

**TEXAS WINDSTORM INSURANCE ASSOCIATION  
COMMERCIAL PROPERTY RATE LEVEL REVIEW  
2011**

August 2010

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## **INTRODUCTION**

The Texas Windstorm Insurance Association (TWIA) has completed studies sufficient to support rate level indications for its commercial coverages. This report documents the procedures and results of this analysis.

## **DISTRIBUTION AND USE**

This report was prepared for internal use by the management of TWIA. A complete copy of the report may be submitted to the Texas Department of Insurance (TDI or Department) for use in the approval of a rate change. This report may also be provided to the TWIA actuarial committee. Use of this report for other than the stated purpose may not be proper and must be preceded by written authorization.

## **RELIANCE UPON DATA**

The following data and information used in this analysis were prepared by TWIA and are the responsibility of TWIA's management:

- TWIA losses and loss adjustment expenses
- TWIA written and earned premiums
- History of rate changes impacting TWIA commercial premium
- TWIA's statutory annual statements and insurance expense exhibits.

At the time of this analysis, some of the data was unaudited. The data was reviewed for reasonableness and consistency, and the TWIA written premium and paid loss data provided for this analysis were reconciled to TWIA's annual statements.

In addition to TWIA's own data, we utilized insurance industry premium and loss data supplied by the TDI.

We also used the results of two different hurricane simulation models -- one prepared by Applied Insurance Research (AIR) and one model prepared by Risk Management Solutions (RMS). Both models utilized TWIA exposure data as of 12/31/09. TWIA has not directly verified the accuracy of these simulation models, but has relied on documentation provided directly by the modeling firms and submission documentation provided to the Florida Commission on Hurricane Loss Projection Methodology to comply with Actuarial Standard of Practice #38, "Using Models Outside the Actuary's Area of Expertise."

## **LIMITATIONS**

The indicated rate level change as shown in this report represents a reasonable estimate of the rate level necessary to cover the TWIA's expected costs of providing commercial wind/hail coverage. The actual costs of providing commercial property coverage for a specific year may differ substantially from the indicated rate level range shown in this report. The possibility of this variability arises from the fact that the events covered by TWIA are inherently unpredictable from year to year. The indicated rate level is, however, our best estimate of the expected annual cost of providing commercial wind/hail coverage.

This actuarial report provides professional input and guidance to TWIA; however, the final decision regarding implementation and actual rate level change is a management decision.

The attached exhibits should be considered an integral part of this report.

## EXECUTIVE SUMMARY

This section provides a brief synopsis of the key findings and recommendations contained in our study.

1. We have estimated the indicated total rate level change using a combination of two different methodologies for projecting the expected hurricane portion of the indicated rate level. The indicated total rate level changes are shown in Exhibit 1 and the following table:

**Indicated Rate Change: Long Term Hurricane Methodologies**

<b>Hurricane Projection Methodology</b>	<b>Indicated Rate Change</b>
Actual Experience and Models Combined	+36%
Actual Industry Experience	+37%
Hurricane Simulation Models	+35%

The indicated rate change shown is based on a combination of actual industry experience and hurricane simulation models. The indications based on each of these methodologies alone are also shown for reference. All methodologies use a long-term approach to develop the hurricane portion of the indicated rate level.

The hurricane simulation models utilized are widely used for insurance company catastrophe management and ratemaking. Versions of these simulation models have undergone verification by and been approved by the Florida Commission on Hurricane Loss Projection Methodology.

2. The indicated rate level change includes different hurricane projection methodologies. The different methods were used because the actuarial methods used to incorporate hurricane losses into rate indications are still evolving. Traditionally, actuarial methods have been based on insurance industry hurricane loss experience. More recently, actuarial methods have incorporated the results of hurricane simulation models to minimize the weaknesses of the traditional approaches.

The method using actual industry experience relies on a more traditional approach and is based on 40 years of actual insurance industry premiums and losses and 159 years of actual hurricane experience. This method possesses the advantage of finding broader regulatory acceptance in many states (including Texas). The alternate method incorporates the results of hurricane simulation models. This has the advantage of minimizing many of the theoretical weaknesses of the traditional actuarial methodologies. The overall indication assigns equal weight to these hurricane projection methodologies.

3. The current rate indication is 15% more than the corresponding indication from the prior TWIA commercial rate study. Both historical and modeled projected catastrophe losses have increased from the prior analysis, resulting in a higher overall rate indication.

Details on the key differences between the current and prior rate indications are described in the Analysis section of this report.

4. The indicated rate changes presented in this report reflect a separate provision for contributions to the catastrophe reserve trust fund. The provision for the catastrophe trust fund is 40% of TWIA premium. The 40% provision is necessary to rebuild the fund, which was completely depleted in order to pay losses associated with 2008 hurricanes. The provision has been increased from 15% to reflect a greater need for contributions and to retain the savings resulting from the decision not to purchase catastrophe reinsurance.

The provision for reinsurance expense is now 0% of TWIA premium. The provision is not currently necessary due to the decision not to purchase catastrophe reinsurance.

## ACTUARIAL ANALYSIS

### Overview of Analysis

The goal of the rate level adequacy review is to compare the current rate level to TWIA's expected costs for providing commercial property insurance coverage. This comparison is achieved by estimating the projected loss, loss adjustment expense (LAE), and fixed expense ratio for a prospective accident year and then comparing this ratio to the "permissible" loss, LAE, and fixed expense ratio. The permissible ratio is the portion of premium remaining to pay loss, LAE, and fixed expenses after payment of TWIA variable expenses. If the projected ratio is higher than the permissible ratio, then a rate increase is indicated. If the projected ratio is lower than the permissible, then a rate decrease is indicated.

The steps employed to estimate the projected loss, LAE, and fixed expense ratio are as follows:

1. Adjust historical premium to the current rate level (to facilitate calculation of historical loss ratios at current rates).
2. Determine LAE factors to add projected LAE to projected loss.
3. Estimate the projected non-hurricane loss and LAE ratio.
4. Estimate the projected hurricane loss and LAE ratio.
5. Estimate the projected fixed expense ratio.
6. Sum the projected non-hurricane and hurricane loss ratios and the projected fixed expense ratio to obtain the projected total loss, LAE, and fixed expense ratio.

The steps employed to determine the permissible loss and LAE ratio are as follows:

- (a) Analyze historical variable expense to premium ratios to estimate the projected total variable expense ratio.
- (b) Subtract the projected total variable expense ratio from 1.00 to derive the variable permissible loss and LAE ratio.

Steps 1-5 and (a)-(b) are described in more detail in the remainder of this report.

### **Earned Premium at Current Rates**

Historical TWIA written premium is adjusted to the current rate level and adjusted to an earned basis based on a uniform monthly earning assumption. Earned premium at current rates for prior years permits the calculation of historical loss ratios at the current rate level. Exhibit 10 shows the calculation of earned premium at current rates.

### **Loss Adjustment Expense Factors**

In Exhibit 4, the historical ratio of LAE to loss is analyzed to develop LAE factors. Separate LAE factors are developed for hurricane and non-hurricane losses. The hurricane LAE factors are developed based on the LAE to loss ratio for years with hurricanes. The non-hurricane LAE factors are developed based on the ratio for years without hurricanes. TWIA statutory annual statement incurred loss and LAE data is utilized to derive these ratios.

The indicated LAE to loss ratios are shown in Exhibit 4, Sheet 1. For hurricane losses, the indicated LAE ratio of 0.158 is equal to the weighted average of the nine hurricane years included in the analysis. For non-hurricane losses, the indicated ratio of 0.362 is equal to the weighted average of the most recent 10 non-hurricane years included in the analysis.

The development of these LAE factors is necessary to add LAE to the projected hurricane and non-hurricane loss ratios. The development of these loss ratios is described in the following two sections.

### **Projected Non-Hurricane Loss and LAE Ratio**

Exhibit 2 shows the development of the projected non-hurricane loss and LAE ratio. The loss portion of this ratio is estimated by comparing the indicated ultimate non-hurricane loss for accident years 1999-2008 to the earned premium at current rates for the same ten years. The indicated ultimate non-hurricane loss for each year is based on actual paid loss as of 12/31/09 and the paid loss development method. LAE is then added to each year's ultimate loss through the non-hurricane LAE factor developed in Exhibit 4.



Paid loss development factors are selected based on both the current average of all available years and the prior selection. Given the positive skewness of the observed age-to-age development factors, a straight average may be more preferable than an average excluding the highest and lowest observation to avoid understating the expected development.

Each year's estimated ultimate loss and LAE is compared to the earned premium at present rates.

The resulting loss and LAE ratios are then trended forward to the expected prospective inflation level. The net trend factor is equal to a loss trend offset by a premium trend. The loss trend is calculated using industry-wide construction cost and consumer price indices. Premium trend is derived from historical changes in average earned premium at present rates. Both premiums and losses are trended to current levels by applying the actual, historical changes in the appropriate data. Future premium and loss trends are selected based on all available and relevant data. Because the selected trends are estimates of the future trend between the current and prospective earned and accident dates, and because they are not used to trend historical experience to current premium and loss levels, it may not be necessary to use experience only from periods where both premium and loss data are available.

