a graduate seminar on the theory of public utility pricing and lectured in executive development seminars on

the cost of capital, financial analysis, capital budgeting, mergers and acquisitions, cash management, short-run financial planning, and competitive strategy.

I have served as Program Director and taught in numerous executive education programs at Duke, including the Duke Advanced Management Program, the Duke Management Challenge, the Duke Executive Program in Telecommunications, Competitive Strategies in Telecommunications, and the Duke Program for Manager Development for managers from the former Soviet Union. I have also taught in tailored programs developed for corporations such as ABB, Accenture, Allstate, AT&T, Progress Energy, GlaxoSmithKline, Lafarge, MidAmerican Energy, Norfolk Southern, The Rank Group, Siemens, TRW, and Wolseley PLC.

In addition to my teaching and executive education activities, I have written research papers on such topics as portfolio management, the cost of capital, capital budgeting, the effect of regulation on the performance of public utilities, and cash management. My articles have been published in *American Economic Review, Financial Management, International Journal of Industrial Organization, Journal of Finance, Journal of Financial and Quantitative Analysis, Journal of Bank Research, Journal of Accounting Research, Journal of Cash Management, Management Science, The Journal of Portfolio Management, Atlantic Economic Journal, Journal of Economics and Business,* and *Computers and Operations Research.* I have written a book titled *Managing Corporate Liquidity: an Introduction to Working Capital Management*, a chapter for *The Handbook of*

Modern Finance, "Financial Management in the Short Run," and a chapter for the book, *The Handbook of Portfolio Construction: Contemporary Applications of Markowitz Techniques,* "Principles for Lifetime Portfolio Selection: Lessons from Portfolio Theory."

Q. HAVE YOU PREVIOUSLY PRESENTED EVIDENCE ON THE COST OF CAPITAL AND OTHER REGULATORY ISSUES?

A. Yes. As an expert on financial and economic theory and practice, I have participated in more than five hundred regulatory and legal proceedings before the public service commissions of forty-five states and four Canadian provinces, the Federal Energy Regulatory Commission, the National Energy Board (Canada), the Federal Communications Commission, the Canadian Radio-Television and Telecommunications Commission, the United States Congress, the National Telecommunications and Information Administration, the insurance commissions of five states, the Iowa State Board of Tax Review, the National Association of Securities Dealers, and the North Carolina Property Tax Commission. In addition, I have prepared expert testimony in proceedings before the United States District Court for the District of Nebraska; the United States District Court for the District of New Hampshire; the United States District Court for the District of Northern Illinois; the United States District Court for the Eastern District of North Carolina; the Montana Second Judicial District Court, Silver Bow County; the United States District Court for the Northern District of California; the Superior Court, North Carolina; the United States Bankruptcy Court for the Southern District of West Virginia; the United States District Court

for the Eastern District of Michigan; and the Supreme Court of the State of New York.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I have been asked by the North Carolina Rate Bureau to make an independent appraisal of the aggregate cost of equity capital for the companies writing dwelling fire and extended coverage insurance in North Carolina and to recommend a rate of return on equity that is fair, that allows those companies in the aggregate to attract and retain capital on reasonable terms, that is commensurate with returns on investments of comparable risk, and that maintains the financial integrity of those companies in the aggregate.

Q. WHAT DO YOU MEAN BY THE PHRASE “COST OF EQUITY CAPITAL?”

A. A firm’s cost of equity capital is the rate of return expectation that is required in the marketplace on equity investments of comparable risk. If an investor does not expect to earn a return on an equity investment in a firm that is at least as large as the return the investor could expect to earn on other investments of comparable risk, then the investor will not invest in that firm’s shares. Thus, a firm’s cost of equity capital is also the rate of return expectation that is required in the marketplace in order to induce equity investors to purchase shares in that firm.

Q. IS THE COST OF EQUITY CAPITAL THE SAME AS THE RETURN ON EQUITY?

A. No. The cost of equity capital is a market-based concept that reflects investors' future expectations, while the return on equity is an accounting concept that measures results of past performance. The return on equity is equal to income available for common equity divided by the book value of common equity.

Q. HAVE YOU FORMED AN OPINION REGARDING THE COST OF EQUITY CAPITAL FOR THE AVERAGE COMPANY WRITING DWELLING FIRE AND EXTENDED COVERAGE INSURANCE IN NORTH CAROLINA?

A. Yes.

Q. WHAT IS YOUR OPINION IN THAT REGARD?

A. The cost of equity capital for such a company is in the range 8.0 percent to 10.7 percent.

Q. WHAT ECONOMIC PRINCIPLES DID YOU CONSIDER IN ARRIVING AT THAT OPINION?

A. There are two primary economic principles relevant to my appraisal of the cost of equity capital. The first, relating to the demand for capital, states that a firm should continue to invest in its business only so long as the return on its investment is greater than or equal to its cost of capital. In the context of a regulated firm, this principle suggests that the regulatory agency should establish revenue levels which will offer the firm an opportunity to earn a return on its investment that is at least equal to its cost of capital.

The second principle, relating to the supply of capital, states that rational investors are maximizing their total return on capital only if the returns they expect to receive on investments of comparable risk are equal. If these returns are not equal, rational investors will reduce or completely eliminate investments in those activities yielding lower expected returns for a given level of risk and will increase investments in those activities yielding higher expected returns. The second principle implies that regulated firms will be unable to obtain the capital required to expand service on reasonable terms unless they are able to provide investors returns equal to those expected on investments of comparable risk.

Q. DO THESE ECONOMIC PRINCIPLES APPLY TO THE SETTING OF INSURANCE RATES?

A. Yes. These are general economic principles that apply to investing in any business activity, including insurance.

Q. HOW DID YOU GO ABOUT DETERMINING THE COST OF EQUITY CAPITAL FOR THE AVERAGE COMPANY WRITING DWELLING FIRE AND EXTENDED COVERAGE INSURANCE IN NORTH CAROLINA?

A. I used two generally accepted methods to estimate the cost of equity: (1) the Discounted Cash Flow (DCF) Model, and (2) the Risk Premium Approach.

Q. PLEASE DESCRIBE THE DCF MODEL.

A. The DCF Model suggests that investors value an asset on the basis of the future cash flows they expect to receive from owning the asset. Thus, investors value

an investment in a bond because they expect to receive a sequence of semi-annual coupon payments over the life of the bond and a terminal payment equal to the bond's face value at the time the bond matures. Likewise, investors value an investment in a firm's stock because they expect to receive a sequence of dividend payments and, perhaps, expect to sell the stock at a higher price sometime in the future.

A second fundamental principle of the DCF approach is that investors value a dollar received in the future less than a dollar received today. A future dollar is valued less than a current dollar because investors could invest a current dollar in an interest earning account and increase their wealth. This principle is called the time value of money.

Applying the two fundamental DCF principles noted above to an investment in a bond suggests that investors should value their investment in the bond on the basis of the present value of the bond's future cash flows. Thus, the price of the bond should be equal to:

Equation 1

$$P_B = \frac{C}{(1+i)} + \frac{C}{(1+i)^2} + \ldots + \frac{C+F}{(1+i)^n}$$

where:

P_B	=	Bond price;
C	=	Cash value of the coupon payment (assumed for notational convenience to occur annually rather than semi-annually);
F	=	Face value of the bond;

i	=	The rate of interest the investor could earn by investing his money in an alternative bond of equal risk; and
n	=	The number of periods before the bond matures.

Applying these same principles to an investment in a firm's stock suggests that the price of the stock should be equal to:

Equation 2

$$P_S = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_n + P_n}{(1+k)^n}$$

where:

P_S	=	Current price of the firm's stock;
$D_1, D_{2...}D_n$	=	Expected annual dividend per share on the firm's stock;
P_n	=	Price per share of stock at the time the investor expects to sell the stock; and
k	=	Return the investor expects to earn on alternative investments of the same risk, i.e., the investor's required rate of return.

Equation (2) is frequently called the Annual Discounted Cash Flow (DCF) Model of stock valuation.

Q. HOW DO YOU USE THE DCF MODEL TO DETERMINE THE COST OF EQUITY CAPITAL?

A. The "k" in the equation is the cost of equity capital. We make certain simplifying assumptions regarding the other factors in the equation and then mathematically solve for "k."

Q. WHAT ARE THE ASSUMPTIONS YOU MAKE?

A. Most analysts make three simplifying assumptions. First, they assume that dividends are expected to grow at the constant rate ("g") into the indefinite future. Second, they assume that the stock price at time "n" is simply the present value of all dividends expected in periods subsequent to "n." Third, they assume that the investors' required rate of return, "k," exceeds the expected dividend growth rate, "g."

Q. DOES THE ANNUAL DCF MODEL OF STOCK VALUATION PRODUCE APPROPRIATE ESTIMATES OF A FIRM'S COST OF EQUITY CAPITAL?

A. No. The Annual DCF Model of stock valuation produces appropriate estimates of a firm's cost of equity capital only if the firm pays dividends just once a year. Because most firms pay dividends quarterly, the Annual DCF Model produces downwardly biased estimates of the cost of equity. Investors can expect to earn a higher annual effective return on an investment in a firm that pays quarterly dividends than in one which pays the same amount of dollar dividends once at the end of each year. A complete analysis of the implications of the quarterly payment of dividends on the DCF Model is provided in Exhibit RB-23. For the reasons cited there, I employed the Quarterly DCF Model throughout my calculations.

Q. PLEASE DESCRIBE THE QUARTERLY DCF MODEL YOU USED.

A. The Quarterly DCF Model I use is described by Equation 10 on page 10 in Exhibit RB-23. This equation shows that the cost of equity is equal to the sum of the dividend yield and the growth rate, where the dividend in the dividend yield is

the equivalent dividend at the end of the year, and the growth rate is the expected growth in dividends or earnings per share.

Q. HOW DO YOU APPLY THE DCF APPROACH TO OBTAIN THE COST OF EQUITY CAPITAL FOR THE COMPANIES WRITING DWELLING FIRE AND EXTENDED COVERAGE INSURANCE IN NORTH CAROLINA?

A. I apply the DCF approach to two groups of companies: Value Line's group of property/casualty insurance companies and the S&P 500.

Q. WHY DO YOU APPLY THE DCF APPROACH TO THE S&P 500 AS WELL AS TO VALUE LINE'S PROPERTY/CASUALTY INSURANCE COMPANIES?

A. As I noted previously, the cost of equity is defined as the rate of return investors expect to earn on investments in other companies of comparable risk. I apply the DCF approach to the S&P 500 because they are a large group of companies that, on average, are typically viewed as being comparable in risk to the property/casualty insurance industry. The use of a larger set of comparable risk companies should provide an accurate estimate of the cost of equity for the companies writing dwelling fire and extended coverage insurance in North Carolina.

Q. DO YOU INCLUDE ALL THE VALUE LINE PROPERTY/CASUALTY INSURANCE COMPANIES?

A. No. Among the Value Line property/casualty insurance companies, I only include companies which pay a quarterly dividend, have not lowered their dividends, and

have a positive five-year earnings growth forecast available from I/B/E/S (formerly known as the Institutional Brokers Estimate System, now published by Refinitiv) and Value Line. I use analysts' long-term growth forecasts both from I/B/E/S and Value Line because of the current highly uncertain economic environment associated with the effects of the COVID-19 pandemic. The Value Line property/casualty companies I use are shown in Exhibit RB-21.

Q. ARE INVESTORS AWARE OF THE UNCERTAIN IMPACT OF THE COVID-19 PANDEMIC ON PROPERTY/CASUALTY INSURANCE COMPANY RESULTS?

A. Yes. For example, in its report on Selective Insurance Group, Value Line states:

> Like many of its peers, the recent COVID-19 pandemic has greatly impacted the company's operating fundamentals. In that vein, reserves have been increased to offset the spike in claims from small business liability and workers compensation coverages. Meanwhile, the expense ratio has recorded a considerable uptick, with uncollectible premiums and higher policy cancelations hurting underwriting results. [Value Line Investment Survey, Issue 4, Selective Insurance Group, June 5, 2020]

Q. WHY DO YOU ELIMINATE ANY VALUE LINE PROPERTY/CASUALTY INSURANCE COMPANY WHICH HAS RECENTLY LOWERED ITS DIVIDEND OR WHICH FAILS TO PAY DIVIDENDS?

A. I eliminate those companies because it is difficult to make a reliable estimate of the future dividend growth rate for companies that have recently lowered their dividends or do not pay dividends. If a company has recently lowered its dividend, investors do not know whether the company will again lower its dividend in the future, or whether the company will attempt to increase its dividend back toward its previous level. If a company does not pay a dividend, one cannot mathematically apply the DCF approach.

Q. WHAT CRITERIA DO YOU USE TO SELECT COMPANIES IN THE S&P 500?

A. I include those firms which pay dividends and which have a long-term earnings growth forecast from I/B/E/S. Because I have already calculated DCF results for the Value Line property/casualty insurance companies, I exclude companies in the S&P 500 that are categorized as insurance companies by I/B/E/S Refinitiv. The S&P 500 companies I use are shown in Exhibit RB-22.

Q. HOW DO YOU ESTIMATE THE GROWTH COMPONENT OF THE QUARTERLY DCF MODEL?

A. I use the average of analysts' estimates of future earnings per share (EPS) growth reported by I/B/E/S. (As noted above, in my DCF analysis of the Value Line property/casualty insurance companies, I also use Value Line long-term earnings growth forecasts due to the current highly uncertain economic environment associated with the effects of the COVID-19 pandemic.) As part of their research, financial analysts working at Wall Street firms periodically estimate EPS growth for each firm they follow. The EPS forecasts for each firm are then published. The forecasts are used by investors who are contemplating purchasing or selling shares in individual companies.

Q. WHAT IS I/B/E/S?

A. I/B/E/S is a collection of analysts' forecasts for a broad group of companies expressed in terms of a mean forecast and a standard deviation of forecast for

each firm. The mean forecast is used by investors as an estimate of future firm performance.

Q. WHY DO YOU USE THE I/B/E/S GROWTH ESTIMATES?

A. The I/B/E/S growth rates (1) are widely circulated in the financial community, (2) include the projections of reputable financial analysts who develop estimates of future growth, (3) are reported on a timely basis to investors, and (4) are widely used by institutional and other investors. For these reasons, I believe these estimates represent unbiased estimates of investors' expectations of each firm's long-term growth prospects and, accordingly, are incorporated by investors into their return requirements. Consequently, in my opinion, they provide the best available estimate of investors' long-term growth expectations.

Q. WHY DO YOU RELY EXCLUSIVELY ON ANALYSTS' PROJECTIONS OF FUTURE EPS GROWTH IN ESTIMATING THE INVESTORS' EXPECTED GROWTH RATE RATHER THAN LOOKING AT PAST HISTORICAL GROWTH RATES?

A. There is considerable empirical evidence that analysts' forecasts are more highly correlated with stock prices than are firms' historical growth rates, and, thus, that investors actually use these forecasts.

Q. HAVE YOU PERFORMED ANY STUDIES CONCERNING THE USE OF ANALYSTS' FORECASTS AS THE BEST ESTIMATE OF INVESTORS' EXPECTED GROWTH RATE, G?

A. Yes, I prepared a study with Willard T. Carleton, Professor of Finance Emeritus at the University of Arizona, on why analysts' forecasts provide the best estimate of investors' expectations of future long-term growth. This study is described in a paper entitled "Investor Growth Expectations: Analysts vs. History," published in *The Journal of Portfolio Management*.

Q. PLEASE SUMMARIZE THE RESULTS OF YOUR STUDY.

A. First, we performed a correlation analysis to identify the historically-oriented growth rates which best described a firm's stock price. Then we did a regression study comparing the historical growth rates with the consensus analysts' forecasts. In every case, the regression equations containing the average of analysts' forecasts statistically outperformed the regression equations containing the historical growth estimates. These results are consistent with those found by Cragg and Malkiel, the early major research in this area. These results are also consistent with the hypothesis that investors use analysts' forecasts, rather than historically-oriented growth calculations, in making buy and sell decisions. They provide overwhelming evidence that the analysts' forecasts of future growth are superior to historically-oriented growth measures in predicting a firm's stock price.

Q. WHAT PRICE DO YOU USE IN YOUR DCF MODEL?

A. I use a simple average of the monthly high and low stock prices for each firm for the three-month period, March, April, and May 2020. These high and low stock prices are obtained from Refinitiv.

Q. WHY DO YOU USE THE THREE-MONTH AVERAGE STOCK PRICE, P_0, IN APPLYING THE DCF METHOD?

A. I use a three-month average stock price in applying the DCF method because stock prices fluctuate daily, while financial analysts' forecasts for a given company are generally changed less frequently, often on a quarterly basis. Thus, to match the stock price with an earnings forecast, it is appropriate to average stock prices over a three-month period.

Q. PLEASE EXPLAIN YOUR INCLUSION OF FLOTATION COSTS.

A. All firms that have sold securities in the capital markets have incurred some level of flotation costs, including underwriters' commissions, legal fees, printing expense, etc. These costs are paid from the proceeds of the stock sale and must be recovered over the life of the equity issue. Costs vary depending upon the size of the issue, the type of registration method used and other factors, but in general these costs range between four percent and five percent of the proceeds from the issue. In addition to these costs, the underwriter's offer price is set below the most recent closing price before the public offering in order to reduce the risk that the underwriters will be unable to sell the entire offering at the offer price. The difference between the offer price and the recent closing price is generally in the range two percent to three percent. Thus, the total flotation cost, including both issuance expense and underwriter discount, could range anywhere from five percent to eight percent of the proceeds of an equity issue. These cost ranges have been developed and confirmed in a number of

generally accepted studies. I believe a combined five percent allowance for flotation costs is a conservative estimate that should be used in applying the DCF model in this proceeding.

Q. PLEASE SUMMARIZE THE RESULTS OF YOUR APPLICATION OF THE DCF METHOD TO THE PROPERTY/CASUALTY INSURANCE COMPANIES AND THE S&P 500.

A. As shown in Exhibits RB-21 and RB-22, the average DCF cost of equity capital for my group of Value Line property/casualty companies is 10.7 percent; and for the S&P 500 companies, the average DCF cost of equity is also 10.7 percent.

Q. WHAT CONCLUSION DO YOU REACH FROM YOUR DCF ANALYSIS ABOUT THE COST OF EQUITY CAPITAL FOR COMPANIES WRITING DWELLING FIRE AND EXTENDED COVERAGE INSURANCE IN NORTH CAROLINA?

A. On the basis of my DCF analysis, I would conclude that for companies writing dwelling fire and extended coverage insurance in North Carolina the cost of equity is approximately 10.7 percent.

Q. YOU NOTE THAT THE SECOND METHOD YOU USE TO ESTIMATE THE COST OF EQUITY CAPITAL FOR COMPANIES WRITING DWELLING FIRE AND EXTENDED COVERAGE INSURANCE IN NORTH CAROLINA IS A RISK PREMIUM APPROACH. PLEASE DESCRIBE THAT APPROACH.

A. I perform a study of the comparable returns received by bond and stock investors over the last 94 years. I estimate the returns on stock and bond portfolios, using

stock price and dividend yield data on the S&P 500 stock portfolio and bond yield data on Moody's A–rated utility bonds.

My study consists of analyzing the historically achieved returns on broadly based stock and bond portfolios going back to 1926. For stocks, I use the S&P 500 stock portfolio; and for bonds, I use Moody's A-rated utility bonds. The resulting annual returns on the stock and bond portfolios purchased in each year from 1926 through 2019 are shown on Exhibit RB-24. The difference between the stock return and the bond return over that period of time on an arithmetic average basis is 4.7 percentage points.

Q. WHAT CONCLUSIONS DO YOU DRAW FROM YOUR RISK PREMIUM ANALYSES?

A. My own studies, combined with my analysis of other studies, provide strong evidence for the belief that investors today require an equity return of at least 4.7 percentage points above the expected yield on A-rated long-term debt issues.

