

**Texas Windstorm Insurance Association
Residential Property - Wind & Hail
2024 Rate Level Review**

**Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review**

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Summary of Indicated Rate Change
By Method for Projecting Hurricane Loss & LAE

Hurricane Projection Method (1)	Indicated Loss & LAE Ratio		Fixed Expenses (4)	Total (5)	Permissible LLAE Ratio (6)	2024
	Hurricane (2)	Non-Hurricane (3)				Indicated Rate Change (7)
Using Experience and Models	43.2%	13.9%	49.2%	106.3%	77.2%	+38.0%
Using Actual Industry Experience	38.2%	13.9%	49.2%	101.3%	77.2%	+31.0%
Verisk	55.4%	13.9%	49.2%	118.5%	77.2%	+54.0%
RMS	49.0%	13.9%	49.2%	112.1%	77.2%	+45.0%
Impact Forecasting	45.3%	13.9%	49.2%	108.4%	77.2%	+40.0%
CoreLogic RQE	42.6%	13.9%	49.2%	105.7%	77.2%	+37.0%
Average of All Models	48.1%	13.9%	49.2%	111.2%	77.2%	+44.0%

Notes:

- (2) Exhibit 5
- (3) Exhibit 2, Sheet 1
- (4) Exhibit 10, Sheet 1
- (5) = (2) + (3) + (4)
- (6) Exhibit 10, Sheet 1
- (7) = (5) / (6) - 1

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Residential Property - Wind & Hail
Rate Level Review
 Projected Ultimate Non-Hurricane Loss & LAE Ratio
 All Territory Weighted Average

Territory	2023 Written Premium		Indicated Non-Hurricane Loss & LAE Ratio
	Amount	Share	
(1)	(2)	(3)	(4)
Tier 1 - Territory 8	183,156,184	35.0%	11.9%
Tier 1 - Territory 9	86,684,858	16.6%	6.9%
Tier 1 - Territory 10	246,412,664	47.1%	17.4%
Tier 2	6,678,115	1.3%	33.7%
Total / Average	522,931,821	100.0%	13.9%

Notes:

- (2) TWIA data
- (3) = (2) / (2) Total
- (4) Exhibit 2, Sheet 2a - Sheet 2d

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Projected Ultimate Non-Hurricane Loss & LAE Ratio

Tier 1 -- Territory 8 (Galveston County)

Accident Year Ending 9/30	Ultimate Non-Hurricane Loss	LAE Factor	Net Trend Factor	Projected Non-Hurricane Loss & LAE	Earned Premium at Current TWIA Rate Level	Indicated Non-Hurricane Loss & LAE Ratio
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2014	520,624	0.290	1.145	768,988	141,396,555	0.5%
2015	17,456,712	0.290	1.131	25,469,168	143,824,430	17.7%
2016	10,988,633	0.290	1.135	16,089,007	140,103,503	11.5%
2017	2,721,261	0.290	1.097	3,850,938	133,016,924	2.9%
2018	2,556,928	0.290	1.083	3,572,207	121,376,251	2.9%
2019	4,884,869	0.290	1.051	6,622,857	114,641,201	5.8%
2020	5,651,316	0.290	1.064	7,756,770	113,445,809	6.8%
2021	25,649,071	0.290	1.007	33,318,913	117,940,724	28.3%
2022	12,074,652	0.290	0.970	15,109,012	129,461,860	11.7%
2023	33,728,902	0.290	1.024	44,554,530	159,933,055	27.9%
Total	116,232,968			157,112,390	1,315,140,312	11.9%

Notes:

- (2) Exhibit 2, Sheet 3b
- (3) Exhibit 4
- (4) Exhibit 2, Sheet 5
- (5) = (2) * [1 + (3)] * (4)
- (6) Exhibit 9, Sheet 1a
- (7) = (5) / (6)

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Projected Ultimate Non-Hurricane Loss & LAE Ratio

Tier 1 -- Territory 9 (Nueces County)

Accident Year Ending 9/30	Ultimate Non-Hurricane Loss	LAE Factor	Net Trend Factor	Projected Non-Hurricane Loss & LAE	Earned Premium at Current TWIA Rate Level	Indicated Non-Hurricane Loss & LAE Ratio
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2014	1,618,066	0.290	1.145	2,389,964	78,255,381	3.1%
2015	9,468,390	0.290	1.131	13,814,286	81,529,229	16.9%
2016	9,533,582	0.290	1.135	13,958,594	80,522,915	17.3%
2017	7,674,191	0.290	1.097	10,859,978	76,211,725	14.2%
2018	1,116,311	0.290	1.083	1,559,565	68,808,541	2.3%
2019	840,804	0.290	1.051	1,139,954	62,864,123	1.8%
2020	483,920	0.290	1.064	664,209	60,369,447	1.1%
2021	788,242	0.290	1.007	1,023,950	59,850,735	1.7%
2022	1,209,235	0.290	0.970	1,513,116	62,591,785	2.4%
2023	1,566,684	0.290	1.024	2,069,527	76,445,090	2.7%
Total	34,299,425			48,993,143	707,448,971	6.9%

Notes:

- (2) Exhibit 2, Sheet 3c
- (3) Exhibit 4
- (4) Exhibit 2, Sheet 5
- (5) = (2) * [1 + (3)] * (4)
- (6) Exhibit 9, Sheet 1b
- (7) = (5) / (6)

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Projected Ultimate Non-Hurricane Loss & LAE Ratio

Tier 1 -- Territory 10 (Other Tier 1)

Accident Year Ending 9/30	Ultimate Non-Hurricane Loss	LAE Factor	Net Trend Factor	Projected Non-Hurricane Loss & LAE	Earned Premium at Current TWIA Rate Level	Indicated Non-Hurricane Loss & LAE Ratio
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2014	2,847,173	0.290	1.145	4,205,417	233,107,124	1.8%
2015	86,534,172	0.290	1.131	126,252,492	237,999,667	53.0%
2016	12,170,939	0.290	1.135	17,820,080	227,183,607	7.8%
2017	21,918,178	0.290	1.097	31,017,071	207,881,527	14.9%
2018	6,779,148	0.290	1.083	9,470,944	179,645,974	5.3%
2019	10,208,022	0.290	1.051	13,839,934	159,579,121	8.7%
2020	22,040,186	0.290	1.064	30,251,478	148,714,964	20.3%
2021	30,328,898	0.290	1.007	39,398,148	147,041,832	26.8%
2022	13,200,665	0.290	0.970	16,517,992	157,257,092	10.5%
2023	32,660,717	0.290	1.024	43,143,501	211,507,410	20.4%
Total	238,688,098			331,917,057	1,909,918,318	17.4%

Notes:

- (2) Exhibit 2, Sheet 3d
- (3) Exhibit 4
- (4) Exhibit 2, Sheet 5
- (5) = (2) * [1 + (3)] * (4)
- (6) Exhibit 9, Sheet 1c
- (7) = (5) / (6)

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Projected Ultimate Non-Hurricane Loss & LAE Ratio

Tier 2 -- (Territories 1 and 11)

Accident Year Ending 9/30	Ultimate Non-Hurricane Loss	LAE Factor	Net Trend Factor	Projected Non-Hurricane Loss & LAE	Earned Premium at Current TWIA Rate Level	Indicated Non-Hurricane Loss & LAE Ratio
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2014	30,748	0.290	1.145	45,416	4,882,886	0.9%
2015	339,607	0.290	1.131	495,483	4,986,385	9.9%
2016	446,561	0.290	1.135	653,832	5,015,200	13.0%
2017	483,192	0.290	1.097	683,779	4,890,478	14.0%
2018	283,290	0.290	1.083	395,776	4,631,462	8.5%
2019	2,728,066	0.290	1.051	3,698,685	4,510,864	82.0%
2020	456,670	0.290	1.064	626,807	4,586,202	13.7%
2021	2,128,105	0.290	1.007	2,764,472	4,749,377	58.2%
2022	728,027	0.290	0.970	910,980	5,048,518	18.0%
2023	4,773,253	0.290	1.024	6,305,276	5,922,961	106.5%
Total	12,397,519			16,580,506	49,224,333	33.7%

Notes:

- (2) Exhibit 2, Sheet 3e
- (3) Exhibit 4
- (4) Exhibit 2, Sheet 5
- (5) = (2) * [1 + (3)] * (4)
- (6) Exhibit 9, Sheet 1d
- (7) = (5) / (6)

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Interpolation of Development Factors

Accident Year Ending 12/31	Evaluation Age in Months	Schedule P Direct & Assumed Paid Loss	Schedule P Direct & Assumed Ultimate Loss	Schedule P Development Factor	Interpolated Age in Months	Interpolated Development Factor
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2014	120	7,871,000	7,871,000	1.000	123	1.000
2015	108	138,697,000	138,836,000	1.001	111	1.001
2016	96	28,422,000	28,422,000	1.000	99	1.000
2017	84	1,402,282,000	1,410,332,000	1.006	87	1.004
2018	72	12,097,000	12,107,000	1.001	75	1.002
2019	60	17,606,000	17,832,000	1.013	63	1.010
2020	48	64,031,000	65,043,000	1.016	51	1.015
2021	36	64,894,000	67,732,000	1.044	39	1.037
2022	24	27,771,000	30,224,000	1.088	27	1.077
2023	12	57,766,000	76,706,000	1.328	15	1.268

Notes:

- (3) Based on TWIA 2023 Annual Statement
- (4) Based on TWIA 2023 Annual Statement
- (5) = (4) / (3)
- (7) Interpolated based on (5)

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 Projected Ultimate Non-Hurricane Loss
 Tier 1 -- Territory 8 (Galveston County)

Accident Year Ending 9/30	TWIA Non-Hurricane Paid Loss	Development Factor	Ultimate Non-Hurricane Loss
(1)	(2)	(3)	(4)
2014	520,624	1.000	520,624
2015	17,443,601	1.001	17,456,712
2016	10,985,881	1.000	10,988,633
2017	2,709,595	1.004	2,721,261
2018	2,551,684	1.002	2,556,928
2019	4,837,299	1.010	4,884,869
2020	5,567,455	1.015	5,651,316
2021	24,739,860	1.037	25,649,071
2022	11,209,499	1.077	12,074,652
2023	26,600,326	1.268	33,728,902
Total	107,165,824		116,232,968

Notes:

- (2) Exhibit 2, Sheet 4a, as of 12/31/23
- (3) Exhibit 2, Sheet 3a
- (4) = (2) * (3)

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Projected Ultimate Non-Hurricane Loss
Tier 1 -- Territory 9 (Nueces County)

Accident Year Ending 9/30	TWIA Non-Hurricane Paid Loss	Development Factor	Ultimate Non-Hurricane Loss
(1)	(2)	(3)	(4)
2014	1,618,066	1.000	1,618,066
2015	9,461,279	1.001	9,468,390
2016	9,531,194	1.000	9,533,582
2017	7,641,292	1.004	7,674,191
2018	1,114,022	1.002	1,116,311
2019	832,616	1.010	840,804
2020	476,739	1.015	483,920
2021	760,300	1.037	788,242
2022	1,122,593	1.077	1,209,235
2023	1,235,567	1.268	1,566,684
Total	33,793,668		34,299,425

Notes:

- (2) Exhibit 2, Sheet 4b, as of 12/31/23
- (3) Exhibit 2, Sheet 3a
- (4) = (2) * (3)

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Projected Ultimate Non-Hurricane Loss
Tier 1 -- Territory 10 (Other Tier 1)

Accident Year Ending 9/30	TWIA Non-Hurricane Paid Loss	Development Factor	Ultimate Non-Hurricane Loss
(1)	(2)	(3)	(4)
2014	2,847,173	1.000	2,847,173
2015	86,469,178	1.001	86,534,172
2016	12,167,890	1.000	12,170,939
2017	21,824,214	1.004	21,918,178
2018	6,765,244	1.002	6,779,148
2019	10,108,613	1.010	10,208,022
2020	21,713,126	1.015	22,040,186
2021	29,253,796	1.037	30,328,898
2022	12,254,832	1.077	13,200,665
2023	25,757,901	1.268	32,660,717
Total	229,161,967		238,688,098

Notes:

- (2) Exhibit 2, Sheet 4c, as of 12/31/23
- (3) Exhibit 2, Sheet 3a
- (4) = (2) * (3)

Texas Windstorm Insurance Association
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Projected Ultimate Non-Hurricane Loss
Tier 2 -- (Territories 1 and 11)

Accident Year Ending 9/30	TWIA Non-Hurricane Paid Loss	Development Factor	Ultimate Non-Hurricane Loss
(1)	(2)	(3)	(4)
2014	30,748	1.000	30,748
2015	339,352	1.001	339,607
2016	446,449	1.000	446,561
2017	481,121	1.004	483,192
2018	282,709	1.002	283,290
2019	2,701,499	1.010	2,728,066
2020	449,893	1.015	456,670
2021	2,052,668	1.037	2,128,105
2022	675,864	1.077	728,027
2023	3,764,430	1.268	4,773,253
Total	11,224,733		12,397,519

Notes:

- (2) Exhibit 2, Sheet 4d, as of 12/31/23
- (3) Exhibit 2, Sheet 3a
- (4) = (2) * (3)

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Summary of TWIA Historical Paid Loss as of 12/31/23
Tier 1 -- Territory 8 (Galveston County)

Accident Year Ending 9/30	Paid Loss Excluding Expense			Total
	(1)	(2)	(3)	
2014		520,624	0	520,624
2015		17,443,601	0	17,443,601
2016		10,985,881	0	10,985,881
2017		2,709,595	35,490,978	38,200,573
2018		2,551,684	0	2,551,684
2019		4,837,299	0	4,837,299
2020		5,567,455	30,724	5,598,179
2021		24,739,860	381,777	25,121,637
2022		11,209,499	0	11,209,499
2023		26,600,326	0	26,600,326
Total		107,165,824	35,903,479	143,069,303

Notes:

(2),(3) Provided by TDI. Accident years ending 9/30/xx
(4) = (2) + (3)

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Summary of TWIA Historical Paid Loss as of 12/31/23
Tier 1 -- Territory 9 (Nueces County)

Accident Year Ending 9/30	Paid Loss Excluding Expense			Total
	(1)	(2)	(3)	
	Non-Hurricane	Hurricane		
2014	1,618,066	0		1,618,066
2015	9,461,279	0		9,461,279
2016	9,531,194	0		9,531,194
2017	7,641,292	250,889,783		258,531,075
2018	1,114,022	0		1,114,022
2019	832,616	0		832,616
2020	476,739	1,826,271		2,303,010
2021	760,300	0		760,300
2022	1,122,593	0		1,122,593
2023	1,235,567	0		1,235,567
Total	33,793,668	252,716,054		286,509,722

Notes:

(2),(3) Provided by TDI. Accident years ending 9/30/xx
(4) = (2) + (3)

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Summary of TWIA Historical Paid Loss as of 12/31/23
Tier 1 -- Territory 10 (Other Tier 1)

Accident Year Ending 9/30	Paid Loss Excluding Expense			Total
	(1)	(2)	(3)	
2014		2,847,173	0	2,847,173
2015		86,469,178	0	86,469,178
2016		12,167,890	0	12,167,890
2017		21,824,214	628,015,623	649,839,837
2018		6,765,244	0	6,765,244
2019		10,108,613	0	10,108,613
2020		21,713,126	6,954,608	28,667,734
2021		29,253,796	17,066,570	46,320,366
2022		12,254,832	0	12,254,832
2023		25,757,901	0	25,757,901
Total		229,161,967	652,036,801	881,198,768

Notes:

(2) (3) Provided by TDI. Accident years ending 9/30/xx

(4) = (2) + (3)

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Summary of TWIA Historical Paid Loss as of 12/31/23
Tier 2 -- (Territories 1 and 11)

Accident Year Ending 9/30	Paid Loss Excluding Expense			Total
	(1)	(2)	(3)	
2014		30,748	0	30,748
2015		339,352	0	339,352
2016		446,449	0	446,449
2017		481,121	3,459,572	3,940,693
2018		282,709	0	282,709
2019		2,701,499	0	2,701,499
2020		449,893	6,672	456,565
2021		2,052,668	15,380	2,068,048
2022		675,864	0	675,864
2023		3,764,430	0	3,764,430
Total		11,224,733	3,481,624	14,706,357

Notes:

(2) (3) Provided by TDI. Accident years ending 9/30/xx

(4) = (2) + (3)

Texas Windstorm Insurance Association
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Calculation of Net Trend Factors

Year / Quarter	Average Written Premium At Present Rates				
(1)	(2)	(3) Current Average Earned Date	(4) Current Average Accident Date	(5) Prospective Average Earned / Accident Date	(6) Premium Trend Length
2014 / 3	1,762.63	4/1/2023	4/1/2023	1/1/2026	2.750
2015 / 3	1,778.86				2.750
2016 / 3	1,781.44				6.7%
2017 / 3	1,738.90				7.6%
2018 / 3	1,774.13				
2019 / 3	1,771.01				
2020 / 3	1,785.14				
2021 / 3	1,847.23				
2022 / 3	2,057.81				
2023 / 3	2,234.21				

Accident Year Ending 9/30	Current Premium Trend	Current Loss Trend	Prospective Premium Trend	Prospective Loss Trend	Net Trend Factor
(10)	(11)	(12)	(13)	(14)	(15)
2014	1.268	1.417	1.194	1.223	1.145
2015	1.256	1.387	1.194	1.223	1.131
2016	1.254	1.390	1.194	1.223	1.135
2017	1.285	1.376	1.194	1.223	1.097
2018	1.259	1.332	1.194	1.223	1.083
2019	1.262	1.295	1.194	1.223	1.051
2020	1.252	1.300	1.194	1.223	1.064
2021	1.209	1.189	1.194	1.223	1.007
2022	1.086	1.028	1.194	1.223	0.970
2023	1.000	1.000	1.194	1.223	1.024

Notes:

- (2) Average written premium per exposure at present rates from Exhibit 3, Sheet 2, Column (6)
- (3) Latest Year / Quarter Ending Date - 6 Months
- (4) Latest Accident Year Ending Date - 6 Months
- (5) Rate Effective Date + 12 Months
- (6) = (5) - (3)
- (7) = (5) - (4)
- (8) Exhibit 3, Sheet 2
- (9) Exhibit 3, Sheet 3a
- (11) = (2) Indexed to 2023 / 3
- (12) Exhibit 3, Sheet 3a
- (13) = [1 + (8)] ^ (6)
- (14) = [1 + (9)] ^ (7)
- (15) = [(12) * (14)] / [(11) * (13)]

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review

Exhibit 3
Sheet 1

Incurred Loss Development Factors
Statewide Industry Extended Coverage Dwelling Incurred Loss

Accident Year Ending	<u>Months of Development</u>									
9/30	15	27	39	51	63	75	87	99	111	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
2014	157,426	183,366	190,278	191,866	192,056	192,342	192,403	192,425	192,453	
2015	183,266	204,239	208,541	209,008	209,335	209,189	209,282	209,327	209,327	
2016	498,092	556,120	562,298	564,014	564,747	565,099	565,153	565,168		
2017	665,247	791,814	816,792	822,536	825,860	825,686	826,174			
2018	186,500	218,189	220,721	221,225	221,202	221,253				
2019	283,698	318,858	324,431	325,280	325,477					
2020	338,256	390,286	398,056	400,109						
2021	421,926	488,001	492,939							
2022	255,496	298,212								
2023	580,738									

Accident Year Ending	<u>Development Factors</u>									
9/30	15 - 27	27 - 39	39 - 51	51 - 63	63 - 75	75 - 87	87 - 99	99 - 111	111 - Ult	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
2014	1.165	1.038	1.008	1.001	1.001	1.000	1.000	1.000	1.000	1.000
2015	1.114	1.021	1.002	1.002	0.999	1.000	1.000	1.000	1.000	
2016	1.117	1.011	1.003	1.001	1.001	1.000	1.000			
2017	1.190	1.032	1.007	1.004	1.000	1.001				
2018	1.170	1.012	1.002	1.000	1.000					
2019	1.124	1.017	1.003	1.001						
2020	1.154	1.020	1.005							
2021	1.157	1.010								
2022	1.167									

Average	1.151	1.020	1.004	1.001	1.000	1.000	1.000	1.000	1.000	1.000
Avg 5 Year	1.154	1.018	1.004	1.001	1.000	1.000	1.000	1.000	1.000	
Prior	1.149	1.026	1.005	1.002	1.000	1.000	1.000	1.000	1.000	1.000
Selected	1.151	1.020	1.004	1.001	1.000	1.000	1.000	1.000	1.000	1.000
Selected Cumulative	1.180	1.025	1.005	1.001	1.000	1.000	1.000	1.000	1.000	1.000

Notes:
Provided by TICO. Accident years ending 9/30/xx

Rate Level Review

Premium Trend Analysis

TWIA Residential Written Premium at Present Rates (WPPR)