The resulting loss and LAE ratios for each accident year from 2000-2009 form the basis for the indicated projected loss and LAE ratio. The indicated loss and LAE ratio equals the premium-weighted average ratio from the 2000-2009 accident period. This method gives greater weight to more recent years due to TWIA's growth. Given the greater credibility normally associated with more recent experience and the potentially significant change in TWIA's commercial book of business due to the growth, this weighting may be more appropriate than a non-weighted average across all years.

### **Projected Hurricane Loss and LAE Ratio**

Two different methods are used to develop the projected hurricane loss and LAE ratios. The first method is based on insurance industry and meteorological hurricane experience for the last 40 and 159 years, respectively. The other method is based on hurricane simulation models. The "40/159-year" method is utilized because the Texas Insurance Code required until recently the consideration of a 30-year minimum experience period. The simulation method is utilized because it minimizes many of the theoretical weaknesses of the historical method. These weaknesses include:

- A 40-year period is insufficient to measure long-term hurricane intensity.
- A 40-year period of insurance industry experience includes years where land use, population densities, construction techniques and materials, engineering techniques and building codes were different than today. These differences diminish the relevance of insurance data from several decades ago in evaluating today's commercial property rates.

Differences between the two methods are the result of expected variances in the frequency and severity of hurricanes, and fundamental differences between the aggregate historical industry exposures and current TWIA exposures. Because of the readily identifiable nature of hurricanes, there should be no double-counting or understatement of expected future losses resulting from the use of either method.

For each method, the projected hurricane loss ratio is estimated first. LAE is added to each loss ratio using the hurricane LAE factor developed in Exhibit 4. Each method's development of the projected hurricane loss ratio is described as follows:

*Actual 40/159-Year Industry Hurricane Experience*

In Exhibit 6, Texas insurance industry seacoast dwelling extended coverage experience for the 1970-2009 period is used in the development of a projected hurricane loss ratio. For each year, insurance industry loss ratios at current rates are calculated using information provided by the TDI. For the years where sufficient detail is available (1980-2009), these loss ratios are adjusted to TWIA's rate level and re-weighted based on the TWIA's current premium distribution by territory within the seacoast area.

A projected hurricane loss ratio is developed from these 40 years of loss ratios by separating the 40 years into the twelve hurricane years and twenty-eight non-hurricane years. The 28 non-hurricane years are used to develop an estimated non-hurricane loss ratio.

Hurricane loss ratios are then estimated by subtracting the non-hurricane loss ratio from the total loss ratio in each of the twelve hurricane years. An average hurricane loss ratio for hurricane years is calculated as the average of the twelve hurricane loss ratios: 110.0%.

The 40-year period that underlies the selected hurricane loss ratio has experienced significantly fewer hurricanes than the long-term average. As shown in Exhibit 9, the annual hurricane frequency during this 40-year period is 0.323, while the annual frequency during the most recent 159-year period is 0.396. The 40-year period represents all years for which TWIA has been provided industry data by TDI. Because the expected frequency of hurricanes is unrelated to the availability of insurance industry data, there is no reason to use only the most recent 40-year period to estimate the expected frequency of hurricane activity. Given the relatively infrequent occurrence of hurricanes, the largest possible experience period should be considered in order to obtain the most credible result. The selected hurricane frequency is therefore set equal to the 159-year historical hurricane frequency. As shown in Exhibit 6, Sheet 1, multiplying the selected loss ratio for hurricane years by the selected hurricane frequency yields a projected hurricane loss ratio of 43.6%.

*Hurricane Simulation Models*

This projected hurricane loss ratio is determined based on the average result of two different hurricane simulation models. The models are AIR CLASIC/2 v11.0 and RMS RiskLink v9.0. Both models were run using exposure data provided by TWIA as of 12/31/2009. This exposure data included location-level detail including physical characteristics of each risk and all relevant coverages. Both models were run using historical (long-term) event rates and both results include loss amplification (demand surge) and exclude storm surge and loss adjustment expenses. The AIR and RMS models generated 4,511 and 3,342 unique events, respectively, with the following intensity ratings:

Saffir-Simpson Category	AIR	RMS
Category 0	0	210
Category 1	806	646
Category 2	1,325	393
Category 3	1,555	766
Category 4	718	1,044
Category 5	107	283

The intensity at first landfall is shown for AIR events. RMS event sets display multiple landfall intensities and locations. Events are shown with the intensity most relevant to Texas exposures. Events shown as Category 0 are storms with wind speeds less than hurricane thresholds at time of Texas landfall.

As shown in Exhibits 7 and 8, these models yield projected hurricane loss ratios of 38.0% and 47.9%. The average of these loss ratios is 43.0%.

### **Fixed Expenses and Variable Permissible Loss and LAE Ratio**

Exhibit 11 shows the expense assumptions used to develop the projected fixed expense ratio and the variable permissible loss and LAE ratio. Fixed expenses include general expenses and the net cost of reinsurance. The sum of these projected expenses provides for a 3.8% fixed expense ratio. Variable expenses include commission, taxes, and catastrophe trust fund contribution. Subtracting these expenses from 100% yields a variable permissible loss and LAE ratio of 42.1%.

As stated above, the expenses include a provision for an annual contribution to the catastrophe reserve trust fund. The 40% provision for the trust fund contribution is intended to permit the redevelopment of the catastrophe reserve trust fund to reduce the potential for future year surcharges on coastal insurance policies and assessments to TWIA members.

### **Indicated Rate Change**

Exhibit 1 summarizes the indicated rate change using a combination of the two hurricane loss ratio projection methods. The individual indications resulting from the use of each methodology are also shown for reference. The indicated rate change for each method is calculated by dividing the total projected loss, LAE, and fixed expense ratio by the variable permissible loss and LAE ratio. This method of calculating the indicated rate change assumes that TWIA's variable expenses vary proportionally with premium while the fixed expenses do not.

### **Data Issues**

*Reconciliation of Data to TWIA's Annual Statements*

Exhibit 12, Sheets 1 and 2 show a reconciliation of the TWIA premium and loss data used in this report (ratemaking data) to TWIA's annual statements. Sheet 1 reconciles paid loss data by accident year; Sheet 2 reconciles written premium data by calendar year.

The paid loss reconciliation shows small differences between the ratemaking paid loss data and the annual statement data for all accident years except 2005 and 2009 where relatively larger differences are indicated.

The written premium reconciliation shows the differences between the ratemaking written premium data and the annual statement data for calendar years 1990-2008. Differences of less than 1% exist for each year.

**Key Differences Versus Prior Indications**

The indicated rate change shown in this report is 15% more than the comparable indication based on the prior (August 2009) study. The reasons for the higher indications are summarized in the following table.

**Reconciliation of Current vs. Prior Indications**

Rate Indication/Reason for Change	Impact of Change	Rate Indication
<i>Previous Rate Indication (Combined Method)</i>		+21%
TWIA Rate Level	0%	
Change in Experience Period	+15%	
<i>Current Rate Indication (Combined Method)</i>	+15%	+36%

These reasons are discussed below:

*TWIA Rate Level*

The TWIA rate level is unchanged from the previous analysis.

*Change in Experience Period*

Using a more recent experience period increased the indicated rate change by 15 points. This is due to increases in both historical and modeled projected catastrophe losses as a result of Hurricane Ike.

## FINANCIAL ANALYSIS

In recognition of recent changes to TWIA funding, a financial analysis was completed in order to determine whether projected net premium income would be sufficient to cover ongoing costs and the potentially sizable fixed premium income requirements of any public securities issued.

This analysis is shown on Exhibit 13. Projected written and earned premiums for 2011 are compared to projected ongoing costs, including non-catastrophe losses and loss adjustment expenses, general operating expenses, commissions, and premium taxes. This comparison is made assuming both current and proposed rate levels. The resulting net premium income is compared to current estimates of the net required premium and net debt service for \$1 billion in Class 1 public securities.

Current rate levels result in projected net premium income within the range of estimated costs. It is possible that current rate levels would result in insufficient net required premium in some estimated cost scenarios. Proposed rate levels would result in sufficient net required premium for the entire estimated cost range. Furthermore, the additional premiums would protect against possibly higher future costs in a changing interest rate environment and would mitigate future rate increases after the issuance of some or all of the available Class 1 public securities.