The average yield on Moody's seasoned A-rated utility bonds for the three months March through May was 3.3 percent. On the basis of this information and my knowledge of bond market conditions, I conclude that the long-term yield on A-rated utility bonds is approximately 3.3 percent. Adding a 4.7 percentage point risk premium to the 3.3 percent average yield on A-rated utility bonds, I obtain a return on equity of 8.0 percent from my ex post risk premium analysis.

Q. ARE THERE REASONS TO BELIEVE THAT THE RESULT OF YOUR EX POST RISK PREMIUM ANALYSIS MAY UNDERESTIMATE THE COST OF EQUITY AT THIS TIME?

A. Yes. The ex post risk premium model may produce an unrealistically low result because the model result is highly sensitive to the estimate of the bond yield. At this time, bond yields are unusually low, reflecting policy decisions of the United States government and the Federal Reserve Bank to keep interest rates low in order to stimulate the economy. The ex post risk premium cost of equity result is the sum of the risk premium and the bond yield; and, as a result, the use of an unusually low bond yield in the model may cause the ex post risk premium model result to underestimate the cost of equity.

Q. BASED ON YOUR ANALYSES, WHAT IS YOUR OPINION AS TO THE COST OF EQUITY CAPITAL FOR THE AVERAGE INSURANCE COMPANY WRITING DWELLING FIRE AND EXTENDED COVERAGE INSURANCE IN NORTH CAROLINA?

A. Based on my review and studies, I believe that a conservative estimate of the cost of common equity capital for the average insurance company writing dwelling fire and extended coverage insurance in North Carolina is in the range 8.0 percent to 10.7 percent.

SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS FOR PROPERTY/CASUALTY INSURANCE COMPANIES

	COMPANY	MOST RECENT QUARTERLY DIVIDEND (d_0)	STOCK PRICE (P_0)	FORECAST OF FUTURE EARNINGS GROWTH	DCF MODEL RESULT
1	Allstate Corp.	0.540	93.886	4.2%	6.7%
2	Amer. Financial Group	0.450	67.138	6.3%	9.2%
3	Berkley (W.R.)	0.110	54.675	9.5%	10.5%
4	Chubb Ltd.	0.750	114.072	6.6%	9.6%
5	CNA Fin'l	0.370	31.739	7.5%	12.8%
6	Erie Indemnity	0.965	167.285	10.0%	12.7%
7	First American Financial Corp	0.440	46.677	5.9%	10.1%
8	Old Republic	0.200	15.636	11.5%	17.7%
9	RLI Corp.	0.240	77.024	11.4%	12.9%
10	Selective Ins. Group	0.230	49.063	3.7%	5.7%
11	Travelers Cos.	0.820	101.173	5.7%	9.4%
12	Average				10.7%

Note:

d_0 = Latest quarterly dividend.

d_1, d_2, d_3, d_4, = Expected next four quarterly dividends, calculated by multiplying the last four quarterly dividends per Value Line, by the factor (1 + g).

P_0 = Average of the monthly high and low stock prices during the three months ending May 2020 per Refinitiv.

FC = Flotation costs.

g = Forecast of future earnings growth May 2020, average of I/B/E/S and Value Line EPS growth.

k = Cost of equity using the quarterly version of the DCF Model and a five percent allowance for flotation costs as shown by the formula below:

$$k = \frac{d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4}{P_0(1 - FC)} + g$$

SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS FOR S&P 500 COMPANIES

	COMPANY	STOCK PRICE (P_0)	D_0	FORECAST OF FUTURE EARNINGS GROWTH	MODEL RESULT
1	3M	142.31	5.88	1.41%	5.9%
2	ABBOTT LABORATORIES	84.35	1.44	10.28%	12.3%
3	ABBVIE	81.00	4.72	11.50%	18.5%
4	ACCENTURE CLASS A	174.10	3.20	7.37%	9.5%
5	ACTIVISION BLIZZARD	62.88	0.41	22.96%	23.8%
6	ADV.AUTO PARTS	112.48	1.00	7.00%	8.0%
7	AES	12.97	0.57	7.10%	12.1%
8	AFLAC	34.65	1.12	1.88%	5.4%
9	AGILENT TECHS.	76.09	0.72	7.70%	8.8%
10	AIR PRDS.& CHEMS.	213.97	5.36	9.62%	12.5%
11	ALBEMARLE	65.10	1.54	15.00%	17.9%
12	ALLEGION	97.09	1.28	3.56%	5.0%
13	ALLIANCE DATA SYSTEMS	46.29	0.84	5.60%	7.6%
14	ALLIANT ENERGY (XSC)	47.99	1.52	5.30%	8.9%
15	ALTRIA GROUP	38.00	3.36	3.18%	13.1%
16	AMCOR	8.57	0.46	2.57%	8.5%
17	AMER.ELEC.PWR.	81.23	2.80	5.85%	9.7%
18	AMEREN	72.52	1.98	5.90%	9.0%
19	AMERICAN EXPRESS	88.72	1.72	5.99%	8.2%
20	AMERICAN INTL.GP.	27.26	1.28	4.97%	10.3%
21	AMERICAN TOWER	228.67	4.32	16.89%	19.2%
22	AMERIPRISE FINL.	116.57	4.16	11.56%	15.8%
23	AMERISOURCEBERGEN	85.48	1.68	8.23%	10.5%
24	AMGEN	215.76	6.40	5.95%	9.3%
25	ANALOG DEVICES	100.81	2.48	6.95%	9.7%
26	ANTHEM	252.10	3.80	14.33%	16.2%
27	AON CLASS A	180.95	1.76	8.97%	10.1%
28	APPLE	276.36	3.28	11.47%	12.9%
29	APPLIED MATS.	49.77	0.88	19.10%	21.3%
30	ARTHUR J GALLAGHER	84.11	1.80	7.16%	9.6%
31	AT&T	30.52	2.08	2.42%	10.0%
32	ATMOS ENERGY	98.33	2.30	7.15%	9.8%
33	AUTOMATIC DATA PROC.	137.03	3.64	12.20%	15.4%
34	AVERY DENNISON	104.30	2.32	8.55%	11.1%
35	BALL	65.55	0.60	10.32%	11.4%
36	BANK OF AMERICA	23.13	0.72	5.12%	8.6%
37	BANK OF NEW YORK MELLON	34.60	1.24	2.48%	6.4%
38	BAXTER INTL.	84.50	0.98	9.67%	11.0%
39	BECTON DICKINSON	239.58	3.16	7.25%	8.7%
40	BEST BUY	70.09	2.20	7.90%	11.5%
41	BLACKROCK	457.87	14.52	2.39%	5.9%
42	BRISTOL MYERS SQUIBB	58.13	1.80	17.90%	21.8%
43	BROADCOM	247.93	13.00	12.35%	18.7%
44	CAMPBELL SOUP	49.38	1.40	2.75%	5.9%
45	CAPITAL ONE FINL.	60.98	1.60	8.00%	11.0%
46	CARDINAL HEALTH	48.97	1.94	4.73%	9.2%
47	CDW	99.61	1.52	9.10%	10.9%
48	CELANESE	78.35	2.48	4.60%	8.1%
49	CENTURYLINK	10.04	1.00	6.00%	17.6%
50	CERNER	66.27	0.72	14.90%	16.2%
51	CH ROBINSON WWD.	70.00	2.04	10.00%	13.4%

	COMPANY	STOCK PRICE (P_0)	D_0	FORECAST OF FUTURE EARNINGS GROWTH	MODEL RESULT
52	CHEVRON	82.59	5.16	5.50%	12.6%
53	CHURCH & DWIGHT CO.	67.60	0.96	7.90%	9.5%
54	CIGNA	179.02	0.04	12.59%	12.6%
55	CINTAS	214.34	2.55	9.70%	11.1%
56	CISCO SYSTEMS	40.62	1.44	6.18%	10.2%
57	CITIZENS FINANCIAL GROUP	22.10	1.56	5.72%	13.8%
58	CITRIX SYS.	138.19	1.40	6.40%	7.5%
59	CLOROX	190.03	4.24	5.26%	7.8%
60	CME GROUP	178.18	3.40	5.13%	7.3%
61	CMS ENERGY	57.40	1.63	7.29%	10.5%
62	COCA COLA	46.24	1.64	1.86%	5.7%
63	COLGATE-PALM.	68.34	1.76	4.25%	7.1%
64	COMCAST A	36.83	0.92	6.15%	9.0%
65	CONAGRA BRANDS	30.84	0.85	8.68%	11.9%
66	CONCHO RESOURCES	53.10	0.80	5.54%	7.2%
67	CONSOLIDATED EDISON	78.27	3.06	2.65%	6.9%
68	CONSTELLATION BRANDS 'A'	152.18	3.00	7.04%	9.3%
69	CORNING	21.01	0.88	4.80%	9.5%
70	CORTEVA	24.90	0.52	9.81%	12.2%
71	COSTCO WHOLESALE	301.79	2.80	6.48%	7.5%
72	COTY CL.A	5.37	0.50	7.60%	18.6%
73	CSX	62.73	1.04	5.35%	7.2%
74	CVS HEALTH	60.79	2.00	6.05%	9.8%
75	D R HORTON	44.68	0.70	9.90%	11.7%
76	DANAHER	149.46	0.72	10.69%	11.3%
77	DEERE	137.90	3.04	3.07%	5.5%
78	DENTSPLY SIRONA	41.00	0.40	9.82%	11.0%
79	DIAMONDBACK ENERGY	38.19	1.50	12.97%	17.7%
80	DOLLAR GENERAL	165.00	1.44	10.89%	11.9%
81	DOMINION ENERGY	76.17	3.76	4.89%	10.4%
82	DOMINO'S PIZZA	344.91	3.12	11.93%	13.0%
83	DOVER	87.77	1.96	7.20%	9.7%
84	DTE ENERGY	98.44	4.05	5.96%	10.6%
85	DUKE ENERGY	83.08	3.78	4.12%	9.2%
86	DUPONT DE NEMOURS	41.47	1.20	3.96%	7.2%
87	EASTMAN CHEMICAL	55.76	2.64	2.61%	7.8%
88	EATON	78.40	2.92	4.70%	8.9%
89	EBAY	36.20	0.64	9.78%	11.8%
90	ECOLAB	179.53	1.88	7.38%	8.6%
91	EDISON INTL.	56.52	2.55	3.00%	8.0%
92	ELI LILLY	144.16	2.96	12.53%	15.0%
93	EMERSON ELECTRIC	53.55	2.00	1.47%	5.5%
94	ENTERGY	98.06	3.72	5.70%	10.0%
95	EVERGY	57.87	2.02	3.90%	7.8%
96	EVERSOURCE ENERGY	80.89	2.27	5.73%	8.9%
97	EXPEDITOR INTL.OF WASH.	68.21	1.04	4.43%	6.1%
98	EXXON MOBIL	42.61	3.48	10.95%	20.8%
99	FIDELITY NAT.INFO.SVS.	126.28	1.40	12.66%	14.0%
100	FLOWSERVE	27.22	0.80	6.36%	9.7%
101	FMC	84.45	1.76	9.71%	12.1%
102	FORTIVE	57.68	0.28	5.76%	6.3%
103	GARMIN	80.19	2.44	4.87%	8.3%
104	GENERAL DYNAMICS	135.34	4.40	4.80%	8.4%
105	GENERAL MILLS	57.14	1.96	5.92%	9.8%
106	GILEAD SCIENCES	76.94	2.72	1.84%	5.7%
107	GLOBAL PAYMENTS	157.00	0.78	16.32%	16.9%

	COMPANY	STOCK PRICE (P_0)	D_0	FORECAST OF FUTURE EARNINGS GROWTH	MODEL RESULT
108	GLOBE LIFE	74.47	0.75	6.60%	7.7%
109	GOLDMAN SACHS GP.	175.78	5.00	5.37%	8.6%
110	H&R BLOCK	15.71	1.04	10.00%	17.9%
111	HASBRO	67.26	2.72	10.55%	15.3%
112	HERSHEY	135.07	3.09	6.85%	9.4%
113	HEWLETT PACKARD ENTER.	9.93	0.48	4.91%	10.4%
114	HNTGTN.INGALLS INDS.	185.92	4.12	3.81%	6.3%
115	HOME DEPOT	207.94	6.00	7.25%	10.5%
116	HONEYWELL INTL.	135.78	3.60	3.15%	6.1%
117	HORMEL FOODS	46.83	0.93	4.20%	6.4%
118	HP	16.04	0.70	7.56%	12.6%
119	HUMANA	340.53	2.50	12.28%	13.2%
120	HUNT JB TRANSPORT SVS.	97.61	1.08	5.55%	6.8%
121	HUNTINGTON BCSH.	8.92	0.60	4.90%	12.5%
122	IDEX	142.74	2.00	11.50%	13.2%
123	IHS MARKIT	63.25	0.68	11.35%	12.6%
124	ILLINOIS TOOL WORKS	154.17	4.28	3.01%	6.1%
125	INTEL	56.04	1.32	9.07%	11.8%
126	INTERCONTINENTAL EX.	86.70	1.20	8.99%	10.6%
127	INTERNATIONAL BUS.MCHS.	116.54	6.52	3.92%	10.2%
128	INTUIT	254.02	2.12	6.82%	7.8%
129	IRON MOUNTAIN	25.12	2.47	8.00%	19.6%
130	JACOBS ENGR.	79.57	0.76	10.40%	11.5%
131	JOHNSON & JOHNSON	138.66	4.04	4.80%	8.1%
132	JOHNSON CONTROLS INTL.	29.52	1.04	16.29%	20.7%
133	JP MORGAN CHASE & CO.	95.39	3.60	4.99%	9.2%
134	KANSAS CITY SOUTHERN	132.39	1.60	10.24%	11.6%
135	KELLOGG	62.64	2.28	1.78%	5.7%
136	KIMBERLY-CLARK	133.86	4.28	5.48%	9.1%
137	KLA	150.25	3.40	12.07%	14.8%
138	KROGER	32.21	0.64	6.23%	8.5%
139	L3HARRIS TECHNOLOGIES	183.35	3.40	13.23%	15.5%
140	LAM RESEARCH	249.29	4.60	13.76%	16.0%
141	LAMB WESTON HOLDINGS	59.27	0.92	3.40%	5.1%
142	LEIDOS HOLDINGS	94.89	1.36	10.34%	12.0%
143	LINCOLN NATIONAL	32.62	1.60	9.88%	15.7%
144	LINDE	179.78	3.85	10.83%	13.3%
145	LOCKHEED MARTIN	358.34	9.60	8.78%	11.9%
146	LOWE'S COMPANIES	99.02	2.20	16.30%	19.0%
147	MARATHON PETROLEUM	30.36	2.32	1.89%	10.3%
148	MARKETAXESS HOLDINGS	401.77	2.40	16.25%	17.0%
149	MARSH & MCLENNAN	94.52	1.82	5.21%	7.4%
150	MASCO	39.18	0.54	9.00%	10.6%
151	MASTERCARD	266.62	1.60	14.21%	14.9%
152	MAXIM INTEGRATED PRDS.	52.23	1.92	5.22%	9.4%
153	MCDONALDS	172.55	5.00	3.36%	6.5%
154	MCKESSON	136.49	1.64	8.16%	9.5%
155	MEDTRONIC	92.00	2.16	7.46%	10.1%
156	MERCK & COMPANY	77.07	2.44	6.00%	9.6%
157	MICROCHIP TECH.	80.64	1.47	8.90%	11.0%
158	MICROSOFT	166.60	2.04	15.22%	16.7%
159	MONDELEZ INTERNATIONAL CL.A	50.50	1.14	5.89%	8.4%
160	MOODY'S	232.48	2.24	7.70%	8.8%
161	MOSAIC	11.69	0.20	7.00%	8.9%
162	MOTOROLA SOLUTIONS	142.29	2.56	10.32%	12.4%
163	MSCI	302.87	2.72	10.60%	11.6%

	COMPANY	STOCK PRICE (P_0)	D_0	FORECAST OF FUTURE EARNINGS GROWTH	MODEL RESULT
164	NASDAQ	102.71	1.96	7.47%	9.6%
165	NETAPP	41.89	1.92	5.96%	11.2%
166	NEWS 'A'	10.12	0.20	7.17%	9.4%
167	NEWS 'B'	10.12	0.20	7.17%	9.4%
168	NEXTERA ENERGY	233.40	5.60	8.01%	10.8%
169	NIKE 'B'	84.72	0.98	11.73%	13.1%
170	NISOURCE	24.26	0.84	5.25%	9.1%
171	NORFOLK SOUTHERN	160.94	3.76	6.29%	8.9%
172	NORTHERN TRUST	76.52	2.80	2.42%	6.4%
173	NORTHROP GRUMMAN	319.19	5.28	10.51%	12.4%
174	NUCOR	38.05	1.61	3.94%	8.6%
175	NVIDIA	276.05	0.64	13.70%	14.0%
176	OLD DOMINION FGT.LINES	138.41	0.61	7.33%	7.8%
177	OMNICOM GROUP	55.81	2.60	1.40%	6.5%
178	ONEOK	33.55	3.74	0.24%	12.5%
179	ORACLE	49.55	0.96	9.61%	11.9%
180	OTIS WORLDWIDE	47.15	0.80	4.30%	6.2%
181	PACKAGING CORP.OF AM.	90.13	3.16	5.00%	8.9%
182	PARKER-HANNIFIN	148.66	3.52	3.43%	6.0%
183	PAYCHEX	65.56	2.48	3.87%	8.1%
184	PENTAIR	33.30	0.76	5.10%	7.6%
185	PEPSICO	127.50	4.09	4.64%	8.2%
186	PERKINELMER	83.56	0.28	10.80%	11.2%
187	PERRIGO	49.75	0.90	10.00%	12.1%
188	PHILIP MORRIS INTL.	72.53	4.68	4.03%	11.3%
189	PINNACLE WEST CAP.	76.83	3.13	4.86%	9.4%
190	PIONEER NTRL.RES.	83.49	2.20	16.40%	19.7%
191	PNC FINL.SVS.GP.	103.54	4.60	1.84%	6.7%
192	PPG INDUSTRIES	90.09	2.04	5.83%	8.4%
193	PRINCIPAL FINL.GP.	34.35	2.24	6.03%	13.5%
194	PROCTER & GAMBLE	113.44	3.16	7.53%	10.7%
195	PRUDENTIAL FINL.	57.03	4.40	9.00%	18.1%
196	PUB.SER.ENTER.GP.	47.01	1.96	3.70%	8.3%
197	QUANTA SERVICES	33.07	0.20	8.75%	9.4%
198	QUEST DIAGNOSTICS	102.41	2.24	4.32%	6.7%
199	RALPH LAUREN CL.A	77.78	2.75	1.70%	5.5%
200	REGIONS FINL.NEW	10.28	0.62	8.16%	15.2%
201	REPUBLIC SVS.'A'	79.76	1.62	5.68%	8.0%
202	RESMED	151.57	1.56	21.10%	22.4%
203	ROCKWELL AUTOMATION	175.54	4.08	3.10%	5.6%
204	ROPER TECHNOLOGIES	330.70	2.05	5.50%	6.2%
205	ROSS STORES	87.72	1.14	7.38%	8.9%
206	S&P GLOBAL	271.55	2.68	8.30%	9.4%
207	SEAGATE TECH.	48.13	2.60	9.13%	15.5%
208	SEALED AIR	27.45	0.64	3.95%	6.5%
209	SEMPRA EN.	118.86	4.18	4.20%	8.1%
210	SHERWIN-WILLIAMS	497.53	5.36	7.85%	9.1%
211	SKYWORKS SOLUTIONS	96.52	1.76	11.25%	13.4%
212	SMITH (AO)	40.38	0.96	8.00%	10.7%
213	SNAP-ON	121.65	4.32	10.00%	14.2%
214	SOUTHERN	55.22	2.56	4.35%	9.5%
215	STANLEY BLACK & DECKER	110.26	2.76	8.24%	11.1%
216	STARBUCKS	70.64	1.64	4.24%	6.8%
217	STRYKER	173.08	2.30	5.57%	7.1%
218	SYSCO	49.56	1.80	7.40%	11.6%
219	TARGET	106.51	2.64	6.77%	9.6%