Year / Quarter	Exposure Written	Written Premium	On-Level Factors	Written Premium at Present Rates	Quarterly Average WPPR	Annualized Average WPPR	Exponential Fitted Trends			
							All-Year	5-Year	4-Year	3-Year
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2014 / 2	79,155	111,616,003	1.255	140,128,872	1,770					
2014 / 3	89,874	128,096,479	1.237	158,414,687	1,763					
2014 / 4	60,646	86,711,448	1.221	105,885,837	1,746					
2015 / 1	57,651	85,327,979	1.210	103,236,560	1,791	1,767	1,691			
2015 / 2	82,158	122,581,230	1.196	146,575,670	1,784	1,771	1,698			
2015 / 3	84,402	127,421,809	1.178	150,139,314	1,779	1,776	1,706			
2015 / 4	57,308	87,342,988	1.163	101,596,837	1,773	1,782	1,713			
2016 / 1	54,113	84,557,230	1.153	97,461,471	1,801	1,783	1,721			
2016 / 2	79,991	125,845,764	1.139	143,345,209	1,792	1,786	1,728			
2016 / 3	77,932	123,784,247	1.122	138,831,226	1,781	1,787	1,736			
2016 / 4	51,030	81,959,449	1.108	90,806,567	1,779	1,788	1,743			
2017 / 1	50,991	79,037,984	1.103	87,139,377	1,709	1,770	1,751			
2017 / 2	73,614	114,547,681	1.103	126,288,818	1,716	1,747	1,759			
2017 / 3	68,864	108,614,623	1.103	119,747,622	1,739	1,734	1,766			
2017 / 4	45,960	73,697,340	1.103	81,251,317	1,768	1,731	1,774			
2018 / 1	44,101	71,679,332	1.098	78,682,660	1,784	1,746	1,782			
2018 / 2	63,851	104,163,394	1.085	112,994,275	1,770	1,763	1,790			
2018 / 3	61,408	101,951,681	1.069	108,946,054	1,774	1,774	1,798			
2018 / 4	40,418	68,300,637	1.055	72,071,158	1,783	1,777	1,805			
2019 / 1	39,758	65,036,872	1.050	68,288,716	1,718	1,764	1,813	1,670		
2019 / 2	60,805	99,948,528	1.050	104,945,954	1,726	1,750	1,821	1,691		
2019 / 3	57,547	97,063,357	1.050	101,916,525	1,771	1,749	1,829	1,711		
2019 / 4	38,375	65,697,652	1.050	68,982,535	1,798	1,751	1,837	1,732		
2020 / 1	38,302	63,498,682	1.050	66,673,616	1,741	1,756	1,845	1,753	1,691	
2020 / 2	59,374	98,472,763	1.050	103,396,401	1,741	1,761	1,854	1,774	1,718	
2020 / 3	57,963	98,544,861	1.050	103,472,104	1,785	1,765	1,862	1,796	1,745	
2020 / 4	37,911	65,820,531	1.050	69,111,558	1,823	1,770	1,870	1,817	1,773	
2021 / 1	39,057	66,582,420	1.050	69,911,541	1,790	1,780	1,878	1,840	1,801	1,746
2021 / 2	60,541	103,031,428	1.050	108,182,999	1,787	1,794	1,886	1,862	1,830	1,782
2021 / 3	59,878	105,341,091	1.050	110,608,146	1,847	1,813	1,895	1,884	1,859	1,819
2021 / 4	39,807	72,365,308	1.050	75,983,573	1,909	1,830	1,903	1,907	1,889	1,856
2022 / 1	40,733	76,134,863	1.045	79,562,723	1,953	1,863	1,911	1,930	1,919	1,895
2022 / 2	61,794	116,935,905	1.032	120,677,182	1,953	1,913	1,920	1,954	1,950	1,934
2022 / 3	79,530	161,132,745	1.016	163,657,432	2,058	1,983	1,928	1,978	1,981	1,974
2022 / 4	43,628	92,639,740	1.004	93,000,123	2,132	2,024	1,937	2,002	2,013	2,014
2023 / 1	46,661	98,545,683	1.000	98,545,683	2,112	2,055	1,945	2,026	2,045	2,056
2023 / 2	68,720	145,450,526	1.000	145,450,526	2,117	2,099	1,954	2,050	2,078	2,098
2023 / 3	83,884	187,414,809	1.000	187,414,809	2,234	2,159	1,962	2,075	2,111	2,142
2023 / 4	48,217	110,838,891	1.000	110,838,891	2,299	2,191	1,971	2,100	2,145	2,186
(14) Average Annual Change							1.8%	4.9%	6.6%	8.5%
(15) Correlation Coefficient							51.1%	84.7%	92.6%	98.1%
(16) Selected Premium Trend										6.7%

- Notes:
- (2) Provided by TWIA. Exposures written on inception
 - (3) Provided by TWIA. Premium written on inception
 - (4) Cumulative effect of annual rate changes
 - (5) = (3) * (4)
 - (6) = (5) / (2), WPPR = Written Premium at Present Rates
 - (7) Four-quarter rolling average written premium
 - (8) - (11) = (7) Fitted to an exponential distribution
 - (14) Fitted average annual change
 - (15) Evaluates the predictability of the fitted curve
 - (16) Selected based on judgment, with equal weight given to 3-year, 4-year, and 5-year exponential fitted trends

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review

Loss Trend Analysis
Summary of Indices and Calculation of Prospective Loss Costs

Accident Year Ending 9/30	Statewide Boeckh	Coastal Boeckh	Modified CPI	Weighted Average
(1)	(2)	(3)	(4)	(5)
2014	1.465	1.483	1.220	1.417
2015	1.428	1.448	1.205	1.387
2016	1.437	1.458	1.187	1.390
2017	1.422	1.441	1.179	1.376
2018	1.370	1.386	1.170	1.332
2019	1.338	1.344	1.147	1.295
2020	1.329	1.344	1.169	1.300
2021	1.190	1.206	1.138	1.189
2022	1.028	1.024	1.039	1.028
2023	1.000	1.000	1.000	1.000

Factors to Adjust For Prospective Loss Costs

(6) Fitted Trend	8.6%	8.8%	3.8%	7.6%
(7) Cost Factor	1.255	1.261	1.108	1.223

Notes:

- (2) = Exhibit 3, Sheet 3b trended forward to 9/30/2023
- (3) = Exhibit 3, Sheet 3c trended forward to 9/30/2023
- (4) = Exhibit 3, Sheet 3d
- (5) = 25% CPI and 75% Coastal Boeckh (most appropriate available by year)
- (6) = (2) - (5) Fitted to an exponential curve using 5 years' data
- (7) = $[1 + (6)]^{2.75}$ (trended from 4/1/2023 to 1/1/2026)

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review

Loss Trend Analysis

Boeckh Residential Construction Index Trend (Statewide)

Calendar Quarter Ending	Texas Statewide Index	Fitted Trends							
		All Years		5 Years		4 Years		3 Years	
(1)	(2)	Linear (3)	Exponential (4)	Linear (5)	Exponential (6)	Linear (7)	Exponential (8)	Linear (9)	Exponential (10)
3/31/2014	2,220.33	2,035.41	2,089.62						
6/30/2014	2,239.69	2,063.09	2,111.14						
9/30/2014	2,258.10	2,090.77	2,132.89						
12/31/2014	2,276.23	2,118.45	2,154.85						
3/31/2015	2,294.25	2,146.13	2,177.05						
6/30/2015	2,308.21	2,173.81	2,199.47						
9/30/2015	2,316.67	2,201.49	2,222.13						
12/31/2015	2,320.56	2,229.17	2,245.02						
3/31/2016	2,317.11	2,256.85	2,268.14						
6/30/2016	2,309.12	2,284.53	2,291.50						
9/30/2016	2,302.02	2,312.21	2,315.11						
12/31/2016	2,297.38	2,339.89	2,338.95						
3/31/2017	2,300.31	2,367.57	2,363.04						
6/30/2017	2,310.73	2,395.25	2,387.38						
9/30/2017	2,327.29	2,422.93	2,411.97						
12/31/2017	2,344.83	2,450.61	2,436.82						
3/31/2018	2,364.81	2,478.29	2,461.92						
6/30/2018	2,388.11	2,505.97	2,487.28						
9/30/2018	2,414.68	2,533.64	2,512.90						
12/31/2018	2,442.30	2,561.32	2,538.78						
3/31/2019	2,462.88	2,589.00	2,564.93	2,273.91	2,311.21				
6/30/2019	2,472.72	2,616.68	2,591.35	2,332.73	2,359.27				
9/30/2019	2,472.27	2,644.36	2,618.04	2,391.55	2,408.34				
12/31/2019	2,470.08	2,672.04	2,645.00	2,450.37	2,458.43				
3/31/2020	2,471.03	2,699.72	2,672.25	2,509.18	2,509.56	2,381.37	2,405.81		
6/30/2020	2,477.92	2,727.40	2,699.77	2,568.00	2,561.75	2,453.65	2,466.80		
9/30/2020	2,489.29	2,755.08	2,727.58	2,626.82	2,615.03	2,525.94	2,529.34		
12/31/2020	2,517.58	2,782.76	2,755.68	2,685.64	2,669.42	2,598.22	2,593.46		
3/31/2021	2,554.28	2,810.44	2,784.06	2,744.46	2,724.94	2,670.50	2,659.21	2,660.83	2,664.50
6/30/2021	2,628.51	2,838.12	2,812.74	2,803.28	2,781.61	2,742.78	2,726.62	2,734.92	2,731.65
9/30/2021	2,779.97	2,865.80	2,841.71	2,862.10	2,839.46	2,815.07	2,795.74	2,809.01	2,800.50
12/31/2021	2,895.88	2,893.48	2,870.98	2,920.92	2,898.52	2,887.35	2,866.62	2,883.11	2,871.09
3/31/2022	3,017.67	2,921.16	2,900.55	2,979.74	2,958.80	2,959.63	2,939.29	2,957.20	2,943.45
6/30/2022	3,154.56	2,948.84	2,930.43	3,038.56	3,020.33	3,031.92	3,013.80	3,031.29	3,017.64
9/30/2022	3,219.54	2,976.52	2,960.61	3,097.38	3,083.15	3,104.20	3,090.21	3,105.39	3,093.70
12/31/2022	3,296.51	3,004.20	2,991.10	3,156.20	3,147.27	3,176.48	3,168.54	3,179.48	3,171.67
3/31/2023	3,345.12	3,031.88	3,021.91	3,215.02	3,212.73	3,248.77	3,248.87	3,253.57	3,251.61
6/30/2023	3,333.79	3,059.56	3,053.04	3,273.84	3,279.55	3,321.05	3,331.23	3,327.67	3,333.57
9/30/2023	3,308.27	3,087.24	3,084.49	3,332.66	3,347.75	3,393.33	3,415.68	3,401.76	3,417.59
12/31/2023	3,285.96	3,114.92	3,116.26	3,391.48	3,417.38	3,465.62	3,502.27	3,475.85	3,503.73
Annual Trend		3.6%	4.2%	6.9%	8.6%	8.3%	10.5%	8.5%	10.5%
R-Squared		0.773	0.804	0.893	0.898	0.927	0.926	0.865	0.855

Notes:

- (2) = Average index for Austin, Corpus Christi, Dallas, El Paso, Fort Worth, Houston, Odessa, and San Antonio
- (3) - (10) = (2) Fitted to linear and exponential distributions

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review

Loss Trend Analysis
Boeckh Residential Construction Index Trend (Coastal)