## SUMMARY OF EXHIBITS

<u>Exhibit Number</u>	<u>Exhibit Title or Purpose</u>
1	Summary of Indicated Rate Change
2	Projected Ultimate Non-Hurricane Loss & LAE Ratio
3	Paid Loss Development Factors and Premium and Loss Trend Analysis
4	Development of LAE Factor
5	Summary of Indicated Hurricane Loss & LAE Ratios
6	Development of Hurricane Loss Ratio – 39/158-Year Method
7	Hurricane Loss Ratio – AIR Model
8	Hurricane Loss Ratio – RMS Model
9	Texas Hurricanes 1899-2008
10	Earned Premium at Present Rates
11	Fixed Expenses and Variable Permissible Loss & LAE Ratios
12	Reconciliation of Premium Data to Annual Statement
13	Analysis of Current and Proposed Net Premium Income



**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
 Summary of Indicated Rate Change  
 By Method for Projecting Hurricane Loss & LAE

Exhibit 1

Hurricane Projection Method	Indicated Loss & LAE Ratio			Fixed Expenses	Total	Variable Permissible LLAE Ratio	Indicated Rate Change
	Hurricane	Non-Hurricane					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Using Experience and Models	50.2%	3.2%	3.8%	57.2%	42.1%	+36%	
Using Actual Industry Experience	50.5%	3.2%	3.8%	57.5%	42.1%	+37%	
Using Hurricane Models	49.8%	3.2%	3.8%	56.8%	42.1%	+35%	

Notes:

- (2) Exhibit 5
- (3) Exhibit 2, Sheet 1
- (4) Exhibit 11
- (5) = (2) + (3) + (4)
- (6) Exhibit 11
- (7) = (5) / (6) - 1

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
 Projected Ultimate Non-Hurricane Loss & LAE Ratio

Exhibit 2  
 Sheet 1

Accident Year	Ultimate Non-Hurricane Loss	LAE Factor	Net Trend Factor	Projected Non-Hurricane Loss & LAE	Eamed Premium at Current Rate Level	Indicated Non-Hurricane Loss & LAE Ratio
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2000	3,652,082	0.362	0.472	2,347,792	38,423,739	6.1%
2001	1,042,867	0.362	0.509	722,976	37,015,300	2.0%
2002	8,023,090	0.362	0.566	6,184,936	41,236,203	15.0%
2003	5,948,354	0.362	0.634	5,136,451	48,241,684	10.6%
2004	619,079	0.362	0.589	496,636	49,796,740	1.0%
2005	3,135,441	0.362	0.523	2,233,456	50,094,058	4.5%
2006	1,541,664	0.362	0.606	1,272,446	76,702,156	1.7%
2007	1,275,096	0.362	0.865	1,502,229	118,824,288	1.3%
2008	1,098,760	0.362	0.830	1,242,104	124,571,939	1.0%
2009	999,281	0.362	0.874	1,189,532	113,150,007	1.1%
<b>Total</b>	<b>27,335,714</b>			<b>22,328,558</b>	<b>698,056,114</b>	<b>3.2%</b>

Notes:

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

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
 Projected Ultimate Non-Hurricane Loss

Exhibit 2  
 Sheet 2

Accident Year	TWIA Non-Hurricane Paid Loss	Development Factor	Ultimate Non-Hurricane Loss
(1)	(2)	(3)	(4)
2000	3,652,082	1.000	3,652,082
2001	1,042,867	1.000	1,042,867
2002	8,023,090	1.000	8,023,090
2003	5,948,354	1.000	5,948,354
2004	619,079	1.000	619,079
2005	3,122,949	1.004	3,135,441
2006	1,517,386	1.016	1,541,664
2007	1,230,788	1.036	1,275,096
2008	1,041,479	1.055	1,098,760
2009	706,206	1.415	999,281
<b>Total</b>	<b>26,904,280</b>		<b>27,335,714</b>

Notes:

- (2) Exhibit 2, Sheet 3, as of 12/31/09
- (3) Exhibit 3, Sheet 1
- (4) = (2) \* (3)

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Summary of TWIA Historical Paid Loss as of 12/31/09

Exhibit 2  
Sheet 3

Accident Year	<u>Paid Loss Excluding Expense</u>		Total
	Non-Hurricane	Hurricane	
(1)	(2)	(3)	(4)
2000	3,652,082	0	3,652,082
2001	1,042,867	0	1,042,867
2002	8,023,090	0	8,023,090
2003	5,948,354	5,905,206	11,853,560
2004	619,079	0	619,079
2005	3,122,949	67,831,559	70,954,508
2006	1,517,386	0	1,517,386
2007	1,230,788	3,748,524	4,979,312
2008	1,041,479	584,817,813	585,859,292
2009	706,206	0	706,206
<b>Total</b>	<b>26,904,280</b>	<b>662,303,102</b>	<b>689,207,382</b>

Notes:

- (2), (3) Provided by TWIA, includes commercial and farm
- (4) = (2) + (3)

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Calculation of Net Trend Factors

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Year / Quarter	Average EPPR		
(1)	(2)		
		(3) Current Average Eamed Date	7/1/2009
2001 / 4	4,678.80	(4) Current Average Accident Date	7/1/2009
2002 / 4	5,294.56	(5) Prospective Average Eamed / Accident Date	1/1/2012
2003 / 4	5,153.34	(6) Premium Trend Length	2.500
2004 / 4	4,855.96	(7) Loss Trend Length	2.500
2005 / 4	5,964.62	(8) Selected Premium Trend	10.6%
2006 / 4	8,892.30	(9) Selected Loss Trend	4.8%
2007 / 4	8,710.85		
2008 / 4	8,122.88		

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Accident Year	Current Premium Trend	Current Loss Trend	Prospective Premium Trend	Prospective Loss Trend	Net Trend Factor
(10)	(11)	(12)	(13)	(14)	(15)
2000	2.500	1.350	1.286	1.124	0.472
2001	2.266	1.319	1.286	1.124	0.509
2002	2.055	1.329	1.286	1.124	0.566
2003	1.816	1.316	1.286	1.124	0.634
2004	1.865	1.257	1.286	1.124	0.589
2005	1.980	1.184	1.286	1.124	0.523
2006	1.612	1.116	1.286	1.124	0.606
2007	1.081	1.069	1.286	1.124	0.865
2008	1.104	1.048	1.286	1.124	0.830
2009	1.000	1.000	1.286	1.124	0.874

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Notes:

- (2) Exhibit 3, Sheet 2 (10)
- (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 2008 / 4
- (12) Exhibit 3, Sheet 3a
- (13) = [1 + (8)] ^ (6)
- (14) = [1 + (9)] ^ (7)
- (15) = [(12) \* (14)] / [(11) \* (13)]

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Paid Loss Development Factors  
TWIA Commercial Property Paid Loss

Accident Year	<u>Months of Development</u>							
	12 (1)	24 (2)	36 (3)	48 (4)	60 (5)	72 (6)	84 (7)	84 (8)
2000		3,098	3,444	3,642	3,651	3,651	3,651	3,652
2001		803	1,043	1,043	1,043	1,043	1,043	1,043
2002		4,500	7,776	7,828	7,843	7,843	8,023	8,023
2003		3,841	4,824	4,917	5,548	5,948	5,948	5,948
2004		261	619	619	619	619	619	
2005		2,400	2,965	3,122	3,122	3,123		
2006		1,208	1,517	1,517	1,517			
2007		1,095	1,225	1,231				
2008		953	1,041					
2009		706						

Accident Year	<u>Development Factors</u>							
	12 - 24 (1)	24 - 36 (2)	36 - 48 (3)	48 - 60 (4)	60 - 72 (5)	72 - 84 (6)	84 - Ult (7)	(8)
2000		1.112	1.057	1.002	1.000	1.000	1.000	
2001		1.299	1.000	1.000	1.000	1.000	1.000	
2002		1.728	1.007	1.002	1.000	1.023	1.000	
2003		1.256	1.019	1.128	1.072	1.000	1.000	
2004		2.372	1.000	1.000	1.000	1.000		
2005		1.235	1.053	1.000	1.000			
2006		1.256	1.000	1.000				
2007		1.119	1.005					
2008		1.092						
Average		1.404	1.013	1.019	1.012	1.005	1.000	
Avg x hi / lo		1.286	1.014	1.001	1.000	1.000	1.000	
Avg 3 Year		1.156	1.019	1.000	1.024	1.008	1.000	
Avg 5 Year		1.415	1.015	1.026	1.014	1.005	1.000	
Prior		1.278	1.025	1.020	1.011	1.003	1.000	1.000
Selected		1.341	1.019	1.020	1.012	1.004	1.000	1.000
Cumulative		1.415	1.055	1.036	1.016	1.004	1.000	1.000

Notes:

Provided by TWIA, includes commercial and farm,  
excludes hurricanes Brett (1999), Claudette (2003), Rita (2005), Humberto (2007), Dolly (2008), and Ike (2008)

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Premium Trend Analysis  
TWIA Commercial Eamed Premium at Present Rates