	COMPANY	STOCK PRICE (P_0)	D_0	FORECAST OF FUTURE EARNINGS GROWTH	MODEL RESULT
220	TE CONNECTIVITY	70.76	1.92	9.90%	13.1%
221	TECHNIPFMC	8.42	0.52	7.25%	14.4%
222	TELEFLEX	318.33	1.36	11.45%	12.0%
223	TEXAS INSTRUMENTS	108.97	3.60	6.73%	10.5%
224	THERMO FISHER SCIENTIFIC	311.93	0.88	9.99%	10.3%
225	TIFFANY & CO	124.34	2.32	8.12%	10.3%
226	TRACTOR SUPPLY	94.43	1.40	10.23%	12.0%
227	TYSON FOODS 'A'	58.21	1.68	9.40%	12.8%
228	UNION PACIFIC	148.76	3.88	10.20%	13.3%
229	UNITED PARCEL SER.'B'	94.64	4.04	5.60%	10.4%
230	UNITEDHEALTH GROUP	266.47	4.32	12.80%	14.7%
231	UNUM GROUP	16.01	1.14	5.37%	13.5%
232	US BANCORP	35.73	1.68	1.99%	7.1%
233	V F	57.71	1.92	6.00%	9.8%
234	VALERO ENERGY	55.63	3.92	6.00%	14.1%
235	VERISK ANALYTICS CL.A	150.52	1.08	8.79%	9.6%
236	VERIZON COMMUNICATIONS	54.94	2.46	1.90%	6.8%
237	VISA 'A'	171.88	1.20	11.52%	12.3%
238	VULCAN MATERIALS	103.63	1.36	10.41%	11.9%
239	WABTEC	53.22	0.48	6.35%	7.4%
240	WALGREENS BOOTS ALLIANCE	43.49	1.83	2.01%	6.6%
241	WALMART	121.34	2.16	5.50%	7.5%
242	WEC ENERGY GROUP	88.76	2.53	5.90%	9.1%
243	WELLS FARGO & CO	29.73	2.04	5.71%	13.6%
244	WESTERN UNION	19.71	0.90	7.79%	13.1%
245	WILLIAMS	16.68	1.60	1.98%	12.7%
246	WILLIS TOWERS WATSON	180.88	2.72	6.50%	8.2%
247	WW GRAINGER	267.24	5.76	9.50%	12.0%
248	XCEL ENERGY	60.51	1.72	6.00%	9.2%
249	XILINX	82.25	1.52	7.45%	9.6%
250	XYLEM	66.88	1.04	11.31%	13.1%
251	YUM! BRANDS	78.57	1.88	4.59%	7.2%
252	ZIMMER BIOMET HDG.	111.18	0.96	5.55%	6.5%
253	ZOETIS A	122.98	0.80	6.46%	7.2%
254	Average				10.7%

Note: In applying the DCF Model to the S&P 500, I include in the DCF analysis all non-insurance companies in the S&P 500 group which pay a dividend and have an available positive analyst long-term growth estimate.

D_0 = Latest dividend per Refinitiv.
d_0 = Latest quarterly dividend.
P_0 = Average of monthly high and low stock prices March, April, and May 2020 per Refinitiv.
FC = Selling and flotation costs.
g = I/B/E/S forecast of future earnings growth May 2020.
k = Cost of equity using the quarterly version of the DCF Model and a five percent allowance for flotation costs as shown by the formula below:

$$k = \left[\frac{d_0(1+g)^{\frac{1}{4}}}{P_0(1-FC)} + (1+g)^{\frac{1}{4}} \right]^4 - 1$$

THE QUARTERLY DCF MODEL

The simple DCF Model assumes that a firm pays dividends only at the end of each year. Since firms in fact pay dividends quarterly and investors appreciate the time value of money, the annual version of the DCF Model generally underestimates the value investors are willing to place on the firm's expected future dividend stream. In this appendix, we review two alternative formulations of the DCF Model that allow for the quarterly payment of dividends.

When dividends are assumed to be paid annually, the DCF Model suggests that the current price of the firm's stock is given by the expression:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_n + P_n}{(1+k)^n} \quad \textbf{(1)}$$

where

P_0	=	current price per share of the firm's stock,
$D_1, D_2, \ldots, D_n$	=	expected annual dividends per share on the firm's stock,
P_n	=	price per share of stock at the time investors expect to sell the stock, and
k	=	return investors expect to earn on alternative investments of the same risk, i.e., the investors' required rate of return.

Unfortunately, expression (1) is rather difficult to analyze, especially for the purpose of estimating k. Thus, most analysts make a number of simplifying assumptions. First, they assume that dividends are expected to grow at the constant rate g into the indefinite future. Second, they assume that the stock price at time n is simply the present value of all dividends expected in periods subsequent to n. Third, they assume that the investors' required rate of return, k, exceeds the expected dividend growth rate g. Under the above simplifying assumptions, a firm's stock price may be written as the following sum:

$$P_0 = \frac{D_0(1+g)}{(1+k)} + \frac{D_0(1+g)^2}{(1+k)^2} + \frac{D_0(1+g)^3}{(1+k)^3} + \ldots, \qquad (2)$$

where the three dots indicate that the sum continues indefinitely.

As we shall demonstrate shortly, this sum may be simplified to:

$$P_0 = \frac{D_0(1+g)}{(k-g)}$$

First, however, we need to review the very useful concept of a geometric progression.

Geometric Progression

Consider the sequence of numbers 3, 6, 12, 24,…, where each number after the first is obtained by multiplying the preceding number by the factor 2. Obviously, this sequence of numbers may also be expressed as the sequence 3, 3 x 2, 3 x 2^2, 3 x 2^3, … This sequence is an example of a geometric progression.

Definition: A geometric progression is a sequence in which each term after the first is obtained by multiplying some fixed number, called the common ratio, by the preceding term.

A general notation for geometric progressions is: a, the first term, r, the common ratio, and n, the number of terms. Using this notation, any geometric progression may be represented by the sequence:

$$a, ar, ar^2, ar^3, \ldots, ar^{n-1}.$$

In studying the DCF Model, we will find it useful to have an expression for the sum of n terms of a geometric progression. Call this sum S_n. Then

$$S_n = a + ar + \ldots + ar^{n-1} . \qquad \textbf{(3)}$$

However, this expression can be simplified by multiplying both sides of equation (3) by r and then subtracting the new equation from the old. Thus,

$$rS_n = ar + ar^2 + ar^3 + \ldots + ar^n$$

and

$$S_n - rS_n = a - ar^n \quad ,$$

or

$$(1 - r)\, S_n = a\,(1 - r^n) \ .$$

Solving for S_n, we obtain:

$$S_n = \frac{a(1 - r^n)}{(1 - r)} \qquad \textbf{(4)}$$

as a simple expression for the sum of n terms of a geometric progression. Furthermore, if $|r| < 1$, then S_n is finite, and as n approaches infinity, S_n approaches $a \div (1 - r)$. Thus, for a geometric progression with an infinite number of terms and $|r| < 1$, equation (4) becomes:

$$S = \frac{a}{1 - r} \quad \textbf{(5)}$$

Application to DCF Model

Comparing equation (2) with equation (3), we see that the firm's stock price (under the DCF assumption) is the sum of an infinite geometric progression with the first term

$$a = \frac{D_0(1+g)}{(1+k)}$$

and common factor

$$r = \frac{(1+g)}{(1+k)}$$

Applying equation (5) for the sum of such a geometric progression, we obtain

$$S = a \bullet \frac{1}{(1-r)} = \frac{D_0(1+g)}{(1+k)} \bullet \frac{1}{1-\frac{1+g}{1+k}} = \frac{D_0(1+g)}{(1+k)} \bullet \frac{1+k}{k-g} = \frac{D_0(1+g)}{k-g}$$

as we suggested earlier.

Quarterly DCF Model

The Annual DCF Model assumes that dividends grow at an annual rate of g% per year (see Figure 1).

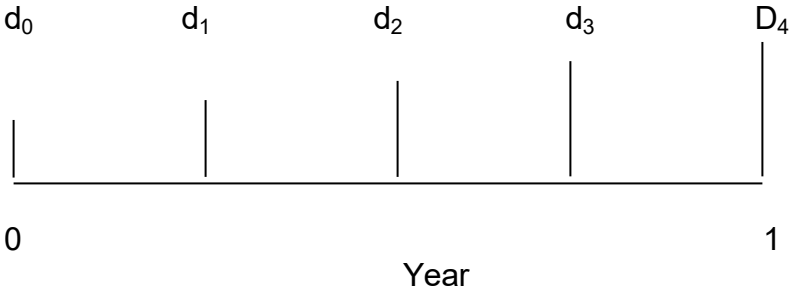
Figure 1

Annual DCF Model

$D_0 = 4d_0$ $D_1 = D_0(1 + g)$

Figure 2

Quarterly DCF Model (Constant Growth Version)



$d_1 = d_0(1+g)^{.25}$ $d_2 = d_0(1+g)^{.50}$

$d_3 = d_0(1+g)^{.75}$ $d_4 = d_0(1+g)$

In the Quarterly DCF Model, it is natural to assume that quarterly dividend payments differ from the preceding quarterly dividend by the factor $(1 + g)^{.25}$, where g is expressed in terms of percent per year and the decimal .25 indicates that the growth has only occurred for one quarter of the year. (See Figure 2.) Using this assumption, along with the assumption of constant growth and ***k*** > ***g***, we obtain a new expression for the firm's stock price, which takes account of the quarterly payment of dividends. This expression is:

$$P_0 = \frac{d_0(1+g)^{\frac{1}{4}}}{(1+k)^{\frac{1}{4}}} + \frac{d_0(1+g)^{\frac{2}{4}}}{(1+k)^{\frac{2}{4}}} + \frac{d_0(1+g)^{\frac{3}{4}}}{(1+k)^{\frac{3}{4}}} + \ldots \qquad \textbf{(6)}$$

where d_0 is the last quarterly dividend payment, rather than the last annual dividend payment. (We use a lowercase d to remind the reader that this is not the annual dividend.)

Although equation (6) looks formidable at first glance, it too can be greatly simplified using the formula [equation (4)] for the sum of an infinite geometric progression. As the reader can easily verify, equation (6) can be simplified to:

$$P_0 = \frac{d_0(1+g)^{\frac{1}{4}}}{(1+k)^{\frac{1}{4}} - (1+g)^{\frac{1}{4}}} \qquad \textbf{(7)}$$

Solving equation (7) for ***k***, we obtain a DCF formula for estimating the cost of equity under the quarterly dividend assumption:

$$k = \left[\frac{d_0(1+g)^{\frac{1}{4}}}{P_0} + (1+g)^{\frac{1}{4}} \right]^4 - 1 \qquad \textbf{(8)}$$

An Alternative Quarterly DCF Model

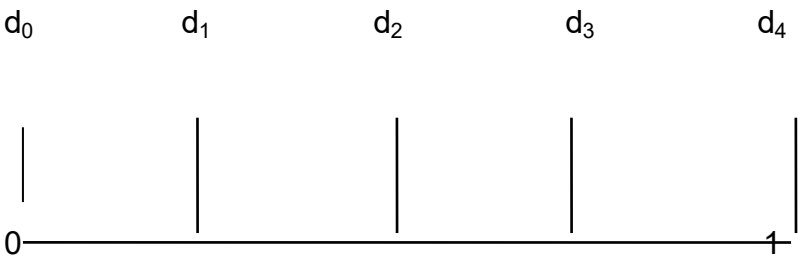
Although the constant growth Quarterly DCF Model [equation (8)] allows for the quarterly timing of dividend payments, it does require the assumption that the firm increases its dividend payments each quarter. Since this assumption is difficult for some analysts to accept, we now discuss a second Quarterly DCF Model that allows for constant quarterly dividend payments within each dividend year.

Assume then that the firm pays dividends quarterly and that each dividend payment is constant for four consecutive quarters. There are four cases to consider, with each case distinguished by varying assumptions about where we are evaluating the firm in relation to the time of its next dividend increase. (See Figure 3.)

Figure 3

Quarterly DCF Model (Constant Dividend Version)

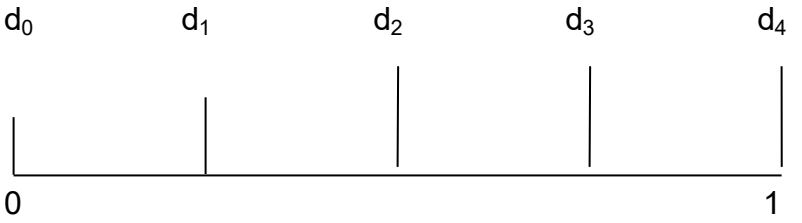
Case 1



Year

$d_1 = d_2 = d_3 = d_4 = d_0(1+g)$

Case 2



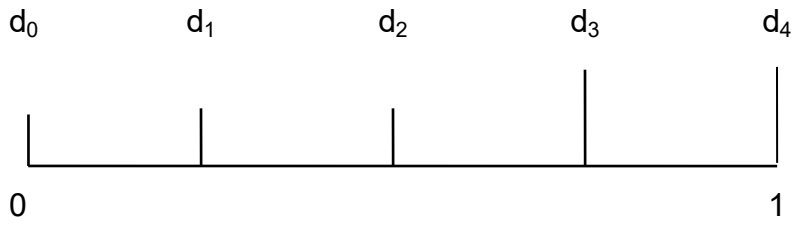
Year

$d_1 = d_0$

$d_2 = d_3 = d_4 = d_0(1+g)$

Figure 3 (continued)

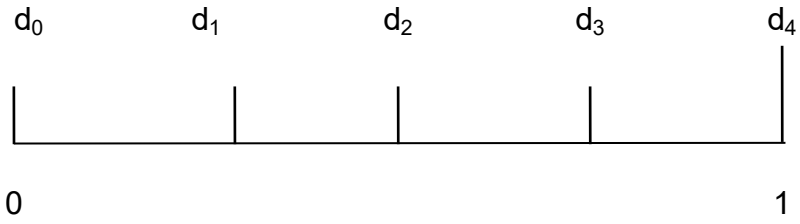
Case 3



$d_1 = d_2 = d_0$

$d_3 = d_4 = d_0(1+g)$

Case 4



$d_1 = d_2 = d_3 = d_0$

$d_4 = d_0(1+g)$

If we assume that the investor invests the quarterly dividend in an alternative investment of the same risk, then the amount accumulated by the end of the year will in all cases be given by

$$D_1^* = d_1 (1+k)^{3/4} + d_2 (1+k)^{1/2} + d_3 (1+k)^{1/4} + d_4$$

where d_1, d_2, d_3 and d_4 are the four quarterly dividends. Under these new assumptions, the firm's stock price may be expressed by an Annual DCF Model of the form (2), with the exception that

$$D_1^* = d_1 (1 + k)^{3/4} + d_2 (1 + k)^{1/2} + d_3 (1 + k)^{1/4} + d_4 \qquad \textbf{(9)}$$

is used in place of $D_0(1+g)$. But we already know that the Annual DCF Model may be reduced to

$$P_0 = \frac{D_0(1+g)}{k-g}$$

Thus, under the assumptions of the second Quarterly DCF Model, the firm's cost of equity is given by

$$k = \frac{D_1^*}{P_0} + g \qquad \textbf{(10)}$$

with D_1^* given by (9).

Although equation (10) looks like the Annual DCF Model, there are at least two very

important practical differences. First, since D_1* is always greater than $D_0(1+g)$, the estimates of the cost of equity are always larger (and more accurate) in the Quarterly Model (10) than in the Annual Model. Second, since D_1* depends on k through equation (9), the unknown "k" appears on both sides of (10), and an iterative procedure is required to solve for k.

COMPARATIVE RETURNS ON S&P 500 STOCKS AND MOODY'S A-RATED UTILITY BONDS 1926-2019

YEAR	S&P 500 STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND PRICE	BOND RATE OF RETURN	RISK PREMIUM
2019	2,607.39	0.0208	27.81%	$94.20	24.64%	3.17%
2018	2,789.80	0.0198	-4.56%	$102.46	-4.16%	-0.40%
2017	2,275.12	0.0209	24.71%	$96.13	10.75%	13.97%
2016	1,918.60	0.0222	20.80%	$95.48	4.87%	15.93%
2015	2,028.18	0.0208	-3.32%	$107.65	-7.59%	4.26%
2014	1,822.36	0.0210	13.39%	$89.89	24.20%	-10.81%
2013	1,481.11	0.0220	25.24%	$97.45	-3.65%	28.89%
2012	1,300.58	0.0214	16.02%	$94.36	7.52%	8.50%
2011	1,282.62	0.0185	3.25%	$77.36	27.14%	-23.89%
2010	1,123.58	0.0203	16.18%	$75.02	8.44%	7.74%
2009	865.58	0.0310	32.91%	$68.43	15.48%	17.43%
2008	1,378.76	0.0206	-35.16%	$72.25	0.24%	-35.40%
2007	1,424.16	0.0181	-1.38%	$72.91	4.59%	-5.97%
2006	1,278.72	0.0183	13.20%	$75.25	2.20%	11.01%
2005	1,181.41	0.0177	10.01%	$74.91	5.80%	4.21%
2004	1,132.52	0.0162	5.94%	$70.87	11.34%	-5.40%
2003	895.84	0.0180	28.22%	$62.26	20.27%	7.95%
2002	1,140.21	0.0138	-20.05%	$57.44	15.35%	-35.40%
2001	1,335.63	0.0116	-13.47%	$56.40	8.93%	-22.40%
2000	1,425.59	0.0118	-5.13%	$52.60	14.82%	-19.95%
1999	1,248.77	0.0130	15.46%	$63.03	-10.20%	25.66%
1998	963.36	0.0162	31.25%	$62.43	7.38%	23.87%
1997	766.22	0.0195	27.68%	$56.62	17.32%	10.36%
1996	614.42	0.0231	27.02%	$60.91	-0.48%	27.49%
1995	465.25	0.0287	34.93%	$50.22	29.26%	5.68%
1994	472.99	0.0269	1.05%	$60.01	-9.65%	10.71%
1993	435.23	0.0288	11.56%	$53.13	20.48%	-8.93%
1992	416.08	0.0290	7.50%	$49.56	15.27%	-7.77%
1991	325.49	0.0382	31.65%	$44.84	19.44%	12.21%
1990	339.97	0.0341	-0.85%	$45.60	7.11%	-7.96%
1989	285.41	0.0364	22.76%	$43.06	15.18%	7.58%
1988	250.48	0.0366	17.61%	$40.10	17.36%	0.25%
1987	264.51	0.0317	-2.13%	$48.92	-9.84%	7.71%
1986	208.19	0.0390	30.95%	$39.98	32.36%	-1.41%
1985	171.61	0.0451	25.83%	$32.57	35.05%	-9.22%
1984	166.39	0.0427	7.41%	$31.49	16.12%	-8.72%
1983	144.27	0.0479	20.12%	$29.41	20.65%	-0.53%
1982	117.28	0.0595	28.96%	$24.48	36.48%	-7.51%
1981	132.97	0.0480	-7.00%	$29.37	-3.01%	-3.99%
1980	110.87	0.0541	25.34%	$34.69	-3.81%	29.16%
1979	99.71	0.0533	16.52%	$43.91	-11.89%	28.41%
1978	90.25	0.0532	15.80%	$49.09	-2.40%	18.20%
1977	103.80	0.0399	-9.06%	$50.95	4.20%	-13.27%