Calendar Quarter Ending	Texas Coastal Index	Fitted Trends							
		All Years		5 Years		4 Years		3 Years	
(1)	(2)	Linear (3)	Exponential (4)	Linear (5)	Exponential (6)	Linear (7)	Exponential (8)	Linear (9)	Exponential (10)
3/31/2014	2,228.12	2,036.91	2,095.88						
6/30/2014	2,253.04	2,066.00	2,118.28						
9/30/2014	2,275.40	2,095.08	2,140.91						
12/31/2014	2,297.17	2,124.17	2,163.79						
3/31/2015	2,310.98	2,153.26	2,186.92						
6/30/2015	2,322.93	2,182.35	2,210.29						
9/30/2015	2,330.79	2,211.44	2,233.91						
12/31/2015	2,333.67	2,240.53	2,257.78						
3/31/2016	2,329.10	2,269.62	2,281.91						
6/30/2016	2,321.29	2,298.71	2,306.29						
9/30/2016	2,314.14	2,327.79	2,330.94						
12/31/2016	2,308.79	2,356.88	2,355.85						
3/31/2017	2,311.91	2,385.97	2,381.02						
6/30/2017	2,324.53	2,415.06	2,406.47						
9/30/2017	2,341.58	2,444.15	2,432.18						
12/31/2017	2,360.91	2,473.24	2,458.18						
3/31/2018	2,381.21	2,502.33	2,484.45						
6/30/2018	2,405.09	2,531.42	2,511.00						
9/30/2018	2,434.29	2,560.51	2,537.83						
12/31/2018	2,468.59	2,589.59	2,564.95						
3/31/2019	2,495.17	2,618.68	2,592.36	2,291.80	2,332.32				
6/30/2019	2,509.13	2,647.77	2,620.06	2,353.26	2,382.17				
9/30/2019	2,511.41	2,676.86	2,648.06	2,414.71	2,433.09				
12/31/2019	2,505.03	2,705.95	2,676.36	2,476.16	2,485.09				
3/31/2020	2,503.42	2,735.04	2,704.96	2,537.61	2,538.20	2,393.94	2,421.11		
6/30/2020	2,503.86	2,764.13	2,733.87	2,599.07	2,592.45	2,470.51	2,485.18		
9/30/2020	2,510.09	2,793.22	2,763.08	2,660.52	2,647.86	2,547.08	2,550.95		
12/31/2020	2,532.66	2,822.30	2,792.61	2,721.97	2,704.46	2,623.65	2,618.46		
3/31/2021	2,564.78	2,851.39	2,822.45	2,783.42	2,762.26	2,700.22	2,687.75	2,681.49	2,685.17
6/30/2021	2,647.02	2,880.48	2,852.62	2,844.88	2,821.30	2,776.78	2,758.88	2,761.24	2,757.07
9/30/2021	2,798.64	2,909.57	2,883.10	2,906.33	2,881.60	2,853.35	2,831.89	2,840.99	2,830.89
12/31/2021	2,934.30	2,938.66	2,913.91	2,967.78	2,943.19	2,929.92	2,906.83	2,920.74	2,906.69
3/31/2022	3,069.44	2,967.75	2,945.05	3,029.23	3,006.09	3,006.49	2,983.76	3,000.48	2,984.52
6/30/2022	3,213.84	2,996.84	2,976.52	3,090.68	3,070.34	3,083.06	3,062.72	3,080.23	3,064.43
9/30/2022	3,295.10	3,025.93	3,008.33	3,152.14	3,135.96	3,159.63	3,143.77	3,159.98	3,146.49
12/31/2022	3,370.75	3,055.01	3,040.48	3,213.59	3,202.99	3,236.19	3,226.96	3,239.73	3,230.74
3/31/2023	3,421.75	3,084.10	3,072.97	3,275.04	3,271.45	3,312.76	3,312.36	3,319.47	3,317.24
6/30/2023	3,405.48	3,113.19	3,105.81	3,336.49	3,341.37	3,389.33	3,400.01	3,399.22	3,406.07
9/30/2023	3,374.40	3,142.28	3,139.00	3,397.95	3,412.78	3,465.90	3,489.99	3,478.97	3,497.27
12/31/2023	3,345.77	3,171.37	3,172.55	3,459.40	3,485.72	3,542.47	3,582.35	3,558.72	3,590.91
Annual Trend		3.7%	4.3%	7.1%	8.8%	8.6%	11.0%	9.0%	11.1%
R-Squared		0.769	0.801	0.879	0.884	0.918	0.918	0.856	0.846

Notes:
(2) = Average index for Corpus Christi and Houston
(3) - (10) = (2) Fitted to linear and exponential distributions

Residential Property - Wind & Hail

Rate Level Review

Loss Trend Analysis

Modified Consumer Price Index - External Trend

Calendar Quarter Ending	Modified CPI	Fitted Trends								
		All Years		5 Years		4 Years		3 Years		
		Linear	Exponential	Linear	Exponential	Linear	Exponential	Linear	Exponential	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
9/30/2013	185.82	181.09	181.97							
12/31/2013	186.03	181.99	182.77							
3/31/2014	186.43	182.88	183.57							
6/30/2014	186.87	183.77	184.37							
9/30/2014	187.59	184.66	185.18							
12/31/2014	188.62	185.55	185.99							
3/31/2015	189.46	186.45	186.80							
6/30/2015	189.59	187.34	187.62							
9/30/2015	190.03	188.23	188.44							
12/31/2015	190.50	189.12	189.27							
3/31/2016	190.95	190.01	190.10							
6/30/2016	192.03	190.91	190.93							
9/30/2016	192.82	191.80	191.76							
12/31/2016	193.56	192.69	192.60							
3/31/2017	193.85	193.58	193.44							
6/30/2017	194.07	194.47	194.29							
9/30/2017	194.14	195.37	195.14							
12/31/2017	194.10	196.26	195.99							
3/31/2018	194.71	197.15	196.85							
6/30/2018	195.27	198.04	197.71							
9/30/2018	195.59	198.94	198.58							
12/31/2018	196.20	199.83	199.45							
3/31/2019	196.98	200.72	200.32	189.60	190.32					
6/30/2019	198.12	201.61	201.20	191.57	192.10					
9/30/2019	199.66	202.50	202.08	193.53	193.89					
12/31/2019	200.22	203.40	202.96	195.50	195.71					
3/31/2020	199.62	204.29	203.85	197.47	197.54	190.36	191.00			
6/30/2020	197.58	205.18	204.74	199.44	199.38	193.07	193.46			
9/30/2020	195.82	206.07	205.64	201.40	201.25	195.78	195.96			
12/31/2020	194.70	206.96	206.54	203.37	203.13	198.49	198.49			
3/31/2021	194.20	207.86	207.44	205.34	205.03	201.20	201.05	196.43	196.72	
6/30/2021	197.36	208.75	208.35	207.31	206.94	203.90	203.64	199.86	199.91	
9/30/2021	201.11	209.64	209.26	209.27	208.88	206.61	206.26	203.28	203.15	
12/31/2021	206.60	210.53	210.17	211.24	210.83	209.32	208.92	206.70	206.44	
3/31/2022	212.80	211.43	211.09	213.21	212.80	212.03	211.62	210.12	209.79	
6/30/2022	217.05	212.32	212.02	215.18	214.79	214.74	214.34	213.55	213.19	
9/30/2022	220.34	213.21	212.94	217.14	216.80	217.45	217.11	216.97	216.65	
12/31/2022	222.83	214.10	213.88	219.11	218.83	220.16	219.91	220.39	220.16	
3/31/2023	225.57	214.99	214.81	221.08	220.87	222.87	222.74	223.81	223.73	
6/30/2023	227.25	215.89	215.75	223.05	222.94	225.58	225.62	227.24	227.35	
9/30/2023	228.92	216.78	216.70	225.01	225.02	228.28	228.52	230.66	231.04	
12/31/2023	229.07	217.67	217.64	226.98	227.12	230.99	231.47	234.08	234.79	
Annual Trend		1.6%	1.8%	3.5%	3.8%	4.7%	5.3%	5.8%	6.6%	
R-Squared		0.754	0.772	0.794	0.791	0.897	0.894	0.952	0.945	

Notes:

(2) = Weighted average of CPI for Lodging, Apparel, Furnishings, and Medical Care

(3) - (10) = (2) Fitted to linear and exponential distributions

Texas Windstorm Insurance Association

Residential Property - Wind & Hail

Rate Level Review

Development of LAE Factor Using TWIA Commercial + Residential Experience

Accident Year Ending 12/31	Ultimate Loss	Ultimate LAE	Ultimate LAE to Loss Ratio	Hurricane Indicator
(1)	(2)	(3)	(4)	(5)
1980	12,911	1,318	0.102	H
1981	2,512	543	0.216	
1982	796	565	0.710	
1983	148,999	9,127	0.061	H
1984	999	324	0.324	
1985	512	297	0.580	
1986	881	505	0.573	H
1987	1,897	1,056	0.557	
1988	1,160	357	0.308	
1989	12,296	3,528	0.287	H
1990	335	225	0.672	
1991	1,217	729	0.599	
1992	489	554	1.133	
1993	3,375	1,375	0.407	
1994	679	507	0.747	
1995	2,977	903	0.303	
1996	1,166	582	0.499	
1997	2,964	1,343	0.453	
1998	22,401	4,732	0.211	
1999	8,773	2,388	0.272	H
2000	6,227	1,885	0.303	
2001	24,605	1,880	0.076	
2002	5,167	5,226	1.011	
2003	155,001	5,122	0.033	H
2004	5,167	1,471	0.285	
2005	154,981	20,235	0.131	H
2006	4,276	1,110	0.260	
2007	15,745	4,941	0.314	H
2008	2,583,017	346,615	0.134	H
2009	10,407	2,219	0.213	
2010	18,005	4,274	0.237	
2011	96,073	15,108	0.157	
2012	67,492	15,833	0.235	
2013	70,835	13,829	0.195	
2014	7,871	6,928	0.880	
2015	138,836	40,141	0.289	
2016	28,422	15,387	0.541	
2017	1,410,332	278,430	0.197	H
2018	12,107	6,802	0.562	
2019	17,832	9,429	0.529	
2020	65,043	30,047	0.462	H
2021	67,732	28,881	0.426	H
2022	30,224	12,361	0.409	
2023	76,706	22,433	0.292	
All Years Total	5,299,442	921,545	0.174	
Hurricane Years Total	4,635,711	731,137	0.158	
Non-Hurricane Years				
Total	663,731	190,408	0.287	
10 Year	546,398	158,251	0.290	

Notes:

(2) - (3) 2014 - 2023: from most recent TWIA annual statement; 1980 - 2013: from prior TWIA annual statements

(4) = (3) / (2)

(5) "H" indicates hurricane year

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review
Summary of Indicated Hurricane Loss & LAE Ratios

Exhibit 5

Basis for Hurricane Loss Ratio	Indicated Loss Ratio	LAE Factor	Indicated Loss & LAE Ratio
(1)	(2)	(3)	(4)
Industry Experience	33.0%	0.158	38.2%
<u>Hurricane Models</u>			
Verisk	47.8%	0.158	55.4%
RMS	42.3%	0.158	49.0%
Impact Forecasting	39.1%	0.158	45.3%
CoreLogic RQE	36.8%	0.158	42.6%
Average of Models	41.5%	0.158	48.1%

Notes:

(2) Exhibit 6, Sheet 1 & Exhibit 7, Sheet 1 - Sheet 4

(3) Exhibit 4

(4) = (2) * [1 + (3)]

Texas Windstorm Insurance Association

Residential Property - Wind & Hail

Rate Level Review

Industry Experience -- Residential Extended Coverage
Hurricane Years Only

Accident Year Ending 9/30	Earned Premium at Current TWIA Rate Level (1)	Number of Hurricanes During the Year (2)	Hurricane Year Incurred Loss Ratio (3)	Per Hurricane Loss Ratio (4)
1968	29,244,163	1	38.2%	28.3%
1970	29,832,151	1	69.7%	59.8%
1971	29,729,368	1	76.5%	66.6%
1980	50,494,372	1	74.8%	64.9%
1983	64,842,240	1	509.4%	499.5%
1986	82,608,316	1	11.1%	1.2%
1989	99,401,872	2	7.6%	0.0%
1999	183,849,422	1	8.3%	0.0%
2003	237,166,897	1	19.5%	9.6%
2005	261,099,035	1	109.3%	99.4%
2007	403,864,589	1	4.9%	0.0%
2008	501,518,052	2	408.6%	199.4%
2017	587,946,262	1	207.8%	197.9%
2020	527,999,009	3	13.1%	1.1%
2021	540,678,351	1	24.6%	14.7%
Simple Average Loss Ratio for Hurricane Years			105.6%	82.8%
(5)	Selected Non-Hurricane Loss Ratio		9.9%	
(6)	Average Hurricane Loss Ratio per Hurricane		82.8%	
(7)	Historical Hurricane Frequency 173-Year (1/1/1851 - 12/31/2023)		0.399 (1 Hurricane Every 2.5 years)	
(8)	Indicated Hurricane Loss Ratio		33.0%	