Exhibit 3  
Sheet 2

Year / Quarter	Policies In-Force	Annualized		On- Level Factors	Premium at Present Rates		Eamed Premium at Present Rates		Exponential Fitted Trends			
		Eamed In-Force	Written Premium		Written	Eamed	Annualized	Average	All-Year	5-Year	4-Year	3-Year
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2001 / 2	8,213		4,984,498	2.002	9,981,114	8,523,806						
2001 / 3	8,323		5,838,967	2.002	11,692,130	8,768,733						
2001 / 4	8,266		4,447,661	2.002	8,906,135	9,083,119						
2002 / 1	8,268		3,875,921	1.907	7,391,681	9,263,634	35,639,291					
2002 / 2	8,271	8,275	6,159,013	1.907	11,745,714	9,630,334	36,745,819	4,440.72	4,206.22			
2002 / 3	8,790	8,340	6,989,701	1.907	13,329,901	10,029,811	38,006,898	4,556.98	4,313.28			
2002 / 4	8,980	8,488	6,994,547	1.907	13,339,142	10,789,911	39,713,690	4,678.80	4,423.06			
2003 / 1	8,951	8,663	5,028,770	1.734	8,718,412	11,630,304	42,080,360	4,857.69	4,535.63			
2003 / 2	9,138	8,856	7,788,606	1.734	13,503,158	11,998,759	44,448,785	5,018.85	4,651.07			
2003 / 3	9,594	9,065	9,285,559	1.734	16,098,436	12,560,843	46,979,817	5,182.41	4,769.44			
2003 / 4	9,573	9,240	7,123,586	1.734	12,350,209	12,731,193	48,921,098	5,294.56	4,890.83			
2004 / 1	9,618	9,397	6,128,526	1.576	9,659,151	12,832,098	50,122,892	5,333.71	5,015.31			
2004 / 2	9,799	9,563	8,846,383	1.576	13,942,758	13,024,470	51,148,603	5,348.38	5,142.96			
2004 / 3	10,280	9,732	8,697,733	1.576	13,708,471	12,723,002	51,310,763	5,272.51	5,273.85			
2004 / 4	10,127	9,887	7,364,599	1.576	11,607,322	12,370,253	50,949,822	5,153.34	5,408.08			
2005 / 1	9,966	10,000	6,989,071	1.433	10,014,049	12,255,746	50,373,470	5,037.60	5,545.72	5,092.67		
2005 / 2	10,118	10,083	9,921,901	1.433	14,216,253	12,189,406	49,538,406	4,913.12	5,686.87	5,289.44		
2005 / 3	10,595	10,162	10,205,225	1.433	14,622,204	12,515,092	49,330,496	4,854.35	5,831.61	5,493.80		
2005 / 4	10,447	10,242	8,664,280	1.433	12,414,314	12,772,059	49,732,302	4,855.96	5,980.03	5,706.06		
2006 / 1	10,683	10,371	10,035,655	1.365	13,694,516	13,145,888	50,622,445	4,881.09	6,132.23	5,926.52	5,674.73	
2006 / 2	11,247	10,602	17,212,539	1.365	23,487,992	14,622,376	53,055,415	5,004.34	6,288.30	6,155.50	5,884.98	
2006 / 3	12,309	10,957	24,238,113	1.327	32,162,915	17,953,372	58,493,696	5,338.36	6,448.35	6,393.32	6,103.03	
2006 / 4	12,800	11,466	25,361,614	1.264	32,044,544	22,666,433	68,388,070	5,964.62	6,612.47	6,640.33	6,329.16	
2007 / 1	13,083	12,060	19,813,271	1.218	24,140,965	26,555,793	81,797,975	6,782.73	6,780.76	6,896.89	6,563.66	8,046.18
2007 / 2	14,020	12,706	33,548,202	1.218	40,875,934	29,943,001	97,118,600	7,643.30	6,953.34	7,163.36	6,806.86	8,102.86
2007 / 3	15,113	13,404	34,575,445	1.218	42,127,552	33,785,485	112,950,712	8,426.96	7,130.32	7,440.13	7,059.06	8,159.95
2007 / 4	15,063	14,037	23,325,552	1.218	28,420,412	34,535,830	124,820,109	8,892.30	7,311.79	7,727.58	7,320.61	8,217.44
2008 / 1	14,589	14,508	18,055,293	1.181	21,321,549	34,017,632	132,281,947	9,117.86	7,497.89	8,026.15	7,591.85	8,275.33
2008 / 2	14,393	14,743	30,042,686	1.156	34,729,345	32,957,569	135,296,515	9,177.08	7,688.72	8,336.25	7,873.14	8,333.64
2008 / 3	14,968	14,771	30,943,124	1.156	35,770,251	30,645,544	132,156,574	8,946.80	7,884.41	8,658.33	8,164.86	8,392.35
2008 / 4	13,732	14,587	18,828,139	1.156	21,765,329	29,443,385	127,064,129	8,710.85	8,085.08	8,992.85	8,467.38	8,451.48
2009 / 1	14,001	14,347	22,916,612	1.000	22,916,612	28,288,721	121,335,219	8,457.18	8,290.85	9,340.30	8,781.11	8,511.02
2009 / 2	13,699	14,187	31,190,440	1.000	31,190,440	28,237,131	116,614,781	8,219.98	8,501.87	9,701.18	9,106.46	8,570.98
2009 / 3	13,931	13,970	35,318,480	1.000	35,318,480	28,322,373	114,291,610	8,181.00	8,718.25	10,075.99	9,443.87	8,631.37
2009 / 4	13,788	13,848	22,022,364	1.000	22,022,364	27,635,320	112,483,544	8,122.88	8,940.14	10,465.29	9,793.78	8,692.18
(14) Average Annual Change									10.6%	16.4%	15.7%	2.8%
(15) Correlation Coefficient									76.6%	76.4%	61.0%	8.8%
(16) Selected Premium Trend												10.6%

- Notes:
- (2) Provided by TWIA
  - (3) Calculated from (2) using uniform quarterly eaming assumption
  - (4) Provided by TWIA
  - (5) Factor to bring written premium to current rate level
  - (6) = (4) \* (5) Indexed to 2008 / 4
  - (7) Calculated from (6) using uniform monthly eaming assumption
  - (8) = Sum of (7) for prior 4 quarters
  - (9) = (8) / (3)
  - (10) - (13) = (9) fitted to an exponential distribution, excluding 2007 / 2 - 2007 / 4
  - (14) Fitted average annual change, excluding 2007 / 2 - 2007 / 4
  - (15) Evaluates the predictability of the fitted curve
  - (16) Selected based on judgment

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Loss Trend Analysis  
Summary of Indices and Calculation of Prospective Loss Costs

Exhibit 3  
Sheet 3a

Calendar Year Ending 12/31/xx	<u>Commercial</u>		<u>Residential</u>		Modified CPI	Weighted Average
	Statewide Boeckh	Coastal Boeckh	Statewide Boeckh	Coastal Boeckh		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1999			1.359	1.388	1.127	1.323
2000			1.332	1.350	1.102	1.288
2001			1.300	1.315	1.092	1.259
2002	1.316	1.325	1.285	1.299	1.096	1.268
2003	1.301	1.308	1.251	1.268	1.098	1.256
2004	1.229	1.240	1.170	1.183	1.074	1.199
2005	1.146	1.154	1.121	1.131	1.056	1.130
2006	1.072	1.076	1.052	1.057	1.032	1.065
2007	1.021	1.023	1.012	1.016	1.010	1.020
2008	1.000	1.000	1.000	1.000	1.000	1.000

Factors to Adjust For Prospective Loss Costs

(8) Fitted Trend	5.6%	5.7%	4.7%	5.0%	2.0%	4.8%
(9) Cost Factor	1.210	1.215	1.175	1.185	1.071	1.178

Notes:

- (2) = Exhibit 3, Sheet 3b trended forward to 12/31/2008
- (3) = Exhibit 3, Sheet 3c trended forward to 12/31/2008
- (4) = Residential Exhibit 3, Sheet 3b trended forward to 12/31/2008
- (5) = Residential Exhibit 3, Sheet 3c trended forward to 12/31/2008
- (6) = Exhibit 3, Sheet 3d
- (7) = 25% CPI and 75% Boeckh (most appropriate available by year)
- (8) = (2) - (7) fitted to an exponential curve using 5 years' data (where available)
- (9) = [1 + (8)] ^ 3.5 (trended from 7/1/2008 to 1/1/2012)



**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Loss Trend Analysis  
Boeckh Commercial Construction Index Trend (Statewide)

Exhibit 3  
Sheet 3b

Calendar Year Ending	Texas	Fitted Trends	
	Statewide Index	All Years Linear	Exponential
(1)	(2)	(3)	(4)
3/31/1999			
6/30/1999			
9/30/1999			
12/31/1999			
3/31/2000			
6/30/2000			
9/30/2000			
12/31/2000			
3/31/2001			
6/30/2001			
9/30/2001			
12/31/2001			
3/31/2002			
6/30/2002			
9/30/2002			
12/31/2002	1554.85	1496.95	1511.23
3/31/2003	1558.35	1521.27	1531.99
6/30/2003	1562.12	1545.59	1553.03
9/30/2003	1565.36	1569.91	1574.36
12/31/2003	1572.48	1594.23	1595.98
3/31/2004	1582.33	1618.56	1617.90
6/30/2004	1598.22	1642.88	1640.12
9/30/2004	1625.89	1667.20	1662.64
12/31/2004	1664.08	1691.52	1685.48
3/31/2005	1702.58	1715.84	1708.63
6/30/2005	1737.67	1740.16	1732.10
9/30/2005	1763.94	1764.48	1755.88
12/31/2005	1784.92	1788.80	1780.00
3/31/2006	1809.91	1813.13	1804.45
6/30/2006	1838.89	1837.45	1829.23
9/30/2006	1872.87	1861.77	1854.35
12/31/2006	1908.61	1886.09	1879.82
3/31/2007	1939.13	1910.41	1905.64
6/30/2007	1964.32	1934.73	1931.81
9/30/2007	1986.91	1959.05	1958.34
12/31/2007	2002.86	1983.37	1985.24
3/31/2008	2014.68	2007.70	2012.51
6/30/2008	2026.83	2032.02	2040.15
9/30/2008	2036.42	2056.34	2068.17
12/31/2008	2045.90	2080.66	2096.57
Annual Trend		4.7%	5.6%
R-Squared		0.979	0.978