COMPARATIVE RETURNS ON S&P 500 STOCKS AND MOODY'S A-RATED UTILITY BONDS 1926-2019

YEAR	S&P 500 STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND PRICE	BOND RATE OF RETURN	RISK PREMIUM
1976	96.86	0.0380	10.96%	$43.91	25.13%	-14.17%
1975	72.56	0.0507	38.56%	$41.76	14.75%	23.81%
1974	96.11	0.0364	-20.86%	$52.54	-12.91%	-7.96%
1973	118.40	0.0269	-16.14%	$58.51	-3.37%	-12.77%
1972	103.30	0.0296	17.58%	$56.47	10.69%	6.89%
1971	93.49	0.0332	13.81%	$53.93	12.13%	1.69%
1970	90.31	0.0356	7.08%	$50.46	14.81%	-7.73%
1969	102.00	0.0306	-8.40%	$62.43	-12.76%	4.36%
1968	95.04	0.0313	10.45%	$66.97	-0.81%	11.26%
1967	84.45	0.0351	16.05%	$78.69	-9.81%	25.86%
1966	93.32	0.0302	-6.48%	$86.57	-4.48%	-2.00%
1965	86.12	0.0299	11.35%	$91.40	-0.91%	12.26%
1964	76.45	0.0305	15.70%	$92.01	3.68%	12.02%
1963	65.06	0.0331	20.82%	$93.56	2.61%	18.20%
1962	69.07	0.0297	-2.84%	$89.60	8.89%	-11.73%
1961	59.72	0.0328	18.94%	$89.74	4.29%	14.64%
1960	58.03	0.0327	6.18%	$84.36	11.13%	-4.95%
1959	55.62	0.0324	7.57%	$91.55	-3.49%	11.06%
1958	41.12	0.0448	39.74%	$101.22	-5.60%	45.35%
1957	45.43	0.0431	-5.18%	$100.70	4.49%	-9.67%
1956	44.15	0.0424	7.14%	$113.00	-7.35%	14.49%
1955	35.60	0.0438	28.40%	$116.77	0.20%	28.20%
1954	25.46	0.0569	45.52%	$112.79	7.07%	38.45%
1953	26.18	0.0545	2.70%	$114.24	2.24%	0.46%
1952	24.19	0.0582	14.05%	$113.41	4.26%	9.79%
1951	21.21	0.0634	20.39%	$123.44	-4.89%	25.28%
1950	16.88	0.0665	32.30%	$125.08	1.89%	30.41%
1949	15.36	0.0620	16.10%	$119.82	7.72%	8.37%
1948	14.83	0.0571	9.28%	$118.50	4.49%	4.79%
1947	15.21	0.0449	1.99%	$126.02	-2.79%	4.79%
1946	18.02	0.0356	-12.03%	$126.74	2.59%	-14.63%
1945	13.49	0.0460	38.18%	$119.82	9.11%	29.07%
1944	11.85	0.0495	18.79%	$119.82	3.34%	15.45%
1943	10.09	0.0554	22.98%	$118.50	4.49%	18.49%
1942	8.93	0.0788	20.87%	$117.63	4.14%	16.73%
1941	10.55	0.0638	-8.98%	$116.34	4.55%	-13.52%
1940	12.30	0.0458	-9.65%	$112.39	7.08%	-16.73%
1939	12.50	0.0349	1.89%	$105.75	10.05%	-8.16%
1938	11.31	0.0784	18.36%	$99.83	9.94%	8.42%
1937	17.59	0.0434	-31.36%	$103.18	0.63%	-31.99%
1936	13.76	0.0327	31.10%	$96.46	11.12%	19.99%
1935	9.26	0.0424	52.84%	$82.23	22.17%	30.66%
1934	10.54	0.0336	-8.78%	$66.78	29.13%	-37.91%
1933	7.09	0.0542	54.08%	$79.55	-11.03%	65.11%

COMPARATIVE RETURNS ON S&P 500 STOCKS AND MOODY'S A-RATED UTILITY BONDS 1926-2019

YEAR	S&P 500 STOCK PRICE	STOCK DIVIDEND YIELD	STOCK RETURN	A-RATED BOND PRICE	BOND RATE OF RETURN	RISK PREMIUM
1932	8.30	0.0822	-6.36%	$70.67	18.23%	-24.59%
1931	15.98	0.0550	-42.56%	$84.49	-11.63%	-30.93%
1930	21.71	0.0438	-22.01%	$81.19	8.99%	-31.00%
1929	24.86	0.0336	-9.31%	$83.95	1.48%	-10.79%
1928	17.53	0.0431	46.12%	$86.71	1.43%	44.69%
1927	13.40	0.0502	35.84%	$83.28	8.92%	26.92%
1926	12.65	0.0446	10.39%	$80.81	8.01%	2.38%
Average 1926 - 2019			11.6%		6.9%	4.7%

Note: See Page 4 for an explanation concerning the derivation of stock and bond returns and the source of the data presented.

COMPARATIVE RETURNS ON S&P 500 STOCKS
AND MOODY'S A-RATED UTILITY BONDS 1926-2019

RISK PREMIUM APPROACH

SOURCE OF DATA

Stock price and yield information is obtained from Standard & Poor's Security Price publication. Standard & Poor's derives the stock dividend yield by dividing the aggregate cash dividends (based on the latest known annual rate) by the aggregate market value of the stocks in the group. The bond price information is obtained by calculating the present value of a bond due in thirty years with a $4.00 coupon and a yield to maturity of a particular year's indicated Moody's A-rated Utility bond yield. The values shown on the ex post risk premium schedule are the January values of the respective indices.

Calculation of Stock and Bond Returns

Sample calculation of "Stock Return" column:

$$\text{StockReturn}(2019) = \left[\frac{\text{StockPrice}(2020) - \text{StockPrice}(2019) + \text{Dividend}(2019)}{\text{StockPrice}(2019)} \right]$$

99where Dividend (2018) = Stock Price (2018) x Stock Div. Yield (2019)

Sample calculation of "Bond Return" column:

$$\text{Bond Return}(2019) = \left[\frac{\text{Bond Price}(2020) - \text{Bond Price}(2019) + \text{Interest}\ (2019)}{\text{Bond Price}(2019)} \right]$$

where Interest = $4.00.

PREFILED TESTIMONY
OF
GEORGE ZANJANI

DWELLING INSURANCE RATE FILING
NORTH CAROLINA RATE BUREAU
DECEMBER, 2020

I. Qualifications and Summary

Q: What is your name, occupation, and business address?

A: My name is George Zanjani. I am Professor of Finance and the holder of the Frank Park Samford Chair of Insurance at the University of Alabama. My business address is 1074 Alderwood Lane NE, Marietta, Georgia 30068.

Q: Please describe your educational and employment background.

A: A complete curriculum vitae is attached as Exhibit RB-26 with this testimony. To summarize, my undergraduate studies were at Stanford University from 1987-1990, where I earned an A.B./B.S in Economics and Biology. I joined the commercial lines actuarial department of Fireman's Fund Insurance Companies in 1990 as an Assistant Actuarial Analyst. Upon leaving in 1994, I was a Senior Actuarial Analyst, an Associate of the Casualty Actuarial Society, and the head of the company's Workers Compensation actuarial unit. I did my graduate studies in Economics at the University of Chicago, earning a Ph.D. in 2000. I joined the Research Department of the Federal Reserve Bank of New York in the Capital Markets Function as a Research Economist in 2000, leaving as a Senior Economist in 2008. I joined the Robinson College of Business of Georgia State University in 2008 as an Associate Professor of Risk Management and Insurance and was honored as the inaugural holder of the AAMGA Distinguished Chair in Risk Management and Insurance in 2011. I started my current position in 2017.

Q: Please elaborate on some of your professional activities.

A: My professional career has been focused on insurance. After four years of actuarial work in commercial lines insurance, my dissertation addressed the economics of insurance pricing. I specialized on insurance issues while at the Federal Reserve Bank of New York. In particular, I served for the Bank on the Presidential Working Group on Financial Markets during its review of the renewal of the Terrorism Risk Insurance Act in 2006 and on the Committee on the Global Financial System Task Force on Institutional Investors, Global Savings, and Asset Allocation.

My academic service activities include 1) service as referee for various academic journals, 2) service as an associate editor of the *Journal of Insurance Issues*, and 3) (current) service as a senior editor for the *Journal of Risk and Insurance*. In addition, I have served on the Board of the American Risk and Insurance Association and served as President of that association. I have also served as President of the Risk Theory Society. I currently serve on the International Research Advisory Board of National Chengchi University.

As an academic, I continue to write on insurance pricing, participate in academic conferences on insurance, and engage in various sponsored research and consulting activities related to insurance. The latter activities include two research projects on capital allocation sponsored by the Casualty Actuarial Society during the last decade and a project on the financial crisis and the insurance industry sponsored by the Society of Actuaries in 2009. In addition, I have taught various courses at the undergraduate and graduate levels over the past decade, including classes on financial risk management, risk modeling, money and capital markets, and property-casualty insurance.

Q: Have you published any papers or books?

A: Yes. I have published various articles, book chapters, reviews, and white papers on insurance pricing and other aspects of insurance markets. Published or forthcoming work includes articles on insurance topics in the *American Economic Review*, *Insurance: Mathematics and Economics*, the *Journal of Financial Economics*, the *Journal of Public Economics*, the *Journal of Risk and Insurance*, *Management Science,* and the *North American Actuarial Journal* and *Variance.* My co-authors and I have two chapters in the 2013 edition of the Handbook of Insurance, one on capital allocation for insurance companies, and the other on the financial pricing of insurance. Two papers have won awards for their contributions to the field of actuarial science: I received the 2010 ARIA award from the Casualty Actuarial Society and shared the 2015 Charles A. Hachemeister Prize (also from the Casualty Actuarial Society) with a co-author.

Q: Are you a member of any professional organizations?

A: I am a member of the American Economic Association, the American Finance Association, the American Risk and Insurance Association, and the Risk Theory Society. I am also an Associate of the Casualty Actuarial Society. I served on the Board of Directors of the American Risk and Insurance Association from 2007 to 2014 and served as President in 2012-2013. I served as President of the Risk Theory Society in 2012.

Q: Have you ever testified in insurance rate regulatory proceedings?

A: Yes. I have offered testimony for workers compensation insurance rate hearings in Florida (2015 and 2017), Virginia (2016), and Massachusetts (2020). I have also supplied testimony for the North Carolina Rate Bureau's rate filings in various lines since 2019.

Q: What was the nature of your testimony in those previous cases?

A: In these cases, I offered testimony on the underwriting profit factors used in the rates. Specifically, I evaluated the suitability of the methods and assumptions used to develop those factors, as well as whether the rate of return on capital implied by those factors was reasonable.

Q: What is the purpose of your testimony?

A: I was asked by the North Carolina Rate Bureau, as a financial economist with expertise in insurance, 1) to assist the Bureau committee with the underwriting profit factor selection, 2) to determine the expected return on insurance net worth implicit in the filing, and 3) to assess

whether the expected return on net worth constitutes a reasonable rate of return and thus whether the selected underwriting profit factor selection satisfies North Carolina's statutory requirements.

Q: Please summarize the main findings of your testimony.

A: Using a pro forma return model, I analyzed how the selected underwriting profit provisions used in the filing translate into expected returns on net worth. Consistent with previous filings, and with North Carolina law stipulating that the investment income earned on capital and surplus is not to be considered in determining the appropriate rate of return for the insurance industry, I refer to the expected return on net worth without including investment income on capital and surplus as the *statutory return*. When calculating the expected return on net worth including investment income earned on capital and surplus, I refer to the figure as the *total return.* My calculations are detailed in Exhibits RB-27 and RB-28 and are summarized below:

Return Definition	Fire	Extended Coverage
Statutory Return	7.08%	6.86%
Total Return	9.61%	9.33%

I then reviewed Dr. Vander Weide's testimony on the cost of insurance capital and considered other third-party estimates of the cost of insurance capital. I also considered adjustments to those cost of capital estimates that I deemed necessary for the North Carolina Dwelling insurance market. In particular, since non-public companies underwrite a significant portion of the market, I considered the effects of non-public ownership on the cost of equity. Ultimately, I found the expected returns implied by the underwriting profit provisions used in the filing to be reasonable and not excessive. Specifically, the expected returns fall within the range of cost of equity estimates produced by Dr. Vander Weide and others. Moreover, my conclusion is unchanged after adjusting the cost of capital to reflect both 1) the presence of debt financing at insurance holding companies and 2) a market value-to-book value premium at insurance holding companies. My conclusion is also unchanged after adjusting investment yields to fully reflect current market conditions.

II. Expected Return on Net Worth

Q: In general terms, how did you determine the expected return on net worth implied by the underwriting profit provision used in the filing?

A: I used a *pro forma* return model similar to that used in previous filings in North Carolina. The model accounts for underwriting income, installment payment income, investment income on unearned premium and loss/loss adjustment expense (LAE) reserves, and taxes as a percentage of premium. Total after-tax income from these sources (as a percentage of premium) is then related to net worth (as a percentage of premium) to obtain an expected return on net worth.

Q: What do you mean by *pro forma*?

A: The model is *pro forma* in the sense that it assumes 1) that the indicated rate change will be implemented and 2) that all loss, expense, and investment return realizations will coincide with their projected expected values.

The results of the model and supporting information are presented in Exhibits RB-27 and RB-28.

Q: Could you state what you mean by "net worth"?

A: Net worth is the book value of equity of a company under Generally Accepted Accounting Principles (GAAP) rather than Statutory Accounting Principles (SAP).

Q: Did you account for investment income on capital and surplus in calculating the expected return?

A: It is my understanding that North Carolina law provides that insurance rates are to be set such that those rates are expected to provide a return to insurers that is equal to the returns of industries of comparable risk and that, in calculating that expected return, the investment income on capital and surplus is to be excluded from consideration. Therefore, I present the expected return projected to result from the selected underwriting profit provision excluding investment income on capital and surplus. However, for informational purposes, I also present the expected return projected to result from the selected underwriting profit provision including investment income on capital and surplus.

Q: Would you please elaborate on the elements of the return and how they are calculated?

A: The return is composed of underwriting profit (Line 2 of Exhibits RB-27/RB-28, Pages 1 and 1A), installment fee income (Line 3 of Exhibits RB-27/RB-28, Pages 1 and 1A) and investment gain on insurance transaction (Line 7 of Exhibits RB-27/RB-28, Pages 1 and 1A). In the calculation that includes investment income on surplus for informational purposes, I additionally include investment gain on surplus (Line 8 of Exhibits RB-27/RB-28, Page 1A). (Please note that, in my exhibits and sometimes in my testimony, I refer to investment income on surplus as a shorthand reference to investment income on capital and surplus.) All of the foregoing income components are adjusted for taxes. The components are discussed in greater detail below:

Underwriting profit and installment fee income - As a matter of arithmetic and definition, the underwriting profit as a percentage of premium matches the underwriting profit provision selected by the NCRB. It is the percentage of premium left over after accounting for the loss and expense provisions, with the projected loss and LAE ratio and fixed expense (Other Acquisition and General) ratios being adjusted to reflect the indicated rate change. Installment fee income is based on the average installment charges as a percentage of premium over the past five years (Exhibits RB-27/RB-28, Page 3). The underwriting profit income and installment fee income are both assumed to be taxed at the current corporate rate of 21% (Line 4 of Exhibits RB-27/RB-28, Pages 1 and 1A), as revised in the Tax Cut and Jobs Act of 2017. I also account for additional tax liabilities relating to IRS rules regarding the treatment of unearned premium reserves and of loss reserves (Line 5 of Exhibits RB-27/RB-28, Pages 1 and 1A). Details of the calculation of these additional tax liabilities are found on Pages 4 to 6 of Exhibits RB-27/RB-28.

Net Investment Gain on Insurance Transaction – This portion of the return reflects investment income on investible funds generated by the insurance transaction. Specifically, this quantity is estimated as the product of an investment yield and the average loss/LAE and unearned premium reserves that are actually held at the insurance company. An adjustment is made for investment income on agents balances (specifically, to account for the fact that agents balances, which are premiums held by agents and not yet remitted to the company, are not available for investment by the insurance company). For Extended Coverage, where the model contemplates expenditure on reinsurance, I also adjust for investment income on reinsurance balances. Specifically, I account for the additional income that the company receives on funds that have not yet been remitted to the reinsurer, as well as the investment income that the company is not able to collect on funds that have not yet been recovered from the reinsurer. The details of the estimation of investible reserves and the investment income generated from those reserves are found on Pages 7 to 9 of Exhibits RB-27/RB-28. The tax liability is based on a weighted average of estimated tax rates on the different sources of investment income, with the weights based on the composition of the overall property-casualty industry portfolio.

Investment Gain on Surplus – This portion of the return reflects investment income generated from surplus. The investment yield is applied to investible surplus, the amount of which is based on the ten-year average premium-to-surplus ratio for groups writing Dwelling insurance in North Carolina from Page 14 of Exhibits RB-27/RB-28. Separate calculations are performed for Dwelling Fire and for Dwelling Extended Coverage, with the latter ratio calculated on a direct basis to adjust for the contemplation of reinsurance expense. The tax liability is again based on a weighted average of estimated tax rates on the different sources of investment income, with the weights based on the composition of the overall property-casualty industry portfolio.

These components of after-tax return, which are all denominated as a percent of premium, are then summed and related to net worth. This is accomplished by multiplying the returns as percent of premium by the product of the premium-to-surplus ratio from Page 14 of Exhibits RB-27/RB-28 and the inverse of the industry-wide net worth-to-surplus ratio from Page 15 of Exhibits RB-27/RB-28.

Q: Please explain how the investment yield is calculated.

A: My understanding is that the conventional approach in North Carolina, based on a decision by the Commissioner in the 1990's, is to estimate the investment yield as an average of the "embedded yield" based on the industry statutory annual statement reports and a "current yield" based on current market rates. I have followed this convention in my analysis. For the current yield, I start with the overall industry invested asset portfolio and use various sources to estimate the current market yields for those assets. Sources for current market rates, and a summary of the overall calculation, are provided on Page 11 of Exhibits RB-27/RB-28. For each of the bond subcategories, I obtain a maturity distribution for the industry portfolio in that subcategory from the Schedule D summary exhibits and match each maturity level from the exhibits to a corresponding bond yield of similar maturity, so that the average yield shown on Page 11 is a weighted average across maturities according to the industry portfolio. The overall pre-tax current yield on the industry portfolio as thus determined is 2.30%. The embedded yield calculations, based on the actual investment income reported by the industry, are shown on

Pages 12 and 13 of Exhibits RB-27/RB-28; the pre-tax embedded yield is 3.91%. For the pro forma calculations, I average these two figures to obtain 3.10% (shown on Page 10 of Exhibits RB-27/RB-28).

The tax liability for investment income is determined for each asset class, reflecting tax advantages as appropriate on municipal bond interest, preferred and common stock dividends, and capital gains on stock. Most of these rates are taken straight from the tax code for the respective asset class. However, to calculate the tax liability for the expected return on equity on Page 11 of Exhibits RB-27/RB-28, we must split the return between capital gain and dividend components, since each has a different tax rate. We base the split on the experience of the S&P 500 over the 1998-2018 period.

Q: What is the expected return on net worth?

A: To calculate the implied return on insurance company equity, components of after-tax return are summed and related to net worth, which, as a percentage of premium, is calculated based on the product of the premium-to-surplus ratio from Page 14 of Exhibits RB-27/RB-28 and the inverse of the industry-wide net worth-to-surplus ratio from Page 15 of Exhibits RB-27/RB-28. This approach indicates that the selected underwriting profit factor for Fire of 8.5%, if achieved, would yield an expected statutory return on net worth of 7.08% (without including investment income on surplus) and a total return on net worth of 9.61% (when including investment income on surplus). For the 8.5% underwriting profit selected for Extended Coverage, the corresponding return figures are 6.86% and 9.33%.