Notes:

- (1) Exhibit 6, Sheet 2. Accident years ending 9/30/xx
- (3) Exhibit 6, Sheet 2. Accident years ending 9/30/xx
- (4) = MAX((3)-(5),0)/(2)
- (5) Exhibit 6, Sheet 2
- (6) = Average of (4)
- (7) Exhibit 8
- (8) = (6) * (7)

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review

Industry Experience -- Residential Extended Coverage
Non-Hurricane Loss Ratio

Accident Year Ending 9/30	Earned Premium	Earned Premium at CMR	Earned Premium at Current TWIA Rate Level	Incurred Losses	Incurred Loss Ratio	Hurricane Indicator
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1966		13,011,528	29,309,032	1,178,131	4.0%	
1967		13,130,860	29,577,832	663,024	2.2%	
1968		12,982,730	29,244,163	11,171,683	38.2%	H
1969		12,499,176	28,154,937	3,218,757	11.4%	
1970		13,243,763	29,832,151	20,786,468	69.7%	H
1971	10,640,335	13,198,133	29,729,368	22,731,206	76.5%	H
1972	12,302,040	13,902,740	31,316,526	2,242,093	7.2%	
1973	12,935,382	12,724,690	28,662,917	4,933,261	17.2%	
1974	12,794,652	11,637,700	26,214,425	2,293,219	8.7%	
1975	13,633,616	12,392,309	27,914,214	3,062,897	11.0%	
1976	17,088,846	13,884,831	31,276,185	1,522,489	4.9%	
1977	23,643,216	17,474,220	39,361,439	972,383	2.5%	
1978	28,157,329	19,320,941	43,521,259	1,449,823	3.3%	
1979	32,867,536	21,563,567	48,572,871	3,940,899	8.1%	
1980	32,179,994	22,416,603	50,494,372		74.8%	H
1981	30,817,037	29,693,419	66,885,716		3.2%	
1982	28,140,159	32,398,474	72,978,970		2.3%	
1983	28,786,234		64,842,240		509.4%	H
1984	20,078,668		45,228,072		14.3%	
1985	30,043,452		67,674,180		6.0%	
1986	36,673,352		82,608,316		11.1%	H
1987	41,598,709		93,702,899		2.7%	
1988	45,044,392		104,280,007		11.6%	
1989	41,745,774		99,401,872		7.6%	H
1990	40,384,195		94,692,054		19.1%	
1991	46,237,137		94,920,886		91.2%	
1992	44,512,572		112,660,893		6.4%	
1993	50,741,120		177,222,041		7.7%	
1994	57,584,585		177,917,398		4.1%	
1995	60,740,049		166,814,882		6.4%	
1996	71,865,572		177,632,754		3.6%	
1997	79,154,547		195,649,179		4.5%	
1998	80,238,260		198,129,701		20.5%	
1999	71,026,552		183,849,422		8.3%	H
2000	75,114,174		195,990,800		4.9%	
2001	74,726,401		171,328,385		6.5%	
2002	86,289,350		182,396,099		16.6%	
2003	112,200,741		237,166,897		19.5%	H
2004	123,050,217		248,017,395		1.6%	
2005	135,380,924		261,099,035		109.3%	H
2006	154,699,767		297,641,804		1.9%	
2007	219,914,305		403,864,589		4.9%	H
2008	289,558,186		501,518,052		408.6%	H
2009	327,305,758		515,061,744		1.8%	
2010	355,219,215		524,962,456		3.6%	
2011	370,875,863		534,562,855		17.5%	
2012	406,981,851		558,681,023		12.7%	
2013	440,952,159		576,566,713		16.5%	
2014	477,983,216		595,350,329		2.1%	
2015	517,579,765		614,090,012		23.4%	
2016	541,982,800		612,650,713		8.1%	
2017	533,284,592		587,946,262		207.8%	H
2018	516,732,311		556,428,278		3.3%	
2019	509,685,524		535,169,800		6.4%	
2020	502,856,199		527,999,009		13.1%	H
2021	514,931,763		540,678,351		24.6%	H
2022	562,949,434		575,799,472		8.5%	
2023	681,526,801		681,526,801		16.8%	
Total / Average	9,633,436,628	285,475,684	13,816,770,046		34.8%	
Average of Non-Hurricane Years Selected					9.9%	

Notes: (2), (3) Provided by TDI. Accident years ending 9/30/xx as of 12/31/2023
(4) 1983 - 2023: Sum of Exhibit 6, Sheet 4 - Sheet 7, (4); 1966 - 1982: (3) * 2.3
(5) Provided by TDI. Accident years ending 9/30/xx as of 12/31/2010
(6) 1983 - 2023: Exhibit 6, Sheet 3; 1966 - 1982: (5) / (4)
(7) "H" indicates hurricane year

Residential Property - Wind & Hail

Rate Level Review

Industry Experience -- Residential Extended Coverage

Summary by Territory

Accident Year Ending 9/30	Loss Ratios by Territory / Tier				Weighted Loss Ratio (6)	Developed Weighted Loss Ratio (7)
	Territory 8 (1)	Territory 9 (2)	Territory 10 (3)	Tier 2 (4)		
1983	1222.4%	7.2%	165.5%	168.7%	509.4%	509.4%
1984	3.7%	6.8%	24.2%	38.5%	14.3%	14.3%
1985	1.9%	8.3%	8.1%	12.8%	6.0%	6.0%
1986	1.2%	2.8%	21.2%	14.1%	11.1%	11.1%
1987	0.6%	4.1%	3.7%	7.4%	2.7%	2.7%
1988	5.5%	6.8%	17.9%	7.2%	11.6%	11.6%
1989	6.0%	6.2%	9.1%	16.8%	7.6%	7.6%
1990	32.2%	11.6%	11.8%	23.8%	19.1%	19.1%
1991	74.5%	16.4%	131.9%	19.6%	91.2%	91.2%
1992	1.2%	11.8%	8.0%	18.1%	6.4%	6.4%
1993	9.3%	8.3%	6.0%	16.1%	7.7%	7.7%
1994	1.9%	4.9%	5.4%	6.4%	4.1%	4.1%
1995	2.7%	8.2%	8.2%	21.5%	6.4%	6.4%
1996	1.4%	5.0%	4.6%	9.5%	3.6%	3.6%
1997	1.8%	4.2%	6.6%	8.1%	4.5%	4.5%
1998	18.6%	10.5%	25.8%	9.9%	20.5%	20.5%
1999	2.0%	17.2%	9.8%	9.9%	8.3%	8.3%
2000	0.8%	2.2%	8.8%	10.0%	4.9%	4.9%
2001	4.8%	6.8%	7.0%	31.2%	6.5%	6.5%
2002	23.2%	5.5%	15.7%	10.1%	16.6%	16.6%
2003	4.9%	7.8%	34.8%	9.8%	19.5%	19.5%
2004	1.2%	1.8%	1.8%	3.7%	1.6%	1.6%
2005	48.7%	2.6%	193.9%	35.4%	109.3%	109.3%
2006	1.0%	1.6%	2.6%	4.7%	1.9%	1.9%
2007	2.5%	1.5%	7.9%	4.7%	4.9%	4.9%
2008	661.5%	2.1%	364.0%	398.5%	408.6%	408.6%
2009	2.8%	0.8%	1.2%	8.9%	1.8%	1.8%
2010	1.1%	5.3%	4.6%	10.4%	3.6%	3.6%
2011	1.0%	26.0%	27.1%	5.7%	17.5%	17.5%
2012	7.9%	27.5%	9.1%	81.0%	12.7%	12.7%
2013	38.8%	8.7%	2.7%	18.7%	16.5%	16.5%
2014	0.5%	2.3%	2.9%	16.8%	2.1%	2.1%
2015	12.1%	11.6%	35.7%	33.4%	23.4%	23.4%
2016	7.9%	12.1%	6.1%	34.4%	8.1%	8.1%
2017	29.5%	326.6%	302.6%	58.1%	207.8%	207.8%
2018	2.4%	2.0%	4.3%	9.9%	3.3%	3.3%
2019	5.2%	1.7%	8.3%	30.9%	6.4%	6.4%
2020	5.4%	4.0%	21.1%	44.6%	13.1%	13.1%
2021	24.4%	2.3%	31.9%	43.2%	24.5%	24.6%
2022	8.9%	2.2%	9.8%	18.8%	8.3%	8.5%
2023	18.0%	2.6%	14.7%	41.5%	14.2%	16.8%
Average	56.1%	14.8%	38.7%	33.5%	40.8%	40.8%

TWIA 2023 Written Premium by Territory / Tier

	Territory 8	Territory 9	Territory 10	Tier 2	Total
(8) Amount	183,156,184	86,684,858	246,412,664	6,678,115	522,931,821
(9) % Share	35.0%	16.6%	47.1%	1.3%	100.0%

Notes:

- (2) Exhibit 6, Sheet 4
- (3) Exhibit 6, Sheet 5
- (4) Exhibit 6, Sheet 6
- (5) Exhibit 6, Sheet 7
- (6) = Weighted average of (2) to (5), using (9)
- (7) = (6) * loss development factors from Exhibit 3, Sheet 1
- (8) Provided by TWIA
- (9) = (8) / (8) Total

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review
Industry Experience -- Residential Extended Coverage
Tier 1 -- Territory 8 (Galveston County)