Notes:

- (2) = Average Index for Austin, Corpus Christi, Dallas, El Paso, Fort Worth, Houston, Odessa, and San Antonio
- (3) - (4) = (2) fitted to linear and exponential distributions

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Loss Trend Analysis  
Boeckh Commercial Construction Index Trend (Coastal)

Exhibit 3  
Sheet 3c

Calendar Year Ending	Texas Coastal Index	<u>Fitted Trends</u>	
		All Years Linear	Exponential
(1)	(2)	(3)	(4)
3/31/1999			
6/30/1999			
9/30/1999			
12/31/1999			
3/31/2000			
6/30/2000			
9/30/2000			
12/31/2000			
3/31/2001			
6/30/2001			
9/30/2001			
12/31/2001			
3/31/2002			
6/30/2002			
9/30/2002			
12/31/2002	1567.59	1506.33	1521.77
3/31/2003	1573.22	1531.48	1543.13
6/30/2003	1578.68	1556.63	1564.80
9/30/2003	1581.86	1581.79	1586.76
12/31/2003	1588.21	1606.94	1609.04
3/31/2004	1597.26	1632.09	1631.62
6/30/2004	1611.74	1657.24	1654.52
9/30/2004	1638.59	1682.39	1677.75
12/31/2004	1675.10	1707.55	1701.30
3/31/2005	1713.04	1732.70	1725.18
6/30/2005	1748.40	1757.85	1749.40
9/30/2005	1775.70	1783.00	1773.95
12/31/2005	1800.08	1808.15	1798.86
3/31/2006	1828.22	1833.31	1824.11
6/30/2006	1858.44	1858.46	1849.71
9/30/2006	1894.75	1883.61	1875.68
12/31/2006	1930.37	1908.76	1902.01
3/31/2007	1959.70	1933.91	1928.70
6/30/2007	1988.13	1959.06	1955.78
9/30/2007	2013.31	1984.22	1983.23
12/31/2007	2031.76	2009.37	2011.07
3/31/2008	2045.54	2034.52	2039.30
6/30/2008	2059.06	2059.67	2067.93
9/30/2008	2067.44	2084.82	2096.95
12/31/2008	2077.64	2109.98	2126.39
Annual Trend		4.8%	5.7%
R-Squared		0.978	0.979

Notes:

- (2) = Average Index for Corpus Christi and Houston
- (3) - (4) = (2) fitted to linear and exponential distributions

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Loss Trend Analysis  
Modified Consumer Price Index - External Trend

Calendar Year Ending	Modified CPI	Fitted Trends			5 Years		4 Years		3 Years	
		All Years Linear	Exponential	Linear	Exponential	Linear	Exponential	Linear	Exponential	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
9/30/1998	158.12	157.71	157.98							
12/31/1998	158.91	158.23	158.47							
3/31/1999	159.37	158.75	158.96							
6/30/1999	159.86	159.27	159.45							
9/30/1999	160.43	159.80	159.94							
12/31/1999	160.76	160.32	160.44							
3/31/2000	161.80	160.84	160.93							
6/30/2000	162.72	161.36	161.43							
9/30/2000	163.61	161.88	161.93							
12/31/2000	164.37	162.41	162.43							
3/31/2001	165.07	162.93	162.93							
6/30/2001	165.68	163.45	163.43							
9/30/2001	165.69	163.97	163.93							
12/31/2001	165.84	164.50	164.44							
3/31/2002	165.55	165.02	164.95							
6/30/2002	165.22	165.54	165.46							
9/30/2002	165.32	166.06	165.97							
12/31/2002	165.32	166.58	166.48							
3/31/2003	164.94	167.11	166.99							
6/30/2003	164.84	167.63	167.51							
9/30/2003	164.70	168.15	168.03							
12/31/2003	164.88	168.67	168.54							
3/31/2004	165.74	169.20	169.06	165.90	166.01					
6/30/2004	166.59	169.72	169.59	166.75	166.83					
9/30/2004	167.69	170.24	170.11	167.61	167.65					
12/31/2004	168.65	170.76	170.64	168.46	168.48					
3/31/2005	169.97	171.29	171.16	169.32	169.31	169.34	169.41			
6/30/2005	170.57	171.81	171.69	170.17	170.14	170.19	170.23			
9/30/2005	170.65	172.33	172.22	171.03	170.98	171.05	171.06			
12/31/2005	171.45	172.85	172.75	171.88	171.82	171.90	171.89			
3/31/2006	171.92	173.37	173.28	172.73	172.67	172.75	172.73	172.61	172.64	
6/30/2006	172.99	173.90	173.82	173.59	173.52	173.60	173.57	173.48	173.49	
9/30/2006	174.59	174.42	174.36	174.44	174.37	174.45	174.41	174.36	174.35	
12/31/2006	175.51	174.94	174.89	175.30	175.23	175.30	175.26	175.23	175.21	
3/31/2007	176.12	175.46	175.43	176.15	176.10	176.15	176.11	176.11	176.08	
6/30/2007	177.26	175.99	175.98	177.01	176.96	177.01	176.97	176.98	176.95	
9/30/2007	178.35	176.51	176.52	177.86	177.84	177.86	177.83	177.86	177.83	
12/31/2007	179.24	177.03	177.06	178.72	178.71	178.71	178.69	178.73	178.71	
3/31/2008	180.25	177.55	177.61	179.57	179.59	179.56	179.56	179.60	179.60	
6/30/2008	180.62	178.07	178.16	180.43	180.48	180.41	180.43	180.48	180.49	
9/30/2008	181.06	178.60	178.71	181.28	181.37	181.26	181.31	181.35	181.38	
12/31/2008	181.11	179.12	179.26	182.14	182.26	182.11	182.19	182.23	182.28	
Annual Trend		1.2%	1.2%	1.9%	2.0%	1.9%	2.0%	1.9%	2.0%	
R-Squared		0.921	0.926	0.991	0.991	0.983	0.983	0.972	0.970	

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**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**

Development of LAE factor Using TWIA Commercial + Residential Experience

Accident Year	Projected Ultimate Loss	Projected Ultimate LAE	Ultimate LAE to Loss Ratio	Hurricane Indicator
(1)	(2)	(3)	(4)	(5)
1977		72	132	1.833
1978		129	147	1.140
1979		1,423	488	0.343
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		3,856	1,880	0.488
2002		24,746	5,226	0.211
2003		24,606	5,122	0.208 H
2004		5,162	1,468	0.284
2005		153,494	19,977	0.130 H
2006		4,279	1,111	0.260
2007		15,459	4,804	0.311 H
2008		1,689,222	279,468	0.165 H
2009		7,730	10,394	1.345
All Years Total	2,163,744	363,060	0.168	
Hurricane Years Total	2,066,641	326,237	0.158	
Non-Hurricane Years				
Total	97,103	36,823	0.379	
10 Year	81,508	29,524	0.362	

Notes:

- (2) Exhibit 4, Sheet 2
- (3) Exhibit 4, Sheet 4
- (4) = (3) / (2)
- (5) "H" indicates hurricane year

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Ultimate Loss (TWIA All Lines)

Exhibit 4  
Sheet 2

Accident Year	Inurred Loss at 12/31/09	Development Factor	Indicated Ultimate Loss
(1)	(2)	(3)	(4)
1977			72
1978			129
1979			1,423
1980			12,911
1981			2,512
1982			796
1983			148,999
1984			999
1985			512
1986			881
1987			1,897
1988			1,160
1989			12,296
1990			335
1991			1,217
1992			489
1993			3,375
1994			679
1995			2,977
1996			1,166
1997			2,964
1998			22,401
1999			8,773
2000			6,227
2001			3,856
2002			24,746
2003	24,606	1.000	24,606
2004	5,167	0.999	5,162
2005	154,576	0.993	153,494
2006	4,279	1.000	4,279
2007	15,537	0.995	15,459
2008	1,774,393	0.952	1,689,222
2009	8,267	0.935	7,730

Notes:

- (2) Exhibit 4, Sheet 3
- (3) Exhibit 4, Sheet 3
- (4) 2002 - 2009: (2) \* (3); 1977 - 2001: from prior TWIA annual statements

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Incurred Loss Development Factors  
TWIA Schedule P Incurred Loss (Including IBNR)