Q: Have you considered the impact of any other alternative assumptions on your estimates?

A: Yes, I have considered the impact of alternative investment yield calculations.

First, I analyzed whether asset distribution supporting the actual underwriting of Dwelling insurance in North Carolina was reasonably approximated by the overall industry distribution. The models used to estimate the return on net worth in filings in North Carolina rely on the aggregated industry invested asset distribution. I have followed this convention in Exhibits RB-27/28, but I also considered using the premium-weighted asset distribution of carriers underwriting Dwelling insurance in North Carolina. This distribution ended up having a common stock allocation that was about 4 points higher than the overall industry distribution. I then replaced the industry allocation with the allocation specific to North Carolina Dwelling insurance. (For the split of the bond allocation between different categories of bonds and maturities, I relied on the industry distribution.) I found that this switch raised the current portfolio yield from 2.30% to 2.66%. This would increase the statutory return to 7.15% for Fire and 6.93% for Extended Coverage. The total returns would increase to 9.82% for Fire and 9.54% for Extended Coverage.

Second, I investigated the impact of basing the investment yield solely on the current yield. The practice of averaging embedded yields with current yields makes little difference when the yields are relatively close together. But the changes wrought by COVID-19 have opened up a significant divergence between the current yields on investments---which, in many cases, are at all time lows---and embedded yields---which reflect the market conditions of earlier years. The

gap between the two is significant: the pre-tax current yield is 2.66% (when using the the asset distribution specific to North Carolina Dwelling insurance), and the pre-tax embedded yield is 3.91%. If we calculate the returns on net worth using the current yield alone rather than the average, the statutory rate of return drops to 6.86% for Fire and 6.66% for Extended Coverage. The total rate of return drops to 8.96% for Fire and 8.70% for Extended Coverage.

Q: How were the underwriting profit factors determined?

A: The Bureau selected the 8.5% provision for Fire and the 8.5% provision for Extended Coverage. I participated in the Bureau's Property Rating Subcommittee meeting for the discussion of the profit portion of the rate review. I described for the committee my pro forma profit analysis and provided an array of underwriting profit provisions and their associated returns on net worth, both without including investment income on surplus and including investment income on surplus. The returns shown in that array spanned the range for the cost of equity that had been provided by Dr. Vander Weide. Following my presentation and the committee discussion, the committee selected the underwriting profit factors.

III. Rate of Return on Capital

Q: What steps did you take in the course of assessing whether the returns described above would produce a reasonable rate of return on equity?

A: I first reviewed Dr. Vander Weide's testimony. I then compared his results to other independent estimates based on various methodologies. I then made adjustments to both sets of estimates to account for the particular ownership structures that prevail in the North Carolina market. Finally, I compared the estimated statutory and total return on net worth determined in Section II above to these adjusted cost of equity estimates.

Q: What was the nature of Dr. Vander Weide's analysis?

A: The cost of equity for an industry is a difficult figure to pin down, and Dr. Vander Weide uses two approaches to estimate it. The first is a discounted cash flow (DCF) model, which estimates the cost of equity under the assumption that the current equity price is a discounted present value of future dividend cash flows. The critical input to this calculation is the dividend growth rate estimate, which he bases on analyst forecasts. His final estimates under this approach are 10.7%, which he obtains when restricting his attention to property-casualty firms specifically, and 10.7% when using the S&P 500, which he views as having generally similar risk characteristics as the property-casualty industry. The second approach is a risk premium approach, which estimates the current cost of equity as a current bond yield plus a spread, or risk premium. This analysis, which again uses the S&P 500 for purposes of estimating the risk premium, produces an estimate of 8.0%.

Q: How do Dr. Vander Weide's estimates compare with other estimates of the cost of equity for the industry?

A: The two methods employed by Dr. Vander Weide---the DCF and the risk premium method---are perhaps the two most widely accepted and widely deployed methods for estimating the cost of equity. However, there is substantial variation in implementation of these methods, which can

have significant effects on the estimates. For example, the DCF/dividend growth model is sometimes estimated with different time period stages, with time-varying growth rates. There is also substantial methodological variation in implementation of the risk premium method---differences in averaging techniques, differences in the sample period used to estimate the risk premium, differences in the choice of the reference bond yield, differences in the methods used to estimate the relative risk of the industry of interest, and so forth. To get a sense of the import of these differences, I reviewed some additional third-party estimates of the cost of equity for the property-casualty industry, particularly those from Damodaran Online (an open-access website maintained by Aswath Damodaran, a valuation expert affiliated with New York University) and Duff & Phelps (a consultancy that took over the pioneering Ibbotson Cost of Capital franchise). The most recent estimates from Damodaran Online (January 2020) and Duff & Phelps (June 30, 2020 edition of *U.S. Industry Benchmarking*, for the SIC Code Composite) are listed along with Dr. Vander Weide's estimates in the table below.

Property-Casualty Industry Cost of Equity Estimates

Source	Method	Estimate
James Vander Weide	Risk Premium	8.0%
Duff & Phelps	Risk Premium (CAPM)	7.0%
Damodaran Online	Risk Premium (CAPM)	5.5%
Duff & Phelps	Risk Premium (CAPM + Size Premium)	7.5%
Duff & Phelps	Risk Premium (Fama-French)	7.3%
James Vander Weide	DCF	10.7%
Duff & Phelps	DCF (1-stage)	6.1%
Duff & Phelps	DCF (3-stage)	11.8%

As can be seen from the table, Dr. Vander Weide's estimates are comparable to other estimates for the industry produced using various methods.

Q: In the table, you also listed additional cost of equity estimates from Duff & Phelps. Can you explain these methods and their relevance to this filing?

A: Yes. While the CAPM and DCF methods are the basic models and are widely used, various extensions have gained acceptance over the years because of the need to draw finer distinctions among industries and firms when calculating the cost of equity. In particular, the "CAPM + size premium" recognizes the higher cost of capital endured by smaller firms and thus corrects for the average size of firms within an industry. The Fama-French-5-factor model extends the single risk factor framework of the CAPM to a five factor risk framework, thus pricing an industry's equity on the basis of its sensitivity to four additional factors in addition to overall market returns. These methods can produce higher estimates for the cost of equity in the property-casualty industry than the single factor risk premium model approaches. They provide additional perspective on the cost of equity.

Q: Do you believe any adjustments are necessary to the estimated cost of equity in the context of this filing?

A: Yes. All of the foregoing estimates are based on the data of publicly traded companies, which have the easiest access to financing and thus the lowest costs of capital. However, I found that operating companies affiliated with publicly traded holding companies wrote only 23% of the 2019 direct premiums written for North Carolina Dwelling insurance. The remaining 77% was underwritten by companies associated with private, often mutual, ownership---a segment well-known to have more difficulty in accessing the capital markets. The industry average cost of equity needs to be adjusted upward to account for this non-public ownership.

Q: How much higher is the cost of equity for non-public firms?

A: Research dating back at least as far as the 1960's has demonstrated that private equity trades at a substantial discount to public equity. The discount is thought to derive from a variety of factors, including the illiquid nature of private equity stakes (also known as a "lack of marketability") as well as information, monitoring, and control issues. The discount translates into a higher cost of equity. For example, if a public firm's cost of equity is estimated at 10% and the equity of a comparable private firm is selling at a 20% discount to that of the public firm, the private firm's cost of equity would be estimated as:

$$12.5\% = 10\% / (1 - 20\%)$$

The discount is difficult to estimate. Exhibit RB-29 summarizes some of the academic research on the private firm discount. Studies have taken a variety of approaches to measurement. "IPO" studies compare the prices of pre-IPO share transactions in a private company with post-IPO share prices after the company is public. "Acquisition" studies compare the valuations of acquired private companies versus the valuations of acquired public companies. "Restricted stock" and "private placement" studies compare the prices of restricted stock issued by public companies with the prices of their traded shares.

All the approaches have their flaws. IPO studies, for example, are thought to have a bias toward overstating the discount because of the differences in timing of transactions. Restricted stock and private placement studies tend to understate the discount: Since they confine their attention to public companies, they do not account for factors other than the discount for lack of marketability (DLOM), and, moreover, the actual restrictions on marketability for private placements have been loosened significantly over the years by the Securities and Exchange Commission.

On balance, however, the studies point to a substantial discount. For purposes of this testimony, I use a discount of 25%, which is slightly below the average of the averages of the three groups in Exhibit RB-29 (when taking the midpoint of the ranges for the studies with ranges of estimates).

Q: How would this affect the estimated cost of equity for the industry?

A: Assuming a 25% private company discount and a 77% market share for non-public companies, I calculate adjusted estimates of the private cost of equity and the public cost of equity:

$$77\% * \left(\frac{COE}{(1-0.25)}\right) + (23\%) * (COE),$$

where COE is the estimated cost of equity for public companies. The adjusted estimates are as follows :

Cost of Equity Estimates, Adjusted for Non-Public Ownership

Source	Method	Adjusted Estimate
James Vander Weide	Risk Premium	10.1%
Duff & Phelps	Risk Premium (CAPM)	8.8%
Damodaran Online	Risk Premium (CAPM)	6.8%
Duff & Phelps	Risk Premium (CAPM + Size Premium)	9.4%
Duff & Phelps	Risk Premium (Fama-French)	9.2%
James Vander Weide	DCF	13.4%
Duff & Phelps	DCF (1-stage)	7.7%
Duff & Phelps	DCF (3-stage)	14.8%

Q: How do these figures speak to the issue of whether or not the pro forma expected return on net worth is reasonable?

A: There are at least two schools of thought on this issue.

The first is that the "net worth" in the pro forma return exhibit should be interpreted as an equity investment akin to the equity analyzed by Dr. Vander Weide and others. Thus, it should be entitled to a similar rate of return. Under this school of thought, the return on net worth calculated in the previous section should be compared directly with the figures in the table above. If one does this, the projected returns are, in my opinion, clearly not excessive, even when including investment income on surplus in the calculation of the return. The projected total returns of 9.61% (for Fire) and 9.33% (for Extended Coverage) fall toward the lower end of the span of estimates above, which range from 6.8% to 14.8%. If one instead focuses on the statutory return by excluding investment income on surplus, the projected returns for both coverages are close to the lowest available estimate for the cost of equity.

A second school of thought is that, although the capital of the operating subsidiaries may be fully financed by equity, one should "look through" the operating subsidiaries to the level of the holding companies to determine a cost of capital, which is important because the holding companies---unlike the insurance subsidiaries---typically hold some debt in the capital structure. Holding companies that are typically classified as property-casualty companies have, in recent history and on average, had in the neighborhood of 20% debt. Thus, the cost of capital for the holding company is, under this school of thought, calculated as a weighted average of the cost of equity and the cost of debt, with the weights based on each component's share of the capital structure. The result is a weighted average cost of capital (WACC), which is typically lower than the cost of equity as a reflection of the lower cost of debt. On the other hand, another consideration is that the market value of the capital of the holding company will be different than the book value of the capital invested in the insurance subsidiaries. Thus, a particular return on net worth at the level of the operating subsidiary will translate into a lower (higher)

return on holding company capital if the market value of the holding company capital exceeds (is less than) the net worth of the insurance subsidiaries.

The following table shows the most current WACC estimates for the property-casualty industry from Damodaran Online and Duff & Phelps, after adjusting the cost of equity for non-public ownership as described above. It also shows the required return on operating company net worth under different assumptions about the ratio of holding company equity market capitalization to holding company net worth and under the assumption of 20% debt (trading at par) in the capital structure. For example, the required return on operating company net worth for a WACC estimate of 10.0% and a Market-to-Net Worth Ratio of 1.2, would be:

$$10\% * (1.2 * 80\% + 20\%) = 11.6\%$$

Note that the WACC estimates vary, due not only to the previously described differences in estimating the cost of equity, but also due to different estimates for the cost of debt and for the share of debt in the capital structure.

Property-Casualty WACC Estimates, Adjusted for Non-Public Ownership

Source	Method	Adjusted WACC Estimate	Required Return on Net Worth, Assuming Market-to-Net Worth Ratio of:		
			1	1.2	1.4
Duff & Phelps	Risk Premium (CAPM)	7.9%	7.9%	9.2%	10.4%
Damodaran Online	Risk Premium (CAPM)	5.8%	5.8%	6.8%	7.7%
Duff & Phelps	DCF (1-stage)	6.9%	6.9%	8.0%	9.1%
Duff & Phelps	DCF (3-stage)	12.8%	12.8%	14.9%	16.9%
Duff & Phelps	CAPM + Size Premium	8.4%	8.4%	9.7%	11.1%
Duff & Phelps	Fama-French	8.2%	8.2%	9.5%	10.8%

At current stock market valuations, the market-to-net worth ratio of the public companies underwriting Dwelling insurance in North Carolina is typically well above 1. However, even if one sets this ratio to 1, both the statutory and total returns fall comfortably within the range of estimates in the table above. The same conclusion applies when considering return estimates based on alternative yield calculations using current investment market conditions and an asset distribution matched to that supporting Dwelling insurance in North Carolina.

In summary, the expected return on net worth calculated in Section II is, in my opinion, consistent with a reasonable and not excessive return on invested capital.

IV. Conclusion

Q: Based on your knowledge and experience and on the studies and analyses you have performed, have you come to any conclusions regarding the underwriting profit factor selected by the Bureau and used in its indicated rate level calculations in this filing?

A: Yes. For Dwelling Fire, based on my pro forma return analysis, I found that the expected statutory return on net worth implied by the selected 8.5% underwriting profit factor was 7.08% (not including investment income on surplus): The expected total return on net worth was 9.61% (including investment income on surplus). For Dwelling Extended Coverage, based on my pro forma return analysis, I found that the expected statutory return on net worth implied by the selected 8.5% underwriting profit factor was 6.86% (not including investment income on surplus): The expected total return on net worth was 9.33% (including investment income on surplus). If one adjusts the returns to account for the investment yields currently available in the market and the asset distribution supporting the North Carolina Dwelling market specifically, the statutory return estimates fall by about 20 basis points, and the total return estimates fall by about 60 basis points.

After reviewing and analyzing the cost of capital estimates for the industry produced by Dr. Vander Weide and others, I found the expected returns on net worth resulting from the selected underwriting profit factors to be consistent with a reasonable and not excessive return on invested capital. Thus, I believe that the selected underwriting profit factors are reasonable and not excessive.

An important caveat to this analysis, however, is that all conclusions are predicated on the assumption that the underlying rate level reflects adequate loss and expense costs. In this filing, the Bureau elected to cap the requested rate level changes in certain territories. Therefore, if the original indications reflect the best actuarial estimates of the underlying costs and thus the required rate levels, capping reduces the expected underwriting profit below 8.5%, and the returns on net worth would also fall. Thus, explicitly accounting for the capping would obviously reinforce the conclusion that the implied expected underwriting profit embedded in the rate is not excessive.

George Zanjani

University of Alabama
The Culverhouse College of Business
Department of Economics, Finance, & Legal Studies
200 Alston Hall
Box 870224
Tuscaloosa, AL 35487

Mobile: 917-863-9332
Email: george.zanjani@gmail.com

Education

Ph.D., Economics, University of Chicago, 2000
ACAS, Casualty Actuarial Society, 1994
A.B. / B.S., Economics and Biology, Stanford University, 1990

Work Experience

University of Alabama (Tuscaloosa, Alabama)
Professor of Finance and Frank Park Samford Chair of Insurance, 2017-

Georgia State University (Atlanta, Georgia)
AAMGA Distinguished Chair in Risk Management & Insurance, 2011-2017
Associate Professor, 2008-2017

Nanyang Technological University (Singapore)
Visiting Senior Research Fellow, 2011-12, 2013-2014

Federal Reserve Bank of New York (New York, New York)
Senior Economist, 2006-2008
Economist, 2000-2006

Fireman's Fund Insurance Companies (Novato, California)
Senior Actuarial Analyst, 1993-94
Actuarial Analyst, 1991-1993
Assistant Actuarial Analyst, 1990-1991

Publications: Refereed Scholarly

"Capital Allocation Techniques: Review and Comparison," (with Daniel Bauer and Qiheng Guo), ***Variance***, forthcoming

"Dynamic Capital Allocation with Irreversible Investments," (with Daniel Bauer, Shinichi Kamiya, and Xiaohu Ping), ***Insurance: Mathematics and Economics*** 85: 138-52, (2019)

"What Drives Tort Reform Legislation? Economics and Politics of the State Decisions to Restrict Liability Torts," (with Yiling Deng), ***Journal of Risk & Insurance*** 85: 959-991, (2018)

"Egalitarian Equivalent Capital Allocation," (with Shinichi Kamiya), ***North American Actuarial Journal*** 21: 382-96, (2017)

"The Marginal Cost of Risk, Risk Measures, and Capital Allocation," (with Daniel Bauer), ***Management Science*** 62: 1431-1457 (2016)

"Economic Analysis of Risk and Uncertainty Induced by Health Shocks: A Review and Extension," (with Tomas J. Philipson), in *Handbook of the Economics of Risk and Uncertainty*, Volume 1, Mark J. Machina and W. Kip Viscusi (eds.), North Holland: Elsevier (2014)

"Capital Allocation and Its Discontents," (with Daniel Bauer), in *Handbook of Insurance* (2nd edition), Georges Dionne (ed.), New York: Springer (2013)

"Financial Pricing of Insurance," (with Daniel Bauer and Richard D. Phillips), in *Handbook of Insurance* (2nd edition), Georges Dionne (ed.), New York: Springer (2013)

"Insurance Risk, Risk Measures, and Capital Allocation: Navigating a Copernican Shift," (with Michael R. Powers), ***Annual Review of Financial Economics*** 5: 201-223 (2013)

"Catastrophe Bonds, Reinsurance, and the Optimal Collateralization of Risk Transfer," (with Darius Lakdawalla), ***Journal of Risk & Insurance*** 79, pp. 449-76 (2012)

"An Economic Approach to Capital Allocation," ***Journal of Risk and Insurance*** 77, pp. 523-549 (2010) [Winner of Casualty Actuarial Society ARIA Award, 2010]

"Federal Financial Exposure to Catastrophic Risk," (with J. David Cummins and Michael Suher), in *Measuring and Managing Federal Financial Risk,* Deborah Lucas (ed.), Chicago: University of Chicago Press (2010)

"Public versus Private Underwriting of Catastrophe Risk: Lessons from the California Earthquake Authority," in *Risking House and Home: Disasters, Cities, Public Policy,* John M. Quigley and Larry A. Rosenthal (eds.), Berkeley: Berkeley Public Policy Press (2008)

"Regulation, Capital, and the Evolution of Organizational Form in U.S. Life Insurance," ***American Economic Review*** 97, pp. 973-983 (2007)

"Insurance, Self Protection, and the Economics of Terrorism," (with Darius Lakdawalla), ***Journal of Public Economics*** 89, pp. 1891-1905 (2005)

"Terrorism Insurance Policy and the Public Good," (with Darius Lakdawalla), ***St. John's Journal of Legal Commentary*** 18, pp. 463-469 (2004)

"The Production and Regulation of Health Insurance: Limiting Opportunism in Proprietary and Non-Proprietary Organizations," (with Tomas Philipson) in *Individual Decisions for Health*, Bjorn Lindgren (ed.), pp. 194-206, Routledge International Studies in Health Economics, Routledge: London (2003)

"Pricing and Capital Allocation in Catastrophe Insurance," ***Journal of Financial Economics*** 65, pp. 283-305 (2002) [reprinted in *Insurance and Risk Management Volume I: Economics of Insurance Markets*, Gregory Niehaus (ed.), Northampton: Edward Elgar Publishing, (2008)]

Publications: Professional/Practitioner

Book review of "Moral Hazard in Health Insurance," *Journal of Economic Literature* 53, pp. 682-3 (2015)

"Microinsurance Lessons from History," (with Rick Koven), *Microinsurance Learning and Knowledge (MILK)* (2013)

"Institutional Investors and Asset Allocations: Accounting and Regulation of Private Defined Benefit Pension Plans and Other Institutional Investors in the United States, Mexico, and Australia," (with John Broadbent, Michael Palumbo, and Julio Santaella), *CGFS Publication No. 27*, *Working Group on Institutional Investors, Global Savings, and Asset Allocation* (2006)

"An Overview of Political Risk Insurance" (with Kausar Hamdani and Elise Liebers), *CGFS Publication No. 22, Working Group on Foreign Direct Investment in the Financial Sector of Emerging Market Economies* (2005)

Work in Progress

"Life Insurance and Annuity Pricing During the Financial Crisis, Revisited," (with Daniel Bauer, Lars Powell, and Boheng Su), working paper, 2020.