Accident Year Ending 9/30	Earned Premium	Factor to TWIA Rate Level	Earned Premium at Current TWIA Rate Level	Incurred Loss	Incurred Loss Ratio
(1)	(2)	(3)	(4)	(5)	(6)
1983	4,317,605	2.253	9,725,593	118,889,570	1222.4%
1984	3,512,853	2.253	7,912,854	292,543	3.7%
1985	6,066,870	2.253	13,665,888	265,705	1.9%
1986	6,846,710	2.253	15,422,512	187,218	1.2%
1987	7,738,740	2.253	17,431,848	111,242	0.6%
1988	8,043,378	2.315	18,620,820	1,026,666	5.5%
1989	8,149,957	2.381	19,406,059	1,163,813	6.0%
1990	7,816,199	2.345	18,327,267	5,908,943	32.2%
1991	8,645,208	2.053	17,747,872	13,225,287	74.5%
1992	5,826,467	2.531	14,746,731	180,484	1.2%
1993	5,825,916	3.493	20,348,008	1,900,088	9.3%
1994	6,996,874	3.090	21,618,035	420,038	1.9%
1995	8,737,576	2.746	23,996,650	644,169	2.7%
1996	11,652,672	2.472	28,802,335	406,004	1.4%
1997	12,573,252	2.472	31,077,765	573,343	1.8%
1998	13,838,930	2.469	34,172,016	6,371,206	18.6%
1999	14,103,814	2.588	36,507,166	742,130	2.0%
2000	15,784,218	2.609	41,184,790	324,948	0.8%
2001	17,776,666	2.293	40,757,315	1,947,817	4.8%
2002	20,514,469	2.114	43,362,931	10,059,284	23.2%
2003	25,868,450	2.114	54,680,031	2,672,918	4.9%
2004	30,357,860	2.016	61,188,656	731,759	1.2%
2005	36,780,457	1.929	70,935,709	34,527,644	48.7%
2006	43,562,211	1.924	83,813,540	813,430	1.0%
2007	59,282,257	1.836	108,869,700	2,757,645	2.5%
2008	73,789,694	1.732	127,804,584	845,467,368	661.5%
2009	81,999,709	1.574	129,038,100	3,581,024	2.8%
2010	89,665,314	1.478	132,512,323	1,451,547	1.1%
2011	93,230,854	1.441	134,378,525	1,329,886	1.0%
2012	99,629,727	1.373	136,765,897	10,756,644	7.9%
2013	107,104,250	1.308	140,044,093	54,338,085	38.8%
2014	114,784,032	1.246	142,968,851	691,708	0.5%
2015	122,782,019	1.186	145,676,506	17,666,484	12.1%
2016	127,007,324	1.130	143,567,522	11,304,310	7.9%
2017	126,002,753	1.103	138,918,035	40,971,158	29.5%
2018	122,707,170	1.077	132,133,675	3,153,959	2.4%
2019	121,980,686	1.050	128,079,720	6,648,705	5.2%
2020	121,816,746	1.050	127,907,583	6,942,693	5.4%
2021	126,003,547	1.050	132,303,724	32,338,822	24.4%
2022	138,162,407	1.023	141,316,140	12,526,177	8.9%
2023	166,969,215	1.000	166,969,215	30,038,690	18.0%
Total	2,224,255,056		3,054,706,584	1,285,351,154	42.1%

Notes:

(2) Provided by TDI. Accident years ending 9/30/xx as of 12/31/2023

(3) 1987 and prior judgementally selected; 1988 - 2023 based on TWIA on-level factors

(4) = (2) * (3)

(5) Provided by TDI. Accident years ending 9/30/xx as of 12/31/2023; 2008 IKE incurred loss was adjusted down by \$206,858,309 to incorporate the statutory limitations on litigation cost that House Bill 3 provides

(6) = (5) / (4)

Texas Windstorm Insurance Association

Residential Property - Wind & Hail

Rate Level Review

Industry Experience -- Residential Extended Coverage

Tier 1 -- Territory 9 (Nueces County)

Accident Year Ending 9/30	Earned Premium	Factor to TWIA Rate Level	Earned Premium at Current TWIA Rate Level	Incurred Loss	Incurred Loss Ratio
(1)	(2)	(3)	(4)	(5)	(6)
1983	2,331,938	2.253	5,252,792	377,010	7.2%
1984	1,632,317	2.253	3,676,865	249,086	6.8%
1985	2,505,564	2.253	5,643,892	467,721	8.3%
1986	2,977,992	2.253	6,708,056	189,449	2.8%
1987	3,639,667	2.253	8,198,508	335,212	4.1%
1988	3,971,251	2.315	9,193,644	626,491	6.8%
1989	3,702,536	2.381	8,816,198	550,215	6.2%
1990	3,519,306	2.345	8,251,998	955,271	11.6%
1991	4,065,190	2.053	8,345,487	1,367,254	16.4%
1992	3,907,712	2.531	9,890,381	1,170,578	11.8%
1993	4,552,395	3.493	15,900,017	1,312,776	8.3%
1994	5,710,806	3.090	17,644,510	856,369	4.9%
1995	6,908,552	2.746	18,973,465	1,552,987	8.2%
1996	8,568,168	2.472	21,178,253	1,061,115	5.0%
1997	8,425,344	2.472	20,825,231	882,561	4.2%
1998	8,803,621	2.469	21,738,493	2,289,890	10.5%
1999	8,465,256	2.588	21,911,980	3,778,386	17.2%
2000	8,437,094	2.609	22,014,391	485,581	2.2%
2001	8,894,552	2.293	20,392,915	1,394,445	6.8%
2002	10,534,795	2.114	22,268,165	1,227,528	5.5%
2003	13,881,847	2.114	29,343,073	2,295,803	7.8%
2004	15,458,506	2.016	31,157,835	569,877	1.8%
2005	17,471,646	1.929	33,696,253	872,451	2.6%
2006	19,888,512	1.924	38,265,427	621,501	1.6%
2007	29,704,042	1.836	54,550,388	833,793	1.5%
2008	40,565,108	1.732	70,259,226	1,468,028	2.1%
2009	46,363,445	1.574	72,959,416	615,469	0.8%
2010	51,529,115	1.478	76,152,555	4,059,049	5.3%
2011	52,931,755	1.441	76,293,318	19,845,538	26.0%
2012	56,334,273	1.373	77,332,415	21,291,155	27.5%
2013	60,101,696	1.308	78,585,934	6,825,640	8.7%
2014	65,642,137	1.246	81,760,335	1,914,066	2.3%
2015	72,124,134	1.186	85,572,724	9,924,249	11.6%
2016	76,436,084	1.130	86,402,412	10,445,691	12.1%
2017	77,008,517	1.103	84,901,890	277,308,178	326.6%
2018	77,031,486	1.077	82,949,133	1,671,270	2.0%
2019	76,506,580	1.050	80,331,909	1,370,278	1.7%
2020	73,290,165	1.050	76,954,673	3,057,424	4.0%
2021	71,903,454	1.050	75,498,627	1,760,966	2.3%
2022	74,944,777	1.023	76,655,487	1,690,303	2.2%
2023	87,065,823	1.000	87,065,823	2,251,737	2.6%
Total	1,267,737,157		1,733,514,093	391,822,391	22.6%

Notes:

(2) Provided by TDI. Accident years ending 9/30/xx as of 12/31/2023

(3) 1987 and prior judgementally selected; 1988 - 2023 based on TWIA on-level factors

(4) = (2) * (3)

(5) Provided by TDI. Accident years ending 9/30/xx as of 12/31/2023

(6) = (5) / (4)

Texas Windstorm Insurance Association

Residential Property - Wind & Hail

Rate Level Review

Industry Experience -- Residential Extended Coverage

Tier 1 -- Territory 10 (Other Tier 1)

Accident Year Ending 9/30	Earned Premium	Factor to TWIA Rate Level	Earned Premium at Current TWIA Rate Level	Incurred Loss	Incurred Loss Ratio
(1)	(2)	(3)	(4)	(5)	(6)
1983	5,888,781	2.253	13,264,735	21,953,626	165.5%
1984	3,924,651	2.253	8,840,447	2,135,063	24.2%
1985	5,808,825	2.253	13,084,631	1,055,065	8.1%
1986	6,993,722	2.253	15,753,663	3,338,312	21.2%
1987	7,677,374	2.253	17,293,618	634,637	3.7%
1988	8,284,768	2.315	19,179,650	3,434,130	17.9%
1989	7,733,295	2.381	18,413,935	1,670,422	9.1%
1990	7,568,146	2.345	17,745,638	2,095,151	11.8%
1991	8,287,605	2.053	17,013,744	22,444,044	131.9%
1992	8,059,407	2.531	20,398,281	1,625,108	8.0%
1993	8,448,603	3.493	29,508,193	1,776,572	6.0%
1994	9,743,293	3.090	30,103,566	1,637,915	5.4%
1995	10,745,995	2.746	29,512,519	2,416,675	8.2%
1996	13,294,968	2.472	32,861,658	1,520,229	4.6%
1997	15,708,220	2.472	38,826,580	2,569,544	6.6%
1998	16,168,136	2.469	39,923,448	10,312,506	25.8%
1999	14,452,667	2.588	37,410,157	3,655,754	9.8%
2000	14,453,385	2.609	37,712,329	3,332,580	8.8%
2001	15,173,521	2.293	34,788,975	2,426,814	7.0%
2002	17,843,905	2.114	37,717,965	5,925,066	15.7%
2003	23,423,208	2.114	49,511,345	17,213,668	34.8%
2004	27,306,202	2.016	55,037,799	990,613	1.8%
2005	31,012,304	1.929	59,811,105	115,989,785	193.9%
2006	36,545,725	1.924	70,313,845	1,842,548	2.6%
2007	69,945,120	1.836	128,451,658	10,105,722	7.9%
2008	110,187,567	1.732	190,846,112	694,640,836	364.0%
2009	128,275,387	1.574	201,859,402	2,522,159	1.2%
2010	143,236,007	1.478	211,682,034	9,656,553	4.6%
2011	151,387,931	1.441	218,203,374	59,070,022	27.1%
2012	170,159,709	1.373	233,585,355	21,200,719	9.1%
2013	183,495,510	1.308	239,929,437	6,485,250	2.7%
2014	197,640,983	1.246	246,171,037	7,234,983	2.9%
2015	212,320,998	1.186	251,911,325	90,056,094	35.7%
2016	218,795,204	1.130	247,323,416	15,021,245	6.1%
2017	212,533,686	1.103	234,318,389	709,120,869	302.6%
2018	201,509,514	1.077	216,989,706	9,319,007	4.3%
2019	194,433,202	1.050	204,154,862	16,886,746	8.3%
2020	186,265,421	1.050	195,578,692	41,308,139	21.1%
2021	186,593,305	1.050	195,922,970	62,523,768	31.9%
2022	199,153,387	1.023	203,699,317	19,980,740	9.8%
2023	243,081,044	1.000	243,081,044	35,652,679	14.7%
Total	3,333,560,682		4,407,735,955	2,042,781,358	46.3%

Notes:

(2) Provided by TDI. Accident years ending 9/30/xx as of 12/31/2023

(3) 1987 and prior judgementally selected; 1988 - 2023 based on TWIA on-level factors

(4) = (2) * (3)

(5) Provided by TDI. Accident years ending 9/30/xx as of 12/31/2023

(6) = (5) / (4)

Texas Windstorm Insurance Association

Residential Property - Wind & Hail

Rate Level Review

Industry Experience -- Residential Extended Coverage

Tier 2 -- (Territories 1 and 11)