Exhibit 4  
Sheet 3

Accident Year	<u>Months of Development</u>							
	12 (1)	24 (2)	36 (3)	48 (4)	60 (5)	72 (6)	84 (7)	(8)
2000		6,745	6,994	6,342	6,256	6,259	6,259	6,227
2001		5,278	4,308	3,868	3,857	3,856	3,856	3,856
2002		29,984	25,765	24,534	24,555	25,642	24,746	24,746
2003		25,109	25,512	24,099	24,490	24,605	24,606	24,606
2004		4,828	5,438	5,169	5,167	5,169	5,167	
2005		164,811	157,442	152,243	153,502	154,576		
2006		4,471	4,616	4,507	4,279			
2007		16,446	15,813	15,537				
2008		1,902,481	1,774,393					
2009		8,267						

Accident Year	<u>Development Factors</u>							
	12 - 24 (1)	24 - 36 (2)	36 - 48 (3)	48 - 60 (4)	60 - 72 (5)	72 - 84 (6)	84 - Ult (7)	(8)
2000		1.037	0.907	0.986	1.000	1.000	0.995	
2001		0.816	0.898	0.997	1.000	1.000	1.000	
2002		0.859	0.952	1.001	1.044	0.965	1.000	
2003		1.016	0.945	1.016	1.005	1.000	1.000	
2004		1.126	0.951	1.000	1.000	1.000		
2005		0.955	0.967	1.008	1.007			
2006		1.032	0.976	0.949				
2007		0.962	0.983					
2008		0.933						
Average		0.971	0.947	0.994	1.009	0.993	0.999	
Avg x hi / lo		0.971	0.950	0.998	1.003	1.000	1.000	
Avg 3 Year		0.976	0.975	0.986	1.004	0.988	1.000	
Avg 5 Year		1.002	0.964	0.995	1.011	0.993	0.999	
Prior		0.991	0.950	1.003	1.009	0.994	1.000	1.000
Selected		0.982	0.957	0.995	1.007	0.994	0.999	1.000
Cumulative		0.935	0.952	0.995	1.000	0.993	0.999	1.000

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Ultimate LAE (TWIA All Lines)

Exhibit 4  
Sheet 4

Accident Year	Incurred ALAE at 12/31/09	Development Factor	Indicated Ultimate ALAE	Incurred ULAE	Incurred LAE
(1)	(2)	(3)	(4)	(5)	(6)
1977					132
1978					147
1979					488
1980					1,318
1981					543
1982					565
1983					9,127
1984					324
1985				160	137
1986				270	235
1987				652	404
1988				235	122
1989				2,727	801
1990				119	106
1991				403	326
1992				270	284
1993				806	569
1994				192	315
1995				698	205
1996				355	227
1997				892	451
1998				3,920	812
1999				1,757	631
2000				1,209	676
2001				1,207	673
2002				3,643	1,583
2003	3,240	1.000		3,240	1,882
2004	845	0.997		842	626
2005	15,253	1.004		15,314	4,663
2006	879	1.009		887	224
2007	2,921	0.977		2,854	1,950
2008	139,787	1.006		140,626	138,842
2009	7,335	1.125		8,252	2,142

Notes:

- (2) Exhibit 4, Sheet 5
- (3) Exhibit 4, Sheet 5
- (4) 2002 - 2009: (2) \* (3); 1986 - 2001: from TWIA's annual statements
- (5) From TWIA's annual statements
- (6) 1986 - 2009: (4) + (5); prior years from prior TWIA annual statements

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
 Incurred ALAE Development Factors  
 TWIA Schedule P Incurred ALAE (Including IBNR)

Exhibit 4  
 Sheet 5

Accident Year	<u>Months of Development</u>							
	12 (1)	24 (2)	36 (3)	48 (4)	60 (5)	72 (6)	84 (7)	(8)
2000		942	1,272	1,255	1,175	1,223	1,223	1,209
2001		1,207	1,185	1,313	1,201	1,207	1,207	1,207
2002		3,179	3,139	3,297	3,349	3,501	3,643	3,643
2003		2,882	3,017	3,133	3,235	3,254	3,255	3,240
2004		814	837	839	844	847	845	
2005		12,902	16,742	18,549	16,151	15,253		
2006		704	891	899	879			
2007		2,660	3,107	2,921				
2008		167,316	139,787					
2009		7,335						

Accident Year	<u>Development Factors</u>							
	12 - 24 (1)	24 - 36 (2)	36 - 48 (3)	48 - 60 (4)	60 - 72 (5)	72 - 84 (6)	84 - Ult (7)	(8)
2000		1.350	0.987	0.936	1.041	1.000	0.989	
2001		0.982	1.108	0.915	1.005	1.000	1.000	
2002		0.987	1.050	1.016	1.045	1.041	1.000	
2003		1.047	1.038	1.033	1.006	1.000	0.995	
2004		1.028	1.002	1.006	1.004	0.998		
2005		1.298	1.108	0.871	0.944			
2006		1.266	1.009	0.978				
2007		1.168	0.940					
2008		0.835						
Average		1.107	1.030	0.965	1.008	1.008	0.996	
Avg x hi / lo		1.111	1.032	0.970	1.014	1.000	0.998	
Avg 3 Year		1.090	1.019	0.951	0.985	1.013	0.998	
Avg 5 Year		1.119	1.020	0.981	1.001	1.008	0.996	
Prior		1.163	1.048	0.972	1.018	1.006	0.998	1.000
Selected		1.118	1.030	0.968	1.005	1.007	0.997	1.000
Cumulative		1.125	1.006	0.977	1.009	1.004	0.997	1.000



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

Exhibit 5

Basis for Hurricane Loss Ratio	(1)	Indicated Loss Ratio (2)	LAE Factor (3)	Indicated Loss & LAE Ratio (4)
Industry Experience		43.6%	0.158	50.5%
<u>Hurricane Models</u>				
AIR Model		38.0%	0.158	44.0%
RMS Model		47.9%	0.158	55.5%
Average of Models		43.0%	0.158	49.8%

Notes:

- (2) Exhibit 6 - Exhibit 8, Sheet 1
- (3) Exhibit 4, Sheet 1
- (4) = (2) \* [1 + (3)]

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Industry Experience -- Commercial Extended Coverage  
1970 - 2009 -- Hurricane Years Only

Exhibit 6  
Sheet 1

Accident Year	Eamed Premium at Current TWIA Rate Level	Incurred Loss Ratio
(1)	(2)	(3)
1970	41,472,758	55.7%
1971	44,801,566	124.8%
1980	49,777,955	77.2%
1983	29,204,479	356.4%
1986	37,634,154	12.6%
1989	59,641,862	6.9%
1990	50,736,795	94.2%
1999	116,829,603	13.5%
2003	189,717,141	29.5%
2005	220,447,482	248.2%
2007	319,594,681	4.2%
2008	302,869,180	416.1%
<hr/>		
(4) Simple Average Loss Ratio for Hurricane Years		119.9%
(5) Selected Non-Hurricane Loss Ratio		9.9%
(6) Average Hurricane Loss Ratio for Hurricane Years		110.0%
(7) Historical Hurricane Frequency		
(a) 40.3-Year (10/1/1969 - 12/31/2009)		0.323 (1 Hurricane Every 3.1 years)
(b) 159-Year (1/1/1851 - 12/31/2009)		0.396 (1 Hurricane Every 2.5 years)
Selected Frequency		0.396 (1 Hurricane Every 2.5 years)
(8) Indicated Hurricane Loss Ratio		43.6%

Notes:

- (2) Exhibit 6, Sheet 2. 1999 year ending 12/31/99; all other accident years ending 9/30/xx
- (3) Exhibit 6, Sheet 2. 1999 year ending 12/31/99; all other accident years ending 9/30/xx
- (4) = Average of (3)
- (5) Exhibit 6, Sheet 2
- (6) = (4) - (5)
- (7) Exhibit 9
- (8) = (6) \* (7) Selected

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Industry Experience -- Commercial Extended Coverage  
1970 - 2009