"Market Discipline and Guaranty Funds in Life Insurance," (with Martin Grace, Shinichi Kamiya, and Robert W. Klein), working paper, 2019

"The Effect of Government Guarantees on Market Discipline in the Property-Casualty Insurance Industry," (with Yiling Deng and Ty Leverty), working paper, 2019

"The Marginal Cost of Risk in a Multi-Period Model," (with Daniel Bauer), working paper, 2019. [Winner of Casualty Actuarial Society Hachemeister Prize, 2015]

"An Integrated Approach to Measuring Asset and Liability Risks in Financial Institutions," (with Daniel Bauer), working paper, 2019

"Optimal Insurance Contracts with Insurer Background Risk," (with Xiaohu Ping), working paper, 2015

"The Effect of Banking Crises: Evidence from Non-Life Insurance Consumption," (with Shinichi Kamiya and Jackie Li), working paper, 2015

"Bankruptcy in the Core and Periphery of Financial Groups: The Case of the Property-Casualty Insurance Industry" working paper, 2010

"The Rise and Fall of the Fraternal Life Insurer: Law and Organizational Form in U.S. Life Insurance, 1870-1920," working paper, (*revise and resubmit, Journal of Law & Economics),* 2007

"Organizational Form and the Underwriting Cycle: Theory with Evidence from the Pennsylvania Fire Insurance Market, 1873-1909," working paper, 2004

"Consumption versus Production of Insurance," (with Tomas Philipson), *NBER Working Paper #6225,* 1997

External Research Projects and Consulting

2020	Expert Witness, Workers' Compensation Rate Filing, North Carolina
2019	NCCI Review of Cost of Capital Methodology
2019	Expert Witness, Workers' Compensation Rate Filing, Massachusetts
2019	Expert Witness, Flood Rate Filing, North Carolina
2019	Expert Witness, Workers' Compensation Rate Filing, North Carolina
2019	Expert Witness, Dwelling Rate Filings, North Carolina
2019	Expert Witness, Automobile Rate Filing, North Carolina
2019	Expert Witness, Mobile Homeowners Rate Filings, North Carolina
2018	NCCI Review of TCJA
2017	Expert Witness, Workers' Compensation Rate Hearing, Florida
2016	Expert Witness, Assigned Risk Workers' Compensation Rate Hearing, Virginia
2015	Expert Witness, Workers' Compensation Rate Hearing, Florida
2015	NCCI Revision of Underwriting Profit and Contingency Internal Rate of Return Model
2015	An Extension of the Project on the Costs of Holding Capital, sponsored by the CAS
2013	Microinsurance Centre Lessons from History Project
2012	Allocation of the Costs of Holding Capital, sponsored by the CAS,
2011	CRO Risk Index Project, co-sponsored by SOA and Bloomberg, co-founder

2009 "The Financial Crisis and Lessons for Insurers," $50,000 SOA grant, role: report co-author

Papers Presented at Professional Meetings

2020 "Life Insurance and Annuity Pricing During the Financial Crisis, Revisited" WRIEC, virtual meeting
2019 "An Integrated Approach to Measuring Asset and Liability Risks in Financial Institutions," EGRIE Annual Meeting, Rome, Italy
2019 "An Integrated Approach to Measuring Asset and Liability Risks in Financial Institutions," ARIA Annual Meeting, San Francisco, CA
2019 "An Integrated Approach to Measuring Asset and Liability Risks in Financial Institutions," RTS Annual Seminar, Tuscaloosa, AL
2017 "The Effect of Government Guarantees on Market Discipline in the Property-Casualty Insurance Industry," NBER Insurance Project Workshop, Boston, MA
2015 "The Marginal Cost of Risk in a Multi-Period Model," NBER Insurance Project Workshop, Stanford, CA
2015 "The Marginal Cost of Risk in a Multi-Period Model," CAS Annual Meeting, Philadelphia, PA
2015 "Dynamic Capital Allocation," IME Annual Conference, Liverpool UK
2015 "What Drives Tort Reform Legislation? Economics and Politics of the State Decisions to Restrict Liability Torts," ASSA Annual Meeting, Boston, MA
2014 "The Marginal Cost of Risk in a Multi-Period Model," CAS Centennial, New York, NY
2014 "Market Discipline and Guaranty Funds in Life Insurance," EGRIE Annual Seminar, St. Gallen, CH
2014 "Dynamic Capital Allocation with Irreversible Investments," EGRIE Annual Seminar, St. Gallen, CH
2014 "What Drives Tort Reform Legislation? Economics and Politics of the State Decisions to Restrict Liability Torts," ARIA Annual Meeting, Seattle, WA
2014 "The Marginal Cost of Risk in a Multi-Period Model," ARIA Annual Meeting, Seattle, WA
2014 "Market Discipline and Guaranty Funds in Life Insurance," ARIA Annual Meeting, Seattle, WA
2014 "The Marginal Cost of Risk in a Multi-Period Model," IME Conference, Shanghai, CN
2014 "The Effect of Banking Crises: Evidence from Non-Life Insurance Consumption," Risk Theory Seminar, Munich, Germany
2013 "The Effect of Banking Crises: Evidence from Non-Life Insurance Consumption," ASSA Annual Meeting, Philadelphia, PA
2013 "Optimal Insurance Contracts with Insurer Background Risk," EGRIE Annual Meeting, Paris, FR
2013 "The Effect of Banking Crises: Evidence from Non-Life Insurance Consumption," ARIA Annual Meeting, Washington D.C.
2013 "The Marginal Cost of Risk, Risk Measures, and Capital Allocation," IRFRC Catastrophe Risk Conference, Singapore
2013 "Optimal Insurance Contracts with Insurer Background Risk," ARIA Annual Meeting, Washington D.C.
2013 "The Marginal Cost of Risk, Risk Measures, and Capital Allocation," CEAR/ETH Indices of Risk and New Risk Measures Conference, Zurich, CH
2012 "The Marginal Cost of Risk, Risk Measures, and Capital Allocation," CAS Spring Meeting, Phoenix, AZ
2012 "The Marginal Cost of Risk, Risk Measures, and Capital Allocation," Symposium: Risk and Catastrophic Events, State College, PA
2012 "The Marginal Cost of Risk, Risk Measures, and Capital Allocation," ASSA Annual Meeting, Chicago, IL
2011 "The Marginal Cost of Risk, Risk Measures, and Capital Allocation," NBER Insurance Project Workshop, Cambridge, MA
2010 "Bankruptcy in the Core and Periphery of Financial Groups: The Case of the Property-Casualty Insurance Industry," ASSA Annual Meeting, Atlanta, GA
2009 "Bankruptcy in the Core and Periphery of Financial Groups: The Case of the Property-Casualty Insurance Industry," Risk Management and Corporate Governance Conference, Loyola University of Chicago
2009 "Bankruptcy in the Core and Periphery of Financial Groups: The Case of the Property-Casualty Insurance Industry," ARIA Annual Meeting, Providence, RI
2008 "An Economic Approach to Capital Allocation," Risk Theory Society, Annual Meeting, Fort Collins, CO

2007 "Federal Financial Exposure to Catastrophic Risk," ARIA Annual Meeting, Quebec City, CA
2007 "Catastrophe Bonds, Reinsurance, and the Optimal Collateralization of Risk Transfer," EFMA Annual Meeting, Vienna, AT
2007 "Catastrophe Bonds, Reinsurance, and the Optimal Collateralization of Risk Transfer," 5th Infiniti Conference on International Financial Integration, Dublin, IE
2007 "Federal Financial Exposure to Catastrophic Risk," NBER Conference on Measuring and Managing Federal Financial Risk, Evanston, IL
2006 Insuring Catastrophic Losses: The Status of TRIA and Proposed Natural Disaster Backstops, Wash., D.C.
2006 "Catastrophe Bonds, Reinsurance, and the Optimal Collateralization of Risk Transfer," Risk Theory Society, Annual Meeting, Richmond,VA
2006 "Public versus Private Underwriting of Catastrophe Risk: Lessons from the California Earthquake Authority," Berkeley Symposium on Real Estate, Catastrophic Risk, and Public Policy
2006 "Catastrophe Bonds, Reinsurance, and the Optimal Collateralization of Risk Transfer," NBER Insurance Project Workshop, Cambridge, MA
2005 "Regulation, Capital, and the Evolution of Organizational Form in U.S. Life Insurance," NBER Insurance Project Workshop, Cambridge, MA
2004 "The Rise and Fall of the Fraternal Life Insurer: Law and Organizational Form in U.S. Life Insurance," NBER Insurance Project Workshop, Cambridge, MA
2004 "Regulation, Capital, and the Evolution of Organizational Form in U.S. Life Insurance," American Finance Association, Annual Meeting, San Diego, CA
2003 "Insurance, Self-Protection, and the Economics of Terrorism," Risk Theory Society, Annual Meeting, Atlanta, GA
2003 "Terrorism Insurance Policy and the Public Good," St. John's Journal of Legal Commentary 10th Annual Legal Symposium: Terrorism and its Impact on Insurance: Legislative Responses and Coverage Issues, Queens, NY
2003 "Insurance, Self-Protection, and the Economics of Terrorism," NBER Insurance Project Workshop, Cambridge, MA
2002 "Pricing and Capital Allocation in Catastrophe Insurance," CAS Risk and Capital Management Seminar, Toronto, CA
2002 "Market Discipline and Government Guarantees in U.S. Life Insurance," Risk Theory Society, Annual Meeting, Urbana-Champaign, IL
2001 "Pricing and Capital Allocation in Catastrophe Insurance," Risk Theory Society, Annual Meeting, Montreal

Other Conferences Talks and Panel Participation

2018 Surplus Lines Automation Conference, Florida
2017 International Conference on Business Sciences, Cairo University, Egypt
2016 IIF Insurance Colloquium, Basel, Switzerland
2016 Surplus Lines Association of California, California (keynote)
2014 Surplus Lines Automation Conference, Florida
2011 PRMIA Annual Risk Leadership Conference, Atlanta, GA
2011 7th International Microinsurance Conference, Rio de Janeiro, Brazil
2010 Property Loss Research Bureau Eastern Adjusters Conference, Atlanta, GA (keynote)
2008 NCOIL Annual Meeting, Duck Key, FL
2007 Capital Markets Symposium on Securitizing Insurance Risk, New York, NY
2006 Insuring Catastrophic Losses: The Status of TRIA and Proposed Natural Disaster Backstops, Wash., D.C.
2006 Catastrophe Bonds and Insurance Linked Securities Summit, New York, NY
2005 12th Annual International Conference Promoting Business Ethics, New York, NY

Service Activities in Academic and Professional Organizations

American Risk & Insurance Association President (2012-13)
Risk Theory Society President (2011-2012)
American Risk & Insurance Association Board Member (2007-2014)
International Research Advisory Board, Risk and Insurance Research Center, NCCU, Taiwan
Editorial Board, *Journal of Insurance Issues* (2012-2014)
Senior Editor, *Journal of Risk and Insurance* (2019-)
Huebner Colloquium Panelist (2016-2019)

External Committees
American Risk & Insurance Association Program Committee, various years; ARIA Nominations Committee, 2015, 2016, 2018; Kulp-Wright Book Award Committee, 2005

Discussant: *WRIEC 2020; EGRIE Annual Meeting, Rome, 2019; ARIA Annual Meeting, San Francisco, 2019; ARIA Annual Meeting, Chicago, 2018; ARIA Annual Meeting, Boston, 2016; SIFR Insurance Conference, Stockholm, 2015; EGRIE Annual Seminar, St. Gallen, 2014*; *ARIA Annual Meeting, Seattle, 2014; ARIA Annual Meeting, San Diego, 2011; CEAR Workshop on Insurance for the Poor, Atlanta, 2010*; *CEAR Workshop on Risk Perception and Subjective Beliefs, Atlanta, 2010*; *Midwest Finance Association Annual Meeting, Chicago, 2009; 5th Infiniti Conference, Dublin, 2007; EFMA Annual Meeting, Vienna, 2007; AEA Annual Meeting, San Diego, 2004*

Session Chair: *ARIA Annual Meeting, Chicago, 2018, ARC, Atlanta, 2017; IME, Atlanta, 2017; ARIA Annual Meeting, San Diego, 2011; Midwest Finance Association Annual Meeting, Chicago, 2009; ARIA Annual Meeting, Quebec City, 2007; EFMA Annual Meeting, Vienna, 2007;*

Referee for *Asia-Pacific Journal of Risk and Insurance, Astin Bulletin, Australian Social Monitor*, *Contemporary Economic Policy, Current Issues in Economics and Finance, Defense and Peace Economics, European Economic Review, Financial Review, Geneva Papers: Issues and Practice, Geneva Risk and Insurance Review, Health Affairs, Insurance: Mathematics and Economics, Journal of Banking and Finance, Journal of Business*, *Journal of Finance, Journal of Financial Intermediation*, *Journal of Financial Services Research, Journal of Law and Economics, Journal of Money, Credit, and Banking, Journal of Political Economy, Journal of Risk and Insurance, Management Science, North American Actuarial Journal, Proceedings of the National Academy of Sciences, Review of Financial Studies, Risk Management and Insurance Review, Scandinavian Actuarial Journal,* and *Science.*

Working Group Participation
Committee on the Global Financial System, Working Group on Institutional Investors, Global Savings, and Asset Allocation (2006); *Presidential Working Group on Financial Markets, Working Group on Terrorism Insurance* (2006)

Continuing Education Activities

2004-2007 Central Banking Seminar, Federal Reserve Bank of New York, Topics: Introduction to U.S. Financial Markets; Introduction to Non-bank Financial Institutions

2009	Texas Farm Bureau Program, Georgia State University, Topic: Securitization, the Insurance Industry, and the Panic of 2007
2009-2012	Horst K. Jannott Visiting Fellows Program, Georgia State University, Topics: Securitization, the Insurance Industry, and the Panic of 2007; Introduction to Statistics;

NCRB - Pro Forma Statutory Rate of Return
Dwelling Fire

		Pre-Tax	Tax Liability	Post-Tax
1	**Premiums**	100.00%		
	Loss & LAE	59.63%		
	Commissions	11.30%		
	Other Acquisition & General	14.82%		
	Taxes, Licenses, & Fees	2.70%		
	Policyholder Dividends	0.50%		
	Compensation for Assessment Risk	2.55%		
2	**Pro Forma Underwriting Profit**	8.50%		
3	**Installment Fee Income**	0.57%		
4	**Regular Tax**		1.91%	
5	**Additional Tax Due to IRS Treatment of Reserves**		-0.12%	
6	**Total Return from Underwriting Post-Tax**			7.29%
7	**Investment Gain on Insurance Transaction**	2.51%		
	Less Investment Income on Agents Balances	0.63%		
	Net Investment Gain on Insurance Transaction	1.88%	0.29%	1.58%
8	**Total Return as a Percent of Premium (post-tax)**			8.87%
9	**Premium-to-Net Worth Ratio**			0.80
10	**Total Return as a Percent of Net Worth (post-tax)**			7.08%

Lines (1) to (8) are expressed as a percentage of premium.

Assumptions and Parameters

(a)	Underwriting Income Tax Rate	21.00%
(b)	Investment Income Tax Rate	15.71%
(c)	Pre-tax Investment Yield	3.10%
(d)	Premium-to-Surplus Ratio	0.9
(e)	Net Worth-to-Surplus Ratio	1.13
(f)	Installment Fee Income	0.57%
(g)	Additional Tax Due to IRS Treatment of Loss Reserves and UEPR	-0.12%
(h)	Compensation for Assessment Risk	2.55%

Notes to Exhibit RB-27 Page 1

1 The expense provisions are those used in the filing, adjusted for the indicated rate change.

2 Selected by North Carolina Rate Bureau

3 See Exhibit RB-27, Page 3

4 [(2) + (3)] x (a)

5 See Exhibit RB-27, Pages 4-6

6 (2) + (3) - (4) - (5)

7 Investment income on agents balances is calculated as 0.2 x 1.021 x (c) , where 0.2 is the factor for agents balances held for less than 90 days and 1.021 is a factor to correct for overdue balances. The figures are sourced from North Carolina Rate Bureau and ISO.

8 (6) + (7)

9 (d) / (e)

10 (8) x (9)

Assumptions

(a) Current corporate tax rate, based on the Tax Cut and Jobs Act of 2017.
(b) See Exhibit RB-27 , Pages 11-13. Calculated as 1- average post-tax yield/average pre-tax yield.
(c) See Exhibit RB-27, Page 10
(d) See Exhibit RB-27, Page 14
(e) See Exhibit RB-27, Page 15
(f) See Exhibit RB-27, Page 3
(g) See Exhibit RB-27, Pages 4-6
(h) Compensation for Assessment Risk based on the analysis of Milliman incorporated in the filing, adjusted for the indicated rate change.

NCRB - Pro Forma Statutory Rate of Return
(Including Investment Income on Surplus)
Dwelling Fire

		Pre-Tax	Tax Liability	Post-Tax
1	**Premiums**	100.00%		
	Loss & LAE	59.63%		
	Commissions	11.30%		
	Other Acquisition & General	14.82%		
	Taxes, Licenses, & Fees	2.70%		
	Policyholder Dividends	0.50%		
	Compensation for Assessment Risk	2.55%		
2	**Pro Forma Underwriting Profit**	8.50%		
3	**Installment Fee Income**	0.57%		
4	**Regular Tax**		1.91%	
5	**Additional Tax Due to IRS Treatment of Reserves**		-0.12%	
6	**Total Return from Underwriting Post-Tax**			7.29%
7	**Investment Gain on Insurance Transaction**	2.51%		
	Less Investment Income on Agents Balances	0.63%		
	Net Investment Gain on Insurance Transaction	1.88%	0.29%	1.58%
8	**Investment Gain on Surplus**	3.76%	0.59%	3.17%
9	**Total Return as a Percent of Premium (post-tax)**			12.04%
10	**Premium-to-Net Worth Ratio**			0.80
11	**Total Return as a Percent of Net Worth (post-tax)**			9.61%

Lines (1) to (8) are expressed as a percentage of premium.

Assumptions and Parameters

(a)	Underwriting Income Tax Rate	21.00%
(b)	Investment Income Tax Rate	15.71%
(c)	Pre-tax Investment Yield	3.10%
(d)	Premium-to-Surplus Ratio	0.90
(e)	Net Worth-to-Surplus Ratio	1.13
(f)	Installment Fee Income	0.57%
(g)	Additional Tax Due to IRS Treatment of Loss Reserves and UEPR	-0.12%
(h)	Compensation for Assessment Risk	2.55%

Notes to Exhibit RB-27 Page 1A

1 The expense provisions are those used in the filing, adjusted for the indicated rate change.

2 Selected by North Carolina Rate Bureau

3 See Exhibit RB-27, Page 3

4 [(2) + (3)] x (a)

5 See Exhibit RB-27, Pages 4-6

6 (2) + (3) - (4) - (5)

7 Investment income on agents balances is calculated as .198 x 1.021 x (c) , where .198 is the factor for agents balances held for less than 90 days and 1.021 is a factor to correct for overdue balances. The figures are sourced from North Carolina Rate Bureau and ISO.