Accident Year Ending 9/30	Earned Premium	Factor to TWIA Rate Level	Earned Premium at Current TWIA Rate Level	Incurred Loss	Incurred Loss Ratio
(1)	(2)	(3)	(4)	(5)	(6)
1983	16,247,909	2.253	36,599,121	61,752,490	168.7%
1984	11,008,847	2.253	24,797,906	9,535,536	38.5%
1985	15,662,193	2.253	35,279,770	4,532,749	12.8%
1986	19,854,927	2.253	44,724,085	6,306,903	14.1%
1987	22,542,928	2.253	50,778,924	3,739,010	7.4%
1988	24,744,994	2.315	57,285,893	4,139,098	7.2%
1989	22,159,987	2.381	52,765,680	8,884,751	16.8%
1990	21,480,544	2.345	50,367,151	11,997,188	23.8%
1991	25,239,134	2.053	51,813,783	10,178,608	19.6%
1992	26,718,987	2.531	67,625,500	12,221,034	18.1%
1993	31,914,206	3.493	111,465,824	17,910,197	16.1%
1994	35,133,612	3.090	108,551,287	6,968,697	6.4%
1995	34,347,927	2.746	94,332,248	20,240,594	21.5%
1996	38,349,764	2.472	94,790,509	9,046,495	9.5%
1997	42,447,731	2.472	104,919,603	8,514,675	8.1%
1998	41,427,572	2.469	102,295,744	10,127,907	9.9%
1999	34,004,815	2.588	88,020,119	8,680,187	9.9%
2000	36,439,477	2.609	95,079,289	9,518,422	10.0%
2001	32,881,662	2.293	75,389,180	23,547,404	31.2%
2002	37,396,181	2.114	79,047,038	7,950,367	10.1%
2003	49,027,236	2.114	103,632,448	10,177,909	9.8%
2004	49,927,649	2.016	100,633,105	3,738,542	3.7%
2005	50,116,517	1.929	96,655,968	34,201,898	35.4%
2006	54,703,319	1.924	105,248,992	4,909,932	4.7%
2007	60,982,886	1.836	111,992,843	5,242,698	4.7%
2008	65,015,817	1.732	112,608,130	448,708,417	398.5%
2009	70,667,217	1.574	111,204,827	9,952,501	8.9%
2010	70,788,779	1.478	104,615,544	10,829,031	10.4%
2011	73,325,323	1.441	105,687,638	5,993,038	5.7%
2012	80,858,142	1.373	110,997,356	89,893,832	81.0%
2013	90,250,703	1.308	118,007,249	22,061,511	18.7%
2014	99,916,064	1.246	124,450,105	20,930,082	16.8%
2015	110,352,614	1.186	130,929,458	43,780,541	33.4%
2016	119,744,188	1.130	135,357,362	46,503,584	34.4%
2017	117,739,636	1.103	129,807,949	75,399,831	58.1%
2018	115,484,141	1.077	124,355,765	12,323,854	9.9%
2019	116,765,056	1.050	122,603,309	37,912,359	30.9%
2020	121,483,867	1.050	127,558,060	56,914,326	44.6%
2021	130,431,457	1.050	136,953,030	59,218,023	43.2%
2022	150,688,863	1.023	154,128,528	29,043,816	18.8%
2023	184,410,719	1.000	184,410,719	76,562,111	41.5%
Total	2,552,683,589		3,977,767,036	1,360,090,148	34.2%

Notes:

(2) Provided by TDI. Accident years ending 9/30/xx as of 12/31/2023

(3) 1987 and prior judgementally selected; 1988 - 2023 based on TWIA on-level factors

(4) = (2) * (3)

(5) Provided by TDI. Accident years ending 9/30/xx as of 12/31/2023

(6) = (5) / (4)

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review

Hurricane Loss Ratio -- Verisk (AIR) Model

Model Version: Verisk Touchstone 10.0 Tropical Cyclone (TC) and Severe Thunderstorm (ST)

County	TWIA Insured Values (000s) as of 11/30/23	Modeled Loss Cost	Expected Annual Hurricane Loss
(1)	(2)	(3)	(4)
Aransas	3,019,446	2.362	7,130,987
Brazoria	18,080,728	1.745	31,545,775
Calhoun	1,381,279	2.980	4,116,508
Cameron	2,885,907	1.972	5,691,480
Chambers	3,031,783	1.506	4,564,387
Galveston	32,274,036	3.671	118,466,683
Harris	1,721,743	4.100	7,058,324
Jefferson	9,595,251	2.005	19,237,055
Kenedy	6,832	1.186	8,105
Kleberg	259,620	0.937	243,330
Matagorda	1,683,218	2.523	4,247,464
Nueces	14,858,281	2.651	39,395,490
Refugio	120,043	1.655	198,697
San Patricio	2,873,434	2.085	5,990,663
Willacy	110,591	2.208	244,158
Total	91,902,192	2.700	248,139,105
(5) In-Force Premium as of 11/30/23 at Present Rates			519,593,434
(6) Indicated Hurricane Loss Ratio			47.8%

Notes:

(2) Provided by TWIA and geo-coded by Verisk

(3) = (4) / (2)

(4) Provided by Verisk using Verisk Touchstone v10 (versus Verisk Touchstone v9 for prior year results)

(5) Provided by TWIA

(6) = (4) Total / (5)

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review

Hurricane Loss Ratio -- RMS Model

Model Version: RMS RiskLink 23.0 Windstorm/Hurricane and Convective Storm (WS/CS)

County	TWIA Insured Values (000s) as of 11/30/23	Modeled Loss Cost	Expected Annual Hurricane Loss
(1)	(2)	(3)	(4)
Aransas	3,019,446	2.363	7,135,048
Brazoria	18,080,728	1.705	30,834,292
Calhoun	1,381,279	3.612	4,989,208
Cameron	2,885,907	2.300	6,637,744
Chambers	3,031,783	1.556	4,717,165
Galveston	32,274,036	2.941	94,928,484
Harris	1,721,743	2.969	5,111,354
Jefferson	9,595,251	1.973	18,934,837
Kenedy	6,832	1.999	13,657
Kleberg	259,620	1.488	386,420
Matagorda	1,683,218	2.848	4,793,423
Nueces	14,858,281	2.303	34,211,677
Refugio	120,043	2.299	275,977
San Patricio	2,873,434	2.189	6,289,812
Willacy	110,591	2.648	292,800
Total	91,902,192	2.389	219,551,899
(5) In-Force Premium as of 11/30/23 at Present Rates			519,593,434
(6) Indicated Hurricane Loss Ratio			42.3%

Notes:

(2) Provided by TWIA and geo-coded by RMS

(3) = (4) / (2)

(4) Provided by RMS using RMS RiskLink v23 (versus RMS RiskLink v21 for prior year results)

(5) Provided by TWIA

(6) = (4) Total / (5)

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review

Hurricane Loss Ratio -- Impact Forecasting Model

Model Version: Impact Forecasting ELEMENTS 18.0 Atlantic Tropical Cyclone and Severe Convective Storm

County	TWIA Insured Values (000s) as of 11/30/23	Modeled Loss Cost	Expected Annual Hurricane Loss
(1)	(2)	(3)	(4)
Aransas	3,019,446	3.159	9,537,972
Brazoria	18,080,728	2.017	36,462,163
Calhoun	1,381,279	3.821	5,278,236
Cameron	2,885,907	2.089	6,030,006
Chambers	3,031,783	1.729	5,240,955
Galveston	32,274,036	2.136	68,952,922
Harris	1,721,743	2.019	3,476,176
Jefferson	9,595,251	1.699	16,305,713
Kenedy	6,832	3.199	21,857
Kleberg	259,620	2.268	588,693
Matagorda	1,683,218	3.376	5,682,960
Nueces	14,858,281	2.403	35,711,619
Refugio	120,043	3.593	431,262
San Patricio	2,873,434	3.107	8,929,010
Willacy	110,591	4.024	445,071
Total	91,902,192	2.210	203,094,616
(5) In-Force Premium as of 11/30/23 at Present Rates			519,593,434
(6) Indicated Hurricane Loss Ratio			39.1%

Notes:

(2) Provided by TWIA and geo-coded by Impact Forecasting

(3) = (4) / (2)

(4) Provided by Impact Forecasting using Impact Forecasting v18 (versus Impact Forecasting v15 for prior year results)

(5) Provided by TWIA

(6) = (4) Total / (5)

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review

Hurricane Loss Ratio -- CoreLogic RQE Model

Model Version: CoreLogic Risk Quantification & Engineering (RQE) v23 North Atlantic Hurricane (HU) and Severe Convective Storm (SCS)

County	TWIA Insured Values (000s) as of 11/30/23	Modeled Loss Cost	Expected Annual Hurricane Loss
(1)	(2)	(3)	(4)
Aransas	3,019,446	1.977	5,969,619
Brazoria	18,080,728	1.664	30,079,143
Calhoun	1,381,279	3.145	4,343,879
Cameron	2,885,907	1.474	4,254,515
Chambers	3,031,783	1.574	4,773,163
Galveston	32,274,036	2.327	75,108,889
Harris	1,721,743	3.287	5,659,587
Jefferson	9,595,251	2.652	25,448,796
Kenedy	6,832	1.788	12,216
Kleberg	259,620	1.124	291,691
Matagorda	1,683,218	2.524	4,248,231
Nueces	14,858,281	1.712	25,431,969
Refugio	120,043	2.142	257,093
San Patricio	2,873,434	1.866	5,361,063
Willacy	110,591	2.025	223,949
Total	91,902,192	2.083	191,463,801
(5) In-Force Premium as of 11/30/23 at Present Rates			519,593,434
(6) Indicated Hurricane Loss Ratio			36.8%

Notes:

(2) Provided by TWIA and geo-coded by CoreLogic RQE

(3) = (4) / (2)

(4) Provided by CoreLogic RQE using CoreLogic RQE v23 (versus CoreLogic RQE v21 for prior year results)

(5) Provided by TWIA

(6) = (4) Total / (5)

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review
Texas Hurricanes 1850 - 2023

<u>Landfall</u>			<u>Landfall</u>		
Year	Month	Name	Year	Month	Name
(1)		(2)	(1)		(2)
1851	Jun		1933	Sep	
1854	Jun		1934	Jul	
1854	Sep	"Matagorda"	1936	Jun	
1865	Sep	"Sabine River-Lake Calcasieu"	1940	Aug	
1866	Jul		1941	Sep	
1867	Oct	"Galveston"	1942	Aug	
1869	Aug	"Lower Texas Coast"	1942	Aug	
1875	Sep		1943	Jul	
1879	Aug		1945	Aug	
1880	Aug		1947	Aug	
1882	Sep		1949	Oct	
1886	Jun		1957	Jun	Audrey
1886	Aug	"Indianola"	1959	Jul	Debra
1886	Sep		1961	Sep	Carla
1886	Oct		1963	Sep	Cindy
1887	Sep		1967	Sep	Beulah
1888	Jun		1970	Aug	Celia
1891	Jul		1971	Sep	Fern
1895	Aug		1980	Aug	Allen
1897	Sep		1983	Aug	Alicia
1900	Sep	"Galveston"	1986	Jun	Bonnie
1909	Jun		1989	Aug	Chantal
1909	Jul	"Velasco"	1989	Oct	Jerry
1909	Aug		1999	Aug	Bret
1910	Sep		2003	Jul	Claudette
1912	Oct		2005	Sep	Rita
1913	Jun		2007	Sep	Humberto
1915	Aug	"Galveston"	2008	Jul	Dolly
1916	Aug		2008	Sep	Ike
1918	Aug		2017	Aug	Harvey
1919	Sep		2020	Jul	Hanna
1921	Jun		2020	Aug	Laura
1929	Jun		2020	Oct	Delta
1932	Aug	"Freeport"	2021	Sep	Nicholas
1933	July				

Frequency	Date Period	Hurricanes	Period	Annual Frequency
173-Year	1/1/1851 - 12/31/2023	69	173	0.399

Notes:
(1), (2) from NOAA Technical Memorandum NWS-NHC-6, updated with actual experience through 2023

Texas Windstorm Insurance Association

Residential Property - Wind & Hail

Rate Level Review

Calculation of TWIA Earned Premium at Present Rate Level
Tier 1 -- Territory 8 (Galveston County)