Exhibit 6  
Sheet 2

Accident Year	Eamed Premium	Eamed Premium at 1992 CMR	Eamed Premium at Current Rates	Incurred Losses	Incurred Loss Ratio	Hurricane Indicator
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1970	10,874,210	18,835,352	41,472,758	23,092,142	55.7%	H
1971	13,340,143	20,347,170	44,801,566	55,893,676	124.8%	H
1972	18,906,678	24,314,307	53,536,636	8,704,522	16.3%	
1973	21,737,541	23,257,532	51,209,768	3,837,493	7.5%	
1974	22,348,193	22,844,661	50,300,685	2,193,087	4.4%	
1975	24,396,629	24,958,305	54,954,628	3,943,412	7.2%	
1976	26,795,934	24,109,943	53,086,656	2,218,115	4.2%	
1977	30,910,821	27,119,226	59,712,667	1,898,346	3.2%	
1978	32,709,599	26,415,338	58,162,806	2,535,872	4.4%	
1979	31,306,685	24,514,306	53,977,005	4,535,147	8.4%	
1980	28,751,765	22,607,257	49,777,955		77.2%	H
1981	24,129,384	21,398,588	47,119,692		10.7%	
1982	18,505,004	17,523,231	38,586,154		4.5%	
1983	12,680,397	13,262,706	29,204,479		356.4%	H
1984	12,736,031	14,992,627	33,013,765		10.9%	
1985	15,169,575	16,422,895	36,163,215		5.3%	
1986	21,130,682	17,090,896	37,634,154		12.6%	H
1987	31,114,529	26,771,157	58,950,088		2.2%	
1988	25,065,531	24,117,319	53,106,337		11.1%	
1989	24,167,085	27,085,314	59,641,862		6.9%	H
1990	19,677,404	23,041,233	50,736,795		94.2%	H
1991	21,794,680	25,534,881	56,227,808		84.5%	
1992	23,737,753	26,950,473	59,344,942		2.1%	
1993	21,990,182		48,422,380		6.9%	
1994	16,604,950		36,564,100		15.1%	
1995	32,374,229		71,288,052		32.7%	
1996	55,367,089		121,918,329		3.7%	
1997	53,196,024		117,137,644		5.2%	
1998	53,986,058		119,513,064		20.4%	
1999	52,435,243		116,829,603		13.5%	H
2000	41,739,697		91,443,671		11.6%	
2001	55,139,169		118,202,002		5.6%	
2002	69,178,278		145,756,807		19.1%	
2003	92,552,442		189,717,141		29.5%	H
2004	103,756,896		206,382,565		2.5%	
2005	114,524,574		220,447,482		248.2%	H
2006	141,904,552		263,905,805		2.4%	
2007	182,312,638		319,594,681		4.2%	H
2008	176,324,148		302,869,180		416.1%	H
2009	187,462,567		312,395,490		2.3%	
Total / Average	1,962,834,989		3,933,110,417		43.8%	
Average of Non-Hurricane Years					11.2%	
Average of Non-Hurricane Years Excluding 1991					8.5%	
Selected					9.9%	

Notes:

- (2) Provided by TDI. 1970 - 1994 are year ending 9/30/xx as of 12/31/99; 1995 - 2008 are year ending 12/31/xx as of 12/31/09
- (3) Provided by TDI (1992 MR = 1992 manual rates)
- (4) 1980 - 2008: Sum of Exhibit 6, Sheet 4 - Sheet 7, (5); 1970 - 1979: (3) \* 2.202
- (5) Provided by TDI. 1980 - 1994 are year ending 9/30/xx as of 12/31/99; 1995 - 2008 are year ending 12/31/xx as of 12/31/09
- (6) 1980 - 2008: Exhibit 6, Sheet 3; 1970 - 1979: (5) / (4)
- (7) "H" indicates occurrence of hurricane(s) during the time period

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Industry Experience -- Commercial Extended Coverage

<u>Loss Ratios by Territory / Tier</u>					
Accident Year	Territory 8	Territory 9	Territory 10	Tier 2	Weighted Loss Ratio
(1)	(2)	(3)	(4)	(5)	(6)
1981	22.1%	7.1%	6.4%	7.9%	10.7%
1982	2.7%	4.5%	5.4%	7.1%	4.5%
1983	1236.3%	5.3%	57.5%	207.1%	356.4%
1984	10.6%	5.3%	13.6%	19.8%	10.9%
1985	5.1%	3.5%	6.1%	11.1%	5.3%
1986	4.1%	1.4%	22.4%	17.5%	12.6%
1987	0.7%	2.3%	2.9%	4.2%	2.2%
1988	16.1%	4.8%	11.4%	6.7%	11.1%
1989	18.7%	2.4%	2.7%	7.6%	6.9%
1990	331.4%	3.5%	12.4%	9.5%	94.2%
1991	29.9%	29.6%	140.6%	6.5%	84.5%
1992	1.0%	1.4%	3.0%	5.3%	2.1%
1993	19.0%	2.5%	2.5%	8.0%	6.9%
1994	0.5%	5.2%	27.6%	11.1%	15.1%
1995	10.9%	14.5%	52.9%	29.0%	32.7%
1996	2.1%	4.0%	4.4%	9.3%	3.7%
1997	7.4%	2.8%	5.1%	12.7%	5.2%
1998	29.2%	19.4%	16.2%	12.9%	20.4%
1999	3.8%	17.8%	16.7%	13.0%	13.5%
2000	2.9%	2.8%	19.4%	81.7%	11.6%
2001	7.0%	3.3%	5.7%	30.0%	5.6%
2002	16.1%	42.8%	9.6%	12.0%	19.1%
2003	2.5%	9.4%	53.3%	31.4%	29.5%
2004	3.9%	0.9%	2.6%	3.5%	2.5%
2005	87.1%	2.1%	453.6%	51.8%	248.2%
2006	3.0%	1.3%	2.6%	5.2%	2.4%
2007	2.2%	1.4%	6.5%	8.6%	4.2%
2008	788.6%	5.4%	414.6%	314.4%	416.1%
2009	4.6%	2.3%	1.0%	5.1%	2.3%
Average	92.1%	7.2%	47.5%	32.8%	49.7%

<u>TWIA 2009 Written Premium by Territory / Tier</u>					
	Territory 8	Territory 9	Territory 10	Tier 2	Total
(7) Amount	29,329,394	26,219,537	55,153,778	745,187	111,447,896
(8) % Share	26.32%	23.53%	49.49%	0.67%	100.00%

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 (8)
- (7) Provided by TWIA
- (8) = (7) / (7) Total

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

Exhibit 6  
Sheet 4

Accident Year	Eamed Premium	Eamed Premium at 1992 MR	TWIA Factor to Current Rate Level	Eamed Premium at Current Rates	Incurred Loss	Incurred Loss Ratio
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1981	2,387,015	2,241,676	2.202	4,936,171	1,089,270	22.1%
1982	1,604,454	1,510,804	2.202	3,326,790	88,884	2.7%
1983	913,865	968,224	2.202	2,132,029	26,357,425	1236.3%
1984	1,195,339	1,366,667	2.202	3,009,401	318,455	10.6%
1985	2,581,481	2,777,593	2.202	6,116,260	314,878	5.1%
1986	3,013,362	2,349,181	2.202	5,172,897	211,282	4.1%
1987	3,004,153	2,585,122	2.202	5,692,439	37,480	0.7%
1988	2,905,355	2,728,206	2.202	6,007,510	969,836	16.1%
1989	2,825,114	3,015,974	2.202	6,641,175	1,244,199	18.7%
1990	2,303,321	2,474,141	2.202	5,448,058	18,053,460	331.4%
1991	2,203,500	2,080,579	2.202	4,581,435	1,371,244	29.9%
1992	2,352,391	2,012,473	2.202	4,431,466	46,331	1.0%
1993	2,406,016		2.202	5,298,047	1,005,945	19.0%
1994	2,807,090		2.202	6,181,212	28,034	0.5%
1995	2,645,757		2.202	5,825,957	635,625	10.9%
1996	5,519,716		2.202	12,154,415	249,644	2.1%
1997	5,461,636		2.202	12,026,522	886,485	7.4%
1998	6,133,105		2.230	13,676,824	3,994,564	29.2%
1999	6,706,028		2.258	15,142,211	575,316	3.8%
2000	4,997,201		2.177	10,878,907	320,131	2.9%
2001	6,607,805		2.069	13,671,549	962,576	7.0%
2002	8,206,286		1.996	16,379,747	2,632,325	16.1%
2003	11,209,159		1.882	21,095,637	529,845	2.5%
2004	12,157,867		1.745	21,215,478	830,387	3.9%
2005	13,772,545		1.621	22,325,295	19,454,796	87.1%
2006	17,935,402		1.530	27,441,165	813,715	3.0%
2007	24,067,550		1.422	34,224,056	741,281	2.2%
2008	24,746,824		1.364	33,754,668	266,174,653	788.6%
2009	29,145,214		1.276	37,189,293	1,716,166	4.6%
<b>Total</b>	<b>211,814,551</b>			<b>365,976,614</b>	<b>351,654,232</b>	<b>96.1%</b>

Notes:

- (2) Provided by TDI. 1981 - 1995 are year ending 9/30/xx as of 12/31/99; 1996 - 2009 are year ending 12/31/xx as of 12/31/09
- (3) Provided by TDI (1992 MR = 1992 manual rates)
- (4) Represents 1/1/98 through 2/1/08 rate changes for TWIA; factors assume uniform eaming of written premium and that TWIA premium represents 82.9% of industry data in Tier 1 -- Territory 8
- (5) = (3) \* (4) for 1981 - 1993; (2) \* (4) for 1994 - 2009
- (6) Provided by TDI. 1981 - 1995 are year ending 9/30/xx as of 12/31/99; 1996 - 2009 are year ending 12/31/xx as of 12/31/09
- (7) = (6) / (5)

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Industry Experience -- Commercial Extended Coverage  
Tier 1 -- Territory 9 (Nueces County)