8 (c) x [1/ (d) + 0.2096 x 0.4813], where 0.2096 is the prepaid expense ratio from Page 7 and 0.4813 is the UEPR ratio from Page 7.

9 (6) + (7) + (8)

10 (d) / (e)

11 (9) x (10)

Assumptions

(a) Current corporate tax rate, based on the Tax Cut and Jobs Act of 2017.
(b) See Exhibit RB-27 , Pages 11-13. Calculated as 1- average post-tax yield/average pre-tax yield.
(c) See Exhibit RB-27, Page 10
(d) See Exhibit RB-27, Page 14
(e) See Exhibit RB-27, Page 15
(f) See Exhibit RB-27, Page 3
(g) See Exhibit RB-27, Pages 4-6
(h) Compensation for Assessment Risk based on the analysis of Milliman incorporated in the filing, adjusted for the indicated rate change.

NORTH CAROLINA
Dwelling Fire
INSTALLMENT CHARGES AS A PERCENT OF PREMIUM

Year	Percentage
2019	0.51%
2018	0.57%
2017	0.64%
2016	0.59%
2015	0.56%
Average	0.57%

Source: NCRB

North Carolina
Dwelling Fire
Calculation of Additional Tax Liability

1. Collected Earned Premium for Current Year	100.00%
2. Unearned Premium Reserve 12/31/Current	48.54%
3. Unearned Premium Reserve 12/31/Prior	51.32%
4. Increase: (2) - (3)	-2.78%
5. 20% of Increase = Taxable Income	-0.56%
6. Additional Tax Liability due to Unearned Premium Reserve	-0.12%
7. Unpaid Loss Current Year	36.74%
8. Discounted Unpaid Loss Prior Year	35.80%
9. Unpaid Loss Prior Year	38.85%
10. Discounted Unpaid Loss Prior Year	37.89%
11. Additional Income	-0.01%
12. Additional Tax Liability due to Loss Reserve Discounting	0.00%
13. Total Additional Tax Liabilities (6) + (12)	-0.12%

NORTH CAROLINA
Dwelling Fire
Calculation of Taxable Income

Calculation of Unpaid Loss for Current Accident Year (AY)					Calculation of Discounted Unpaid Loss for Current AY			Calculation of Discounted Unpaid Loss for Prior AY			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
AY Avg Acc Date	AY Pay Pattern	Percent Unpaid	Total Losses	Unpaid Losses	AY at 12/31 yr t	Discount Factor	Discounted Unpaid Loss	AY at 12/31/yr t-1	Unpaid Losses	Discount Factor	Discounted Unpaid Loss
0.5	55.61%	44.39%	59.627	26.47	2018	0.973985	25.7771				
1.5	89.33%	10.67%	63.039	6.72	2017	0.97001	6.5228	2017	27.980	0.975135	27.2843
2.5	94.67%	5.33%	66.646	3.55	2016	0.984834	3.5007	2016	7.109	0.971139	6.9041
3.5	100.00%	0.00%	70.459	0.00	2015	0.984834	0.0000	2015	3.758	0.985513	3.7036
4.5	100.00%	0.00%	74.491	0.00	2014	0	0.0000	2014	0.000	0.985513	0.0000
5.5	100.00%	0.00%	78.754	0.00	2013	0	0.0000	2013	0.000	0	0.0000
6.5	100.00%	0.00%	83.260	0.00	2012	0	0.0000	2012	0.000	0	0.0000
7.5	100.00%	0.00%	88.024	0.00	2011	0	0.0000	2011	0.000	0	0.0000
								2010	0.000	0	0.0000
Totals				36.74			35.80		38.85		37.89

Notes to Pages 4 and 5

Page 4

2	Page 8, line (2) divided by Page 8, line (1)
3	(2) divided by 1 plus the 9 year average growth rate of Dwelling Fire premiums in North Carolina.
4	(2) - (3)
5	(4) x 20%
6	(5) x current corporate tax rate
7	Unpaid current-year losses at year-end as a percent of current year premium. Sum of Page 5, Column (5)
8	Discounted unpaid current-year losses at year-end as a percent of current year premium. Sum of Page 5, Column (8)
9	Unpaid prior-year losses at year-end as a percent of current year premium. Sum of Page 5, Column (10)
10	Discounted unpaid prior-year losses at year-end as a percent of current year premium. Sum of Page 5, Column (12)
11	Change in loss reserve discount: [(7) - (8)] - [(9) - (10)]
12	(11) x current corporate tax rate
13	(6) + (12)

Page 5

1	Midpoint of number of years since end of accident period
2	Special Property payout pattern from IRS Rev. Proc 2016-58
3	1 - (2)
4	Latest period losses are based on projected loss ratio from Page 1. For previous years, losses are detrended at the 9 year average premium growth rate for Dwelling Fire in North Carolina.
5	(3) x (4)
6	Accident Year at current year end
7	IRS discount factors for Special Property from Rev. Proc 2020-48
8	(5) x (7)
9	Accident Year at prior year end
10	Column (3), previous period x Column (4), current period
11	IRS discount factors for Special Property from Rev. Proc 2019-06
12	(10) x (11)

NCRB Investment Income Calculation
Dwelling Fire

Projected Investment Earnings on Loss, Loss Adjustment Expense and Unearned Premium Reserves

A. UNEARNED PREMIUM RESERVES		
1. Direct Earned Premiums		1,000,000
2. Mean Unearned Premium Reserve	48.13%	481,300
3. Deductions for Prepaid Expenses		
Commissions & Brokerage	11.30%	
Taxes, Licenses, & Fees (5/6)	2.25%	
Other Acquisition & General (1/2)	7.41%	
Total	20.96%	
4. Deduction for Prepaid Expense: (2) x (3)		100,880
5. Net Unearned Premium Reserve Subject to Investment (2) - (4)		380,420
B. Loss and Loss Expense Reserves		
1. Direct Earned Premiums		1,000,000
2. Expected Incurred Loss & LAE-to-Premium Ratio	59.63%	596,267
3. Expected Mean Loss and LAE Reserve-to-Incurred Ratio	71.87%	428,564
C. Net Policyholder Funds Subject to Investment (A5 + B3)		808,983
D. Average Rate of Return		3.10%
E. Investment Earnings from Net Reserves: (C) x (D)		25,109
F. Average Rate of Return as a Percent of Direct Earned Premiums: (E) / (A1)		2.51%

NORTH CAROLINA
Dwelling Fire

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line A-1
Calculations displayed are per million of direct earned premiums.

Line A-2
The mean unearned premium reserve (UEPR) is determined by multiplying the direct earned premiums in line A-1 by the ratio of the mean unearned premium reserve to the direct earned premium for the current calendar year ended 12/31. The data are for North Carolina Fire insurance (from statutory Page 14 of the Annual Statement) for all companies which wrote Dwelling Fire in the most recent calendar year.

1	NC Fire Direct Earned Premium for most recent calendar year	230,415,747
2	NC Fire UEPR at end of most recent calendar year	111,854,920
3	NC Fire UEPR at end of previous calendar year	109,932,656
4	Mean NC Fire UEPR	110,893,788
5	Ratio [(4) / (1)]	48.13%

Line A-3
Deduction for prepaid expenses
Certain production expenses, such as commissions and reinsurance, are assumed to be incurred when the policy is written and before the premiuim is paid. In addition, half of Other Acquisition and General expenses and 5/6 of Taxes, Licenses and Fees are assumed to be prepaid.

NORTH CAROLINA
Dwelling Fire

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line B-2
The expected loss and loss adjustment expense ratio is consistent with the expense provisions used in the filing.

Line B-3
The mean loss reserve is calculated by multiplying the incurred losses in line B-2 by the ratio for mean loss reserves to incurred losses. The latter figures are based on total statutory Page 14 figures for North Carolina Fire direct losses incurred and direct losses unpaid for all companies writing Dwelling Fire in North Carolina in 2019. The adjustment for loss expense reserves is based on nationwide industry aggregates for the Homeowners line.

6	Direct Losses Incurred	2015	104,490,797
7	Direct Losses Incurred	2016	70,550,363
8	Direct Losses Incurred	2017	123,225,922
9	Direct Losses Incurred	2018	147,266,683
10	Direct Losses Incurred	2019	67,537,148
11	Direct Losses Unpaid	2014	34,562,766
12	Direct Losses Unpaid	2015	78,177,895
13	Direct Losses Unpaid	2016	55,733,024
14	Direct Losses Unpaid	2017	66,350,617
15	Direct Losses Unpaid	2018	71,679,352
16	Direct Losses Unpaid	2019	51,559,349
17	Mean Loss Reserve	2015	56,370,331
18	Mean Loss Reserve	2016	66,955,460
19	Mean Loss Reserve	2017	61,041,821
20	Mean Loss Reserve	2018	69,014,985
21	Mean Loss Reserve	2019	61,619,351
22	Ratio	2015	0.539
23	Ratio	2016	0.949
24	Ratio	2017	0.495
25	Ratio	2018	0.469
26	Ratio	2019	0.912
27	Average Loss Reserve		0.673
28	Ratio of LAE Reserves to Loss Reserves		0.225
29	Ratio of Incurred LAE to Incurred Loss		0.147
30	Loss & LAE Reserve [(27) x (1+(28))/(1+(29))]		0.719

NORTH CAROLINA
Dwelling Fire

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line E

The average rate of return is the average of the pretax current yield calculated on Page 11 and the pretax embedded yield. The embedded yield (see Page 12) is the sum of the ratio of investment income to invested assets for the most recent year plus the ten year average ratio of capital gains to invested assets (see Page 13). The current yield is the estimated currently available rate of return (including both income and capital gains) on the industry investment portfolio (see Page 11).

Embedded Yield	3.91%
Current Yield	2.30%
Average	3.10%

Portfolio Yield and Tax Rate - Current Yield				
Investable Asset	Percent of Assets	Estimated Prospective Pre-Tax Return	Tax Rate	Estimated Prospective Post-Tax Return
Bonds				
US Gov't	10.81%	0.27%	21.00%	0.21%
Municipal	24.54%	0.54%	5.25%	0.52%
Industrial	31.16%	1.08%	21.00%	0.85%
Preferred Stock	0.34%	5.72%	13.13%	4.97%
Common Stock	24.52%	8.28%	19.40%	6.67%
Mortgage Loans	1.25%	2.95%	21.00%	2.33%
Real Estate	0.86%	5.66%	21.00%	4.47%
Cash & Short-term Investments	6.51%	0.10%	21.00%	0.08%
Rate of Return Before Expenses	100.00%	2.64%	18.91%	2.14%
Investment Expenses		0.34%	21.00%	0.27%
Portfolio Rate of Return		2.30%	18.61%	1.87%

Sources

Preferred Stock	Current yield on iShares Preferred Stock Index ETF, 10/1/2020
Real Estate	REIT Sector Cost of Equity, using 3 month average T-Bill for risk free rate, 0.0818 ERP, 0.68 Beta (source: Damodaran Online)
Cash	3 month Treasury rate, averaged over 3 months (source: US Treasury)
Municipal	Maturity weighted avg of 3 month avg MBIS Investment Grade yield curve; linearly interpolated
Industrial	Three month average of HQM par yields (source: FRED); linearly interpolated
Treasury	Three month average of Treasury yields; linearly interpolated (source: US Treasury)
Common Stock	0.0818 ERP (source: Damodaran Online) plus 3 month average T-Bill Rate
Investment Expenses	Investment Expenses from statutory Page 12 of the Annual Statement (Exhibit of Net Investment Income) divided by Cash and Invested Assets from statutory Page 2 of the Annual Statement (Assets), as compiled in the 2019 edition of A.M. Best's Aggregates and Averages.

Portfolio Yield and Tax Rate
Embedded Yield

		Income	Tax Rate
Bonds			
	Taxable	26,150,371	21.00%
	Non-Taxable	8,700,372	5.25%
Stocks			
	Taxable	7,971,643	13.13%
	Non-Taxable	4,181,953	5.25%
Mortgage Loans		908,689	21.00%
Real Estate		1,937,053	21.00%
Contract Loans		5,854	21.00%
Cash & Short Term Inv		1,984,480	21.00%
All Other		11,900,550	21.00%
Total		63,740,965	16.83%
Inv. Expenses		5,911,971	21.00%
Net Inv. Income		57,828,994	16.40%
Mean Invested Assets		1,733,729,297	
Inv. Inc. Yield Rate		3.34%	16.40%
Capital Gains (10 yr. avg.) (% of Inv. Assets)		0.57%	0.00%
Invest. Yield Rate (pre-tax)		3.91%	14.00%
Invest. Yield Rate (post-tax)		3.36%	

Source: A.M. Best's Aggregates and Averages, 2019 Edition, statutory Page 12 of the Annual Statement - Exhibit of Net Investment Income (Column 2 - Earned During Year). For capital gains, see Exhibit RB-27, Page 13.

Realized Capital Gains or Losses
As a Percentage of Mean Invested Assets
(Amounts in Thousands of Dollars)

Calendar Year	Mean Invested Assets	Realized Capital Gains Amount	Percent
2009	1,274,678,809	(8,079,575)	-0.63%
2010	1,330,998,082	8,100,143	0.61%
2011	1,366,568,026	7,563,305	0.55%
2012	1,400,656,619	9,035,405	0.65%
2013	1,473,600,834	12,163,890	0.83%
2014	1,543,882,375	12,093,078	0.78%
2015	1,567,611,077	9,887,732	0.63%
2016	1,596,937,470	8,086,268	0.51%
2017	1,676,831,258	15,725,303	0.94%
2018	1,733,729,297	10,825,733	0.62%
Total	14,965,493,844	85,401,282	0.57%

"Mean Invested Assets" is the average of current and prior year values for Cash & Invested Assets from statutory Page 2 of the Annual Statement (Assets). Source for data is 2009-2019 editions of A.M. Best's Aggregates and Averages. Figures are net of capital gains taxes.

North Carolina

Dwelling Fire

Premium-to-Surplus Ratios

Year	Ratio
2019	0.93
2018	0.82
2017	0.86
2016	0.80
2015	0.78
2014	0.80
2013	0.86
2012	1.06
2011	1.14
2010	0.95
Average	0.90

Data from NAIC Statutory Filings for all groups writing Dwelling Fire insurance in North Carolina. Weighted average is calculated using North Carolina Dwelling Fire insurance premiums.

North Carolina
Dwelling Fire
Calculation of Ratio of GAAP Net Worth to Statutory Surplus

	2014	2015	2016	2017	2018
Policyholder Surplus	705,383,177	706,046,329	734,973,294	786,896,032	779,735,146
+ Deferred Acquisition Costs	32,841,853	34,339,266	34,497,160	35,448,312	40,036,795
+ Non-Admitted DTA Provision	12,438,011	13,406,897	12,678,507	6,023,322	6,958,587
+ Non-admitted Assets (non-tax part)	34,284,282	41,064,060	44,580,531	47,724,191	47,237,245
+ Provision for Reinsurance	2,395,153	2,253,194	2,197,343	2,621,717	2,750,285
+ Provision for FASB 115(after-tax)	27,628,143	17,489,124	11,137,026	18,749,276	1,323,356
- Surplus Notes	(12,099,804)	(13,100,048)	(12,282,030)	(11,967,501)	(11,738,367)
GAAP-adjusted Net Worth	802,870,815	801,498,821	827,781,831	885,495,349	866,303,047
Ratio of Net Worth to Surplus	1.14	1.14	1.13	1.13	1.11
Five Year Average	1.127				

Source: ISO

NCRB - Pro Forma Statutory Rate of Return
Dwelling Insurance - Extended Coverage

		Pre-Tax	Tax Liability	Post-Tax
1	**Premiums**	100.00%		
	Loss & LAE	45.59%		
	Commissions	9.10%		
	Other Acquisition & General	7.19%		
	Taxes, Licenses, & Fees	2.60%		
	Policyholder Dividends	0.80%		
	Net Cost of Reinsurance	24.60%		
	Compensation for Assessment Risk	1.62%		
2	**Pro Forma Underwriting Profit**	8.50%		
3	**Installment Fee Income**	0.57%		
4	**Regular Tax**		1.90%	
5	**Additional Tax Due to IRS Treatment of Reserves**		0.04%	
6	**Total Return from Underwriting Post-Tax**			7.12%
7	**Investment Gain on Insurance Transaction**	2.23%		
	Less Investment Income on Agent and Reinsurance Balances	0.48%		
	Net Investment Gain on Insurance Transaction	1.75%	0.27%	1.47%
8	**Total Return as a Percent of Premium (post-tax)**			8.60%
9	**Premium-to-Net Worth Ratio**			0.80
10	**Total Return as a Percent of Net Worth (post-tax)**			6.86%

Lines (1) to (8) are expressed as a percentage of premium.

Assumptions and Parameters

(a)	Underwriting Income Tax Rate	21.00%
(b)	Investment Income Tax Rate	15.71%
(c)	Pre-tax Investment Yield	3.10%
(d)	Premium-to-Surplus Ratio	0.9
(e)	Net Worth-to-Surplus Ratio	1.127
(f)	Installment Fee Income	0.57%
(g)	Additional Tax Due to IRS Treatment of Loss Reserves and UEPR	0.04%
(h)	Net Cost of Reinsurance	24.60%
(i)	Compensation for Assessment Risk	1.62%

Notes to Exhibit RB-28 Page 1

1 The expense provisions are those used in the filing, adjusted for the indicated rate change.

2 Selected by North Carolina Rate Bureau

3 See Exhibit RB-28, Page 3

4 [(2) + (3)] x (a)

5 See Exhibit RB-28, Pages 4-6

6 (2) + (3) - (4) - (5)

7 Investment income on agents balances is calculated as 0.184 x 1.021 x (c) , where 0.184 is a factor for agents balances held for less than 90 days and 1.021 is a factor to correct for overdue balances. From this figure, we deduct investment income on net reinsurance balances, which which we estimate at 0.091 of the total cost of reinsurance times (c). The estimate for net reinsurance balances is based on ceded balances payable plus funds held plus other amounts due reinsurers minus reinsurance recoverables. These amounts are taken from the aggregated Schedule F as reported in the latest available edition of A.M. Best Aggregates & Averages.

8 (6) + (7)

9 (d) / (e)

10 (8) x (9)

Assumptions

(a) Current corporate tax rate, based on the Tax Cut and Jobs Act of 2017.
(b) See Exhibit RB-28 , Pages 11-13. Calculated as 1- average post-tax yield/average pre-tax yield.
(c) See Exhibit RB-28, Page 10
(d) See Exhibit RB-28, Page 14
(e) See Exhibit RB-28, Page 15
(f) See Exhibit RB-28, Page 3
(g) See Exhibit RB-28, Pages 4-6
(h) Net Cost of Reinsurance based on the analysis of Aon and incorporated in the filing, adjusted for the indicated rate change.
(i) Compensation for Assessment Risk based on the analysis of Milliman incorporated in the filing, adjusted for the indicated rate change.