Accident Year Ending 9/30	TWIA Earned Premium	Factor to Current Rate Level	Earned Premium at Current Rate Level
(1)	(2)	(3)	(4)
2014	113,521,698	1.246	141,396,555
2015	121,221,015	1.186	143,824,430
2016	123,942,872	1.130	140,103,503
2017	120,650,271	1.103	133,016,924
2018	112,717,188	1.077	121,376,251
2019	109,182,096	1.050	114,641,201
2020	108,043,628	1.050	113,445,809
2021	112,324,499	1.050	117,940,724
2022	126,572,677	1.023	129,461,860
2023	159,933,055	1.000	159,933,055
Total	1,208,108,999		1,315,140,312

Notes:

- (2) Provided by TWIA
- (3) Provided by TWIA
- (4) = (2) * (3)

Texas Windstorm Insurance Association

Residential Property - Wind & Hail

Rate Level Review

Calculation of TWIA Earned Premium at Present Rate Level

Tier 1 -- Territory 9 (Nueces County)

Accident Year Ending 9/30	TWIA Earned Premium	Factor to Current Rate Level	Earned Premium at Current Rate Level
(1)	(2)	(3)	(4)
2014	62,828,148	1.246	78,255,381
2015	68,716,114	1.186	81,529,229
2016	71,234,774	1.130	80,522,915
2017	69,126,281	1.103	76,211,725
2018	63,899,693	1.077	68,808,541
2019	59,870,593	1.050	62,864,123
2020	57,494,711	1.050	60,369,447
2021	57,000,700	1.050	59,850,735
2022	61,194,933	1.023	62,591,785
2023	76,445,090	1.000	76,445,090
Total	647,811,037		707,448,971

Notes:

(2) Provided by TWIA

(3) Provided by TWIA

(4) = (2) * (3)

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review

Calculation of TWIA Earned Premium at Present Rate Level
Tier 1 -- Territory 10 (Other Tier 1)

Accident Year Ending 9/30	TWIA Earned Premium	Factor to Current Rate Level	Earned Premium at Current Rate Level
(1)	(2)	(3)	(4)
2014	187,152,484	1.246	233,107,124
2015	200,595,693	1.186	237,999,667
2016	200,978,477	1.130	227,183,607
2017	188,554,673	1.103	207,881,527
2018	166,829,909	1.077	179,645,974
2019	151,980,115	1.050	159,579,121
2020	141,633,299	1.050	148,714,964
2021	140,039,840	1.050	147,041,832
2022	153,747,607	1.023	157,257,092
2023	211,507,410	1.000	211,507,410
Total	1,743,019,507		1,909,918,318

Notes:

- (2) Provided by TWIA
- (3) Provided by TWIA
- (4) = (2) * (3)

Texas Windstorm Insurance Association

Residential Property - Wind & Hail

Rate Level Review

Calculation of TWIA Earned Premium at Present Rate Level

Tier 2 -- (Territories 1 and 11)

Accident Year Ending 9/30	TWIA Earned Premium	Factor to Current Rate Level	Earned Premium at Current Rate Level
(1)	(2)	(3)	(4)
2014	3,920,276	1.246	4,882,886
2015	4,202,726	1.186	4,986,385
2016	4,436,708	1.130	5,015,200
2017	4,435,808	1.103	4,890,478
2018	4,301,050	1.077	4,631,462
2019	4,296,061	1.050	4,510,864
2020	4,367,811	1.050	4,586,202
2021	4,523,216	1.050	4,749,377
2022	4,935,851	1.023	5,048,518
2023	5,922,961	1.000	5,922,961
Total	45,342,468		49,224,333

Notes:

(2) Provided by TWIA

(3) Provided by TWIA

(4) = (2) * (3)

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review

Calculation of TWIA Earned Premium at Present Rate Level

Accident Year Ending 9/30 (1)	Earned Premium at Manual Rates (2)	Factor to Current Rate Level (3)	Earned Premium at Current Rate Level (4)
2008	219,412,771	1.732	380,025,401
2009	250,693,788	1.574	394,502,010
2010	273,154,916	1.478	403,683,330
2011	292,239,327	1.441	421,219,887
2012	323,323,869	1.373	443,840,208
2013	346,955,938	1.308	453,662,015
2014	372,022,089	1.246	463,370,816
2015	403,803,905	1.186	479,098,995
2016	405,934,590	1.130	458,863,484
2017	376,421,384	1.103	415,004,576
2018	341,468,875	1.077	367,700,905
2019	322,259,386	1.050	338,372,355
2020	311,420,426	1.050	326,991,447
2021	319,441,102	1.050	335,413,157
2022	369,077,295	1.023	377,501,954
2023	477,497,545	1.000	477,497,545
Total	5,405,127,207		6,536,748,087

Notes:

- (2) Provided by TWIA
- (3) Based on historical rate changes
- (4) = (2) * (3)

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review

Expenses and Variable Permissible Loss & LAE Ratios

Expense Category	2021	2022	2023	Projected 2024	Selected
(1) Direct Written Premium	395,112,773	518,299,032	653,043,231	815,861,000	
(2) Direct Earned Premium	378,504,197	443,490,204	589,353,024	743,860,000	
(3) Commission					
\$ Amount	63,161,029	82,854,389	104,392,398	130,538,000	
% of DWP	16.0%	16.0%	16.0%	16.0%	16.0%
(4) Other Acquisition					
\$ Amount	0	0	0	0	
% of DWP	0.0%	0.0%	0.0%	0.0%	0.0%
(5) General Expense					
Unadjusted \$ Amount	29,979,903	35,578,580	36,234,634	40,243,000	
Adjustments					
Contribution to Statutory Fund	0	0	0	0	
Adjusted \$ Amount	29,979,903	35,578,580	36,234,634	40,243,000	
% of DWP	7.6%	6.9%	5.5%	4.9%	5.2%
(6) Taxes, Licenses & Fees					
\$ Amount	7,364,210	9,499,183	11,379,394	14,889,000	
% of DWP	1.9%	1.8%	1.7%	1.8%	1.8%
(7) Reinsurance Expense					44.0%
(8) Outstanding Class 1 Public Security Repayment					0.0%
(9) Total Fixed Expenses					49.2%
(10) Total Variable Expenses					17.8%
(11) CRTF Contribution & UW Contingency & Uncertainty					5.0%
(12) Permissible Loss, LAE and Fixed Expense Ratio					77.2%

Notes:

- (1) - (6) From TWIA's Statutory Annual Statements and Insurance Expense Exhibits. 2024 figures are projected
- (7) Exhibit 10, Sheet 2
- (8) Outstanding principal paid off in 2023
- (9) = (5) + (7) + (8)
- (10) = (3) + (4) + (6)
- (11) CRTF contribution selected judgmentally
- (12) = 100% - (10) - (11)

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review
Development of Reinsurer Expense
Using Average of Verisk and RMS Hurricane Models

	Combined	Residential	Commercial
(1) 2024 - 2025 Reinsurance Premium	370,310,168	288,590,979	81,719,188
(2a) Average Annual Loss by Reinsurance Layer (Verisk)			
100% of \$4050M XS \$2450M	74,647,712	58,850,299	15,797,414
Total	74,647,712	58,850,299	15,797,414
(2b) Average Annual Loss by Reinsurance Layer (RMS)			
100% of \$4050M XS \$2450M	58,200,781	44,681,498	13,519,283
Total	58,200,781	44,681,498	13,519,283
(2c) Selected Total Average Annual Loss	66,424,247	51,765,898	14,658,349
(3) Net Cost of Reinsurance	293,390,890	228,646,069	64,744,821
(4) TWIA In-Force Premium as of 11/30/23 at Present Rates	648,004,892	519,593,434	128,411,458
(5) Indicated Reinsurance Expense %	45.3%	44.0%	50.4%

Notes:

- (1) From TWIA reinsurance contract effective 6/1/2024 through 5/31/2025
- (2a) Provided by Aon, based on Verisk model using TWIA exposures as of 11/30/2023
- (2b) Provided by Aon, based on RMS model using TWIA exposures as of 11/30/2023
- (2c) Selected to be equal to the average of the RMS and Verisk catastrophe models
- (3) = (1) - (2c) * 1.158. 1.158 is the LAE loading.
- (4) Exhibit 7, Sheet 1
- (5) = (3) / (4)

Texas Windstorm Insurance Association
Residential Property - Wind & Hail
Rate Level Review
Reconciliation of Premium Data to Annual Statement

Calendar Year	TWIA Provided Written Premium			Annual Statement Gross Written Premium	Difference
	Commercial	Residential	Total		
(1)	(2)	(3)	(4)	(5)	(6)
1994	10,672,677	15,758,330	26,431,007	26,510,501	(79,494)
1995	12,865,905	19,259,265	32,125,170	32,419,287	(294,117)
1996	15,640,660	24,504,127	40,144,787	40,358,575	(213,788)
1997	16,536,186	25,783,455	42,319,641	42,462,844	(143,203)
1998	16,558,977	27,833,800	44,392,777	44,410,914	(18,137)
1999	17,394,142	27,168,992	44,563,134	44,581,218	(18,084)
2000	17,332,561	29,762,296	47,094,857	48,012,426	(917,569)
2001	17,544,251	36,220,623	53,764,874	54,630,727	(865,853)
2002	24,013,525	48,856,422	72,869,947	72,967,831	(97,884)
2003	29,220,514	58,573,191	87,793,705	87,987,279	(193,574)
2004	31,009,323	71,292,702	102,302,025	102,384,351	(82,326)
2005	35,740,174	78,094,458	113,834,632	113,927,701	(93,069)
2006	76,847,840	119,658,576	196,506,416	196,833,235	(326,819)
2007	110,951,718	203,561,196	314,512,914	315,139,307	(626,393)
2008	98,036,118	232,925,990	330,962,108	331,057,645	(95,537)
2009	111,269,573	269,535,059	380,804,632	382,342,402	(1,537,770)
2010	102,174,680	278,116,922	380,291,602	385,549,582	(5,257,980)
2011	100,017,021	307,494,236	407,511,257	403,748,164	3,763,093
2012	110,524,397	335,795,725	446,320,122	443,479,701	2,840,421
2013	112,904,624	360,838,081	473,742,705	472,739,474	1,003,231
2014	104,642,688	389,333,918	493,976,606	494,036,010	(59,404)
2015	98,715,934	407,969,846	506,685,780	503,824,316	2,861,464
2016	88,278,690	399,074,847	487,353,537	487,353,537	-
2017	70,749,081	352,368,052	423,117,133	423,074,138	42,995
2018	65,696,833	331,676,957	397,373,790	395,551,679	1,822,111
2019	59,123,729	314,907,159	374,030,888	372,016,601	2,014,287
2020	60,327,052	310,312,753	370,639,805	369,600,488	1,039,317
2021	63,366,551	331,736,850	395,103,401	395,112,773	(9,372)
2022	88,784,127	429,663,068	518,447,195	518,299,032	148,163
2023	130,162,738	522,931,821	653,094,559	653,043,231	51,328
Total	1,897,102,288	6,361,008,717	8,258,111,005	8,253,454,969	4,656,036

Notes:

- (2), (3) Provided by TWIA, as of 12/31/2023
- (4) = (2) + (3)
- (5) Based on TWIA Annual Statements
- (6) = (4) - (5)