Exhibit 6  
Sheet 5

Accident Year	Eamed Premium	Eamed Premium at 1992 MR	TWIA Factor to Current Rate Level	Eamed Premium at Current Rates	Incurred Loss	Incurred Loss Ratio
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1981	1,367,219	1,286,028	2.202	2,831,834	200,989	7.1%
1982	1,347,308	1,333,262	2.202	2,935,843	132,668	4.5%
1983	745,985	820,826	2.202	1,807,459	96,051	5.3%
1984	558,639	652,809	2.202	1,437,485	76,481	5.3%
1985	1,235,059	1,383,103	2.202	3,045,593	106,148	3.5%
1986	2,228,911	1,849,840	2.202	4,073,348	56,387	1.4%
1987	2,381,538	2,086,940	2.202	4,595,442	105,275	2.3%
1988	1,796,653	1,719,227	2.202	3,785,738	181,414	4.8%
1989	1,632,453	1,826,430	2.202	4,021,799	98,116	2.4%
1990	1,429,526	1,769,972	2.202	3,897,478	135,678	3.5%
1991	1,390,109	1,555,310	2.202	3,424,793	1,013,636	29.6%
1992	1,571,433	1,629,721	2.202	3,588,646	49,512	1.4%
1993	1,587,772		2.202	3,496,274	86,000	2.5%
1994	2,203,514		2.202	4,852,138	254,088	5.2%
1995	2,669,951		2.202	5,879,232	854,753	14.5%
1996	5,639,923		2.202	12,419,110	502,177	4.0%
1997	3,183,758		2.202	7,010,635	199,390	2.8%
1998	3,613,310		2.228	8,050,455	1,561,275	19.4%
1999	6,808,428		2.255	15,353,005	2,735,082	17.8%
2000	5,167,158		2.179	11,259,237	317,804	2.8%
2001	6,341,638		2.077	13,171,582	431,244	3.3%
2002	8,481,563		2.009	17,039,460	7,300,265	42.8%
2003	11,816,105		1.902	22,474,232	2,108,974	9.4%
2004	13,741,531		1.773	24,363,734	212,644	0.9%
2005	15,983,165		1.657	26,484,104	566,758	2.1%
2006	20,884,067		1.571	32,808,869	410,537	1.3%
2007	27,767,805		1.470	40,818,673	582,442	1.4%
2008	28,160,818		1.416	39,875,718	2,149,818	5.4%
2009	29,895,115		1.333	39,850,188	900,469	2.3%
<b>Total</b>	<b>211,630,454</b>			<b>364,652,104</b>	<b>23,426,075</b>	<b>6.4%</b>

Notes:

- (2) Provided by TDI. 1981 - 1995 are year ending 9/30/xx as of 12/31/99; 1996 - 2009 are year ending 12/31/xx as of 12/31/09
- (3) Provided by TDI (1992 MR = 1992 manual rates)
- (4) Represents 1/1/98 through 2/1/08 rate changes for TWIA; factors assume uniform earning of written premium and that TWIA premium represents 77.8% of industry data in Tier 1 -- Territory 9
- (5) = (3) \* (4) for 1981 - 1993; (2) \* (4) for 1994 - 2009
- (6) Provided by TDI. 1981 - 1995 are year ending 9/30/xx as of 12/31/99; 1996 - 2009 are year ending 12/31/xx as of 12/31/09
- (7) = (6) / (5)

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Industry Experience -- Commercial Extended Coverage  
Tier 1 -- Territory 10 (Other Tier 1)

Exhibit 6  
Sheet 6

Accident Year	Eamed Premium	Eamed Premium at 1992 MR	TWIA Factor to Current Rate Level	Eamed Premium at Current Rates	Incurred Loss	Incurred Loss Ratio
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1981	4,418,649	3,950,311	2.202	8,698,585	555,175	6.4%
1982	4,012,396	3,832,674	2.202	8,439,548	453,010	5.4%
1983	3,769,988	4,139,464	2.202	9,115,100	5,242,728	57.5%
1984	4,835,650	5,883,059	2.202	12,954,496	1,759,233	13.6%
1985	3,637,366	3,997,227	2.202	8,801,894	534,724	6.1%
1986	4,787,352	3,948,102	2.202	8,693,721	1,943,819	22.4%
1987	5,996,981	5,352,970	2.202	11,787,240	338,938	2.9%
1988	5,872,305	5,768,621	2.202	12,702,503	1,442,599	11.4%
1989	5,125,436	5,918,163	2.202	13,031,795	349,413	2.7%
1990	3,842,130	4,624,825	2.202	10,183,865	1,263,817	12.4%
1991	4,253,902	4,765,878	2.202	10,494,463	14,752,702	140.6%
1992	4,034,147	4,187,015	2.202	9,219,807	276,158	3.0%
1993	4,540,606		2.202	9,998,414	245,603	2.5%
1994	5,145,260		2.202	11,329,863	3,130,886	27.6%
1995	9,324,050		2.202	20,531,558	10,852,486	52.9%
1996	15,331,047		2.202	33,758,965	1,478,175	4.4%
1997	17,116,368		2.202	37,690,242	1,911,482	5.1%
1998	17,623,413		2.223	39,176,847	6,340,723	16.2%
1999	15,019,386		2.244	33,703,502	5,614,569	16.7%
2000	11,756,138		2.183	25,663,649	4,969,254	19.4%
2001	15,158,746		2.102	31,863,684	1,824,700	5.7%
2002	20,531,659		2.047	42,028,306	4,053,342	9.6%
2003	28,451,442		1.962	55,821,729	29,757,859	53.3%
2004	30,464,388		1.859	56,633,297	1,462,655	2.6%
2005	33,794,240		1.765	59,646,834	270,571,910	453.6%
2006	45,529,201		1.697	77,263,054	2,046,215	2.6%
2007	72,272,338		1.616	116,792,098	7,561,757	6.5%
2008	66,887,312		1.573	105,213,742	436,249,301	414.6%
2009	67,356,562		1.506	101,438,982	1,023,502	1.0%
<b>Total</b>	<b>530,888,458</b>			<b>982,677,783</b>	<b>818,006,735</b>	<b>83.2%</b>

Notes:

- (2) Provided by TDI. 1981 - 1995 are year ending 9/30/xx as of 12/31/99; 1996 - 2009 are year ending 12/31/xx as of 12/31/09
- (3) Provided by TDI (1992 MR = 1992 manual rates)
- (4) Represents 1/1/98 through 2/1/08 rate changes for TWIA; factors assume uniform eaming of written premium and that TWIA premium represents 62.3% of industry data in Tier 1 -- Territory 10
- (5) = (3) \* (4) for 1981 - 1993; (2) \* (4) for 1994 - 2009
- (6) Provided by TDI. 1981 - 1995 are year ending 9/30/xx as of 12/31/99; 1996 - 2009 are year ending 12/31/xx as of 12/31/09
- (7) = (6) / (5)

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Industry Experience -- Commercial Extended Coverage  
Tier 2 (Territories 1 and 11)

Exhibit 6  
Sheet 7

AY Ending	Eamed Premium	Eamed Premium at 1992 MR	TWIA Factor to Current Rate Level	Eamed Premium at Current Rates	Incurred Loss	Incurred Loss Ratio
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1981	15,956,501	13,920,573	2.202	30,653,102	2,427,294	7.9%
1982	11,540,846	10,846,491	2.202	23,883,973	1,700,638	7.1%
1983	7,250,559	7,334,192	2.202	16,149,891	33,451,768	207.1%
1984	6,146,403	7,090,092	2.202	15,612,383	3,096,573	19.8%
1985	7,715,669	8,264,972	2.202	18,199,468	2,019,280	11.1%
1986	11,101,057	8,943,773	2.202	19,694,188	3,439,343	17.5%
1987	19,731,857	16,746,125	2.202	36,874,967	1,552,595	4.2%
1988	14,491,218	13,901,265	2.202	30,610,586	2,041,063	6.7%
1989	14,584,082	16,324,747	2.202	35,947,093	2,746,147	7.6%
1990	12,102,427	14,172,295	2.202	31,207,394	2,967,816	9.5%
1991	13,947,169	17,133,114	2.202	37,727,117	2,440,246	6.5%
1992	15,779,782	19,121,264	2.202	42,105,023	2,232,412	5.3%
1993	13,455,788		2.202	29,629,645	2,357,383	8.0%
1994	6,449,086		2.202	14,200,887	1,579,205	11.1%
1995	17,734,471		2.202	39,051,305	11,314,057	29.0%
1996	28,876,403		2.202	63,585,839	5,938,855	9.3%
1997	27,434,262		2.202	60,410,245	7,691,121	12.7%
1998	26,616,230		2.202	58,608,938	7,574,576	12.9%
1999	23,901,401		2.202	52,630,885	6,821,707	13.0%
2000	19,819,200		2.202	43,641,878	35,670,537	81.7%
2001	27,030,980		2.201	59,495,187	17,852,673	30.0%
2002	31,958,770		2.200	70,309,294	8,461,924	12.0%
2003	41,075,736		2.199	90,325,543	28,328,834	31.4%
2004	47,393,110		2.198	104,170,056	3,696,051	3.5%
2005	50,974,624		2.197	111,991,249	57,964,205	51.8%
2006	57,555,882		2.196	126,392,717	6,555,062	5.2%
2007	58,204,945		2.195	127,759,854	10,985,208	8.6%
2008	56,529,194		2.194	124,025,052	389,935,277	314.4%
2009	61,065,676		2.193	133,917,027	6,848,424	5.1%
<b>Total</b>	<b>746,423,328</b>			<b>1,648,810,786</b>	<b>669,690,274</b>	<b>40.6%</b>

Notes