NCRB - Pro Forma Statutory Rate of Return
(Including Investment Income on Surplus)
Dwelling Insurance - Extended Coverage

		Pre-Tax	Tax Liability	Post-Tax
1	**Premiums**	100.00%		
	Loss & LAE	45.59%		
	Commissions	9.10%		
	Other Acquisition & General	7.19%		
	Taxes, Licenses, & Fees	2.60%		
	Policyholder Dividends	0.80%		
	Net Cost of Reinsurance	24.60%		
	Compensation for Assessment Risk	1.62%		
2	**Pro Forma Underwriting Profit**	8.50%		
3	**Installment Fee Income**	0.57%		
4	**Regular Tax**		1.90%	
5	**Additional Tax Due to IRS Treatment of Reserves**		0.04%	
6	**Total Return from Underwriting Post-Tax**			7.12%
7	**Investment Gain on Insurance Transaction**	2.23%		
	Less Investment Income on Agent and Reinsurance Balances	0.48%		
	Net Investment Gain on Insurance Transaction	1.75%	0.27%	1.47%
8	**Investment Gain on Surplus**	3.67%	0.58%	3.09%
9	**Total Return as a Percent of Premium (post-tax)**			11.69%
10	**Premium-to-Net Worth Ratio**			0.80
11	**Total Return as a Percent of Net Worth (post-tax)**			9.33%

Lines (1) to (8) are expressed as a percentage of premium.

Assumptions and Parameters

(a)	Underwriting Income Tax Rate	21.00%
(b)	Investment Income Tax Rate	15.71%
(c)	Pre-tax Investment Yield	3.10%
(d)	Premium-to-Surplus Ratio	0.90
(e)	Net Worth-to-Surplus Ratio	1.127
(f)	Installment Fee Income	0.57%
(g)	Additional Tax Due to IRS Treatment of Loss Reserves and UEPR	0.04%
(h)	Net Cost of Reinsurance	24.60%
(i)	Compensation for Assessment Risk	1.62%

Notes to Exhibit RB-28 Page 1A

1 The expense provisions are those used in filing, adjusted for the indicated rate change.

2 Selected by North Carolina Rate Bureau

3 See Exhibit RB-28, Page 3

4 [(2) + (3)] x (a)

5 See Exhibit RB-28, Pages 4-6

6 (2) + (3) - (4) - (5)

7 Investment income on agents balances is calculated as 0.184 x 1.021 x (c) , where 0.184 is a factor for agents balances held for less than 90 days and 1.021 is a factor to correct for overdue balances. From this figure, we deduct investment income on net reinsurance balances, which which we estimate at 0.091 of the total cost of reinsurance times (c). The estimate for net reinsurance balances is based on ceded balances payable plus funds held plus other amounts due reinsurers minus reinsurance recoverables. These amounts are taken from the aggregated Schedule F as reported in the latest available edition of A.M. Best Aggregates & Averages.

8 (c) x [1/ (d) + 0.1486 x 0.4814], where 0.1486 is the prepaid expense ratio minus the total cost of reinsurance from Page 7 and 0.4814 is the UEPR ratio from Page 7.

9 (6) + (7) + (8)

10 (d) / (e)

11 (9) x (10)

Assumptions

(a) Current corporate tax rate, based on the Tax Cut and Jobs Act of 2017.
(b) See Exhibit RB-28 , Pages 11-13. Calculated as 1- average post-tax yield/average pre-tax yield.
(c) See Exhibit RB-28, Page 10
(d) See Exhibit RB-28, Page 14
(e) See Exhibit RB-28, Page 15
(f) See Exhibit RB-28, Page 3
(g) See Exhibit RB-28, Pages 4-6
(h) Net Cost of Reinsurance based on the analysis of Aon and incorporated in the filing, adjusted for the indicated rate change.
(i) Compensation for Assessment Risk based on the analysis of Milliman incorporated in the filing, adjusted for the indicated rate change.

NORTH CAROLINA
Dwelling Insurance - Extended Coverage
INSTALLMENT CHARGES AS A PERCENT OF PREMIUM

Year	**Percentage**
2019	0.51%
2018	0.57%
2017	0.64%
2016	0.59%
2015	0.56%
Selected Value	0.57%

Source: NCRB

North Carolina
Dwelling Insurance - Extended Coverage
Calculation of Additional Tax Liability

1. Collected Earned Premium for Current Year	100.00%
2. Unearned (Net) Premium Reserve 12/31/Current	33.60%
3. Unearned (Net) Premium Reserve 12/31/Prior	32.84%
4. Increase: (2) - (3)	0.75%
5. 20% of Increase = Taxable Income	0.15%
6. Additional Tax Liability due to Unearned Premium Reserve	0.03%
7. Unpaid Loss Current Year	21.05%
8. Discounted Unpaid Loss Prior Year	20.51%
9. Unpaid Loss Prior Year	20.58%
10. Discounted Unpaid Loss Prior Year	20.07%
11. Additional Income	0.03%
12. Additional Tax Liability due to Loss Reserve Discounting	0.01%
13. Total Additional Tax Liabilities (6) + (12)	0.04%

NORTH CAROLINA
Dwelling Insurance - Extended Coverage
Calculation of Taxable Income

Calculation of Unpaid Loss for Current Accident Year (AY)					Calculation of Discounted Unpaid Loss for Current AY			Calculation of Discounted Unpaid Loss for Prior AY			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
AY Avg Acc Date	AY Pay Pattern	Percent Unpaid	Total Losses	Unpaid Losses	AY at 12/31 yr t	Discount Factor	Discounted Unpaid Loss	AY at 12/31/yr t-1	Unpaid Losses	Discount Factor	Discounted Unpaid Loss
0.5	55.61%	44.39%	45.593	20.24	2019	0.973985	19.7101				
1.5	89.33%	10.67%	44.571	4.75	2018	0.97001	4.6119	2018	19.783	0.975135	19.2910
2.5	94.67%	5.33%	43.572	2.32	2017	0.984834	2.2887	2017	4.648	0.971139	4.5137
3.5	100.00%	0.00%	42.595	0.00	2016	0.984834	0.0000	2016	2.272	0.985513	2.2389
4.5	100.00%	0.00%	41.640	0.00	2015	0	0.0000	2015	0.000	0.985513	0.0000
5.5	100.00%	0.00%	40.707	0.00	2014	0	0.0000	2014	0.000	0	0.0000
6.5	100.00%	0.00%	39.794	0.00	2013	0	0.0000	2013	0.000	0	0.0000
7.5	100.00%	0.00%	38.902	0.00	2012	0	0.0000	2012	0.000	0	0.0000
								2011	0.000	0	0.0000
Totals				27.31			26.61		26.70		26.04

Notes to Pages 4 and 5

Page 4

2 [Page 8, line (2) divided by Page 8, line (1)] times one minus the Cost of Reinsurance from Page 7

3 (2) divided by 1 plus the 9 year average growth rate of Dwelling Insurance - Extended Coverage premiums in North Carolina.

4 (2) - (3)

5 (4) x 20%

6 (5) x current corporate tax rate

7 Unpaid current-year losses at year-end as a percent of current year premium.
Sum of Page 5, Column (5)

8 Discounted unpaid current-year losses at year-end as a percent of current year premium.
Sum of Page 5, Column (8)

9 Unpaid prior-year losses at year-end as a percent of current year premium.
Sum of Page 5, Column (10)

10 Discounted unpaid prior-year losses at year-end as a percent of current year premium.
Sum of Page 5, Column (12)

11 Change in loss reserve discount: [(7) - (8)] - [(9) - (10)]

12 (11) x current corporate tax rate

13 (6) + (12)

Page 5

1 Midpoint of number of years since end of accident period

2 Special Property payout pattern from IRS Rev. Proc 2016-58

3 1 - (2)

4 Latest period losses are based on projected loss ratio from Page 1. For previous years, losses are detrended at the 9 year average premium growth rate for Dwelling Insurance - Extended Coverage in North Carolina.

5 (3) x (4)

6 Accident Year at current year end

7 IRS discount factors for Special Property from Rev. Proc 2020-48

8 (5) x (7)

9 Accident Year at prior year end

10 Column (3), previous period x Column (4), current period

11 IRS discount factors for Special Property from Rev. Proc 2019-06

12 (10) x (11)

NCRB Investment Income Calculation
Dwelling Insurance - Extended Coverage

Projected Investment Earnings on Loss, Loss Adjustment Expense and Unearned Premium Reserves

A. UNEARNED PREMIUM RESERVES		
1. Direct Earned Premiums		1,000,000
2. Mean Unearned Premium Reserve	48.14%	481,400
3. Deductions for Prepaid Expenses		
Commissions & Brokerage	9.10%	
Taxes, Licenses, & Fees (5/6)	2.17%	
Other Acquisition & General (1/2)	3.60%	
Cost of Reinsurance	35.06%	
Total	49.92%	
4. Deduction for Prepaid Expense: (2) x (3)		240,315
5. Net Unearned Premium Reserve Subject to Investment (2) - (4)		241,085
B. Loss and Loss Expense Reserves		
1. Direct Earned Premiums		1,000,000
2. Expected Net Incurred Loss & LAE-to-Direct Premium Ratio	35.13%	351,339
3. Expected Mean Loss and LAE Reserve-to-Incurred Ratio	136.07%	478,068
C. Net Policyholder Funds Subject to Investment (A5 + B3)		719,153
D. Average Rate of Return		3.10%
E. Investment Earnings from Net Reserves: (C) x (D)		22,321
F. Average Rate of Return as a Percent of Direct Earned Premiums: (E) / (A1)		2.23%

NORTH CAROLINA
Dwelling Insurance - Extended Coverage

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line A-1
Calculations displayed are per million of direct earned premiums.

Line A-2
The mean unearned premium reserve (UEPR) is determined by multiplying the direct earned premiums in line A-1 by the ratio of the mean unearned premium reserve to the direct earned premium for the current calendar year ended 12/31. The data are for North Carolina Allied Lines insurance (from statutory Page 14 of the Annual Statement) for all companies which wrote Dwelling Insurance - Extended Coverage in the most recent calendar year.

1	NC Allied Lines Direct Earned Premium for most recent calendar year	287,004,527
2	NC Allied Lines UEPR at end of most recent calendar year	148,478,317
3	NC Allied Lines UEPR at end of previous calendar year	127,836,607
4	Mean NC Allied Lines UEPR	138,157,462
5	Ratio [(4) / (1)]	48.14%

Line A-3
Deduction for prepaid expenses
Certain production expenses, such as commissions and reinsurance, are assumed to be incurred when the policy is written and before the premiuim is paid. In addition, half of Other Acquisition and General expenses and 5/6 of Taxes, Licenses and Fees are assumed to be prepaid.

NORTH CAROLINA
Dwelling Insurance - Extended Coverage

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line B-2
Ratio is calculated as the expected direct loss and LAE ratio from Page 1 minus the difference between the total cost of reinsurance from Line A-3 and the net cost of reinsurance from Page 1.

Line B-3
The mean loss reserve is calculated by multiplying the incurred losses in line B-2 by the ratio for mean loss reserves to incurred losses. The latter figures are based on total statutory Page 14 figures for NC Allied Lines direct losses incurred and direct losses unpaid for all companies writing Dwelling Insurance - Extended Coverage in North Carolina in 2019. The adjustment for loss expense reserves is based on nationwide industry aggregates for the Homeowners line.

6	Direct Losses Incurred	2015	70,202,684
7	Direct Losses Incurred	2016	126,737,675
8	Direct Losses Incurred	2017	74,001,415
9	Direct Losses Incurred	2018	703,738,774
10	Direct Losses Incurred	2019	64,562,160
11	Direct Losses Unpaid	2014	32,119,812
12	Direct Losses Unpaid	2015	33,833,302
13	Direct Losses Unpaid	2016	68,978,452
14	Direct Losses Unpaid	2017	55,475,077
15	Direct Losses Unpaid	2018	417,341,717
16	Direct Losses Unpaid	2019	140,237,570
17	Mean Loss Reserve	2015	32,976,557
18	Mean Loss Reserve	2016	51,405,877
19	Mean Loss Reserve	2017	62,226,765
20	Mean Loss Reserve	2018	236,408,397
21	Mean Loss Reserve	2019	278,789,644
22	Ratio	2015	0.470
23	Ratio	2016	0.406
24	Ratio	2017	0.841
25	Ratio	2018	0.336
26	Ratio	2019	4.318
27	Average Loss Reserve		1.274
28	Ratio of LAE Reserves to Loss Reserves		0.225
29	Ratio of Incurred LAE to Incurred Loss		0.147
30	Loss & LAE Reserve [(27) x (1+(28))/(1+(29))]		1.361

NORTH CAROLINA
Dwelling Insurance - Extended Coverage

ESTIMATED INVESTMENT EARNINGS ON UNEARNED PREMIUM RESERVES AND ON LOSS RESERVES

EXPLANATORY NOTES

Line E

The average rate of return is the average of the pretax current yield calculated on Page 11 and the pretax embedded yield. The embedded yield (see Page 12) is the sum of the ratio of investment income to invested assets for the most recent year plus the ten year average ratio of capital gains to invested assets (see Page 13). The current yield is the estimated currently available rate of return (including both income and capital gains) on the industry investment portfolio (see Page 11).

Embedded Yield	3.91%
Current Yield	2.30%
Average	3.10%

Portfolio Yield and Tax Rate - Current Yield

Investable Asset	Percent of Assets	Estimated Prospective Pre-Tax Return	Tax Rate	Estimated Prospective Post-Tax Return
Bonds				
US Gov't	10.81%	0.27%	21.00%	0.21%
Municipal	24.54%	0.54%	5.25%	0.52%
Industrial	31.16%	1.08%	21.00%	0.85%
Preferred Stock	0.34%	5.72%	13.13%	4.97%
Common Stock	24.52%	8.28%	19.40%	6.67%
Mortgage Loans	1.25%	2.95%	21.00%	2.33%
Real Estate	0.86%	5.66%	21.00%	4.47%
Cash & Short-term Investments	6.51%	0.10%	21.00%	0.08%
Rate of Return Before Expenses	100.00%	2.64%	18.91%	2.14%
Investment Expenses		0.34%	21.00%	0.27%
Portfolio Rate of Return		2.30%	18.61%	1.87%

Sources

Preferred Stock	Current yield on iShares Preferred Stock Index ETF, 10/1/2020
Real Estate	REIT Sector Cost of Equity, using 3 month average T-Bill for risk free rate, 0.0818 ERP, 0.68 Beta (source: Damodaran Online)
Cash	3 month Treasury rate, averaged over 3 months (source: US Treasury)
Municipal	Maturity weighted avg of 3 month avg MBIS Investment Grade yield curve; linearly interpolated
Industrial	Three month average of HQM par yields (source: FRED); linearly interpolated
Treasury	Three month average of Treasury yields; linearly interpolated (source: US Treasury)
Common Stock	0.0818 ERP (source: Damodaran Online) plus 3 month average T-Bill Rate
Investment Expenses	Investment Expenses from statutory Page 12 of the Annual Statement (Exhibit of Net Investment Income) divided by Cash and Invested Assets from statutory Page 2 of the Annual Statement (Assets), as compiled in the 2019 edition of A.M. Best's Aggregates and Averages.

Portfolio Yield and Tax Rate
Embedded Yield

		Income	Tax Rate
Bonds			
	Taxable	26,150,371	21.00%
	Non-Taxable	8,700,372	5.25%
Stocks			
	Taxable	7,971,643	13.13%
	Non-Taxable	4,181,953	5.25%
Mortgage Loans		908,689	21.00%
Real Estate		1,937,053	21.00%
Contract Loans		5,854	21.00%
Cash & Short Term Inv		1,984,480	21.00%
All Other		11,900,550	21.00%
Total		63,740,965	16.83%
Inv. Expenses		5,911,971	21.00%
Net Inv. Income		57,828,994	16.40%
Mean Invested Assets		1,733,729,297	
Inv. Inc. Yield Rate		3.34%	16.40%
Capital Gains (10 yr. avg.) (% of Inv. Assets)		0.57%	0.00%
Invest. Yield Rate (pre-tax)		3.91%	14.00%
Invest. Yield Rate (post-tax)		3.36%	

Source: A.M. Best's Aggregates and Averages, 2019 Edition, statutory Page 12 of the Annual Statement - Exhibit of Net Investment Income (Column 2 - Earned During Year). For capital gains, see Exhibit RB-28, Page 13.

Realized Capital Gains or Losses
As a Percentage of Mean Invested Assets
(Amounts in Thousands of Dollars)

Calendar Year	Mean Invested Assets	Realized Capital Gains Amount	Percent
2009	1,274,678,809	(8,079,575)	-0.63%
2010	1,330,998,082	8,100,143	0.61%
2011	1,366,568,026	7,563,305	0.55%
2012	1,400,656,619	9,035,405	0.65%
2013	1,473,600,834	12,163,890	0.83%
2014	1,543,882,375	12,093,078	0.78%
2015	1,567,611,077	9,887,732	0.63%
2016	1,596,937,470	8,086,268	0.51%
2017	1,676,831,258	15,725,303	0.94%
2018	1,733,729,297	10,825,733	0.62%
Total	14,965,493,844	85,401,282	0.57%

"Mean Invested Assets" is the average of current and prior year values for Cash & Invested Assets from statutory Page 2 of the Annual Statement (Assets). Source for data is 2009-2019 editions of A.M. Best's Aggregates and Averages. Figures are net of capital gains taxes.

North Carolina

Dwelling Insurance - Extended Coverage

Premium-to-Surplus Ratios

Year	Ratio
2019	0.88
2018	1.05
2017	0.85
2016	0.78
2015	0.78
2014	0.82
2011	0.85
2010	0.98
2009	1.04
2008	0.96
Average	0.90

Data from NAIC Statutory Filings for all groups writing Dwelling Insurance - Extended Coverage insurance in North Carolina. Weighted average is calculated using North Carolina Dwelling Insurance - Extended Coverage insurance premiums.

North Carolina

Dwelling Insurance - Extended Coverage

Calculation of Ratio of GAAP Net Worth to Statutory Surplus

	2014	2015	2016	2017	2018
Policyholder Surplus	705,383,177	706,046,329	734,973,294	786,896,032	779,735,146
+ Deferred Acquisition Costs	32,841,853	34,339,266	34,497,160	35,448,312	40,036,795
+ Non-Admitted DTA Provision	12,438,011	13,406,897	12,678,507	6,023,322	6,958,587
+ Non-admitted Assets (non-tax part)	34,284,282	41,064,060	44,580,531	47,724,191	47,237,245
+ Provision for Reinsurance	2,395,153	2,253,194	2,197,343	2,621,717	2,750,285
+ Provision for FASB 115(after-tax)	27,628,143	17,489,124	11,137,026	18,749,276	1,323,356
- Surplus Notes	(12,099,804)	(13,100,048)	(12,282,030)	(11,967,501)	(11,738,367)
GAAP-adjusted Net Worth	802,870,815	801,498,821	827,781,831	885,495,349	866,303,047
Ratio of Net Worth to Surplus	1.14	1.14	1.13	1.13	1.11
Five Year Average	1.127				

Source: ISO

Sample of Findings on the Private Company Discount

Study	Years	Discount	Type
Emory (1994)	1992-1993	45%	IPO
Willamette Management Associates (various)	1975-1997	29% to 60%	IPO
Garland and Reilly (2004)	1998-2002	35%	IPO
Larcker et al. (2018)	2017	39% to 47%	IPO
Koeplin et al. (2000)	1984-1998	20% to 30%	Acquisitions
Block (2007)	1999-2006	20% to 25%	Acquisitions
Officer (2007)	1979-2003	15% to 30%	Acquisitions
Paglia and Harjoto (2010)	1993-2008	65% to 70%	Acquisitions
Jaffe et al. (2018)	1985-2014	0%	Acquisitions
Silber (1991)	1981-1988	34%	Restricted Stock
Johnson (1999)	1991-1995	20%	Restricted Stock
Bajaj et al. (2001)	1990-1995	7%	Private placements
Comment (2012)	2004-2010	5% to 6%	Private placements
Finnerty (2013)	1991-1997	21%	Private placements
Finnerty (2013)	1997-2007	15%	Private placements
Chen et al. (2015)	1999-2012	10%	Private placements

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* The Willamette research studies were unpublished but reported in Business Valuation Discounts and Premiums, Chapter 5, by Shannon Pratt (New York: John Wiley & Sons, Inc., p. 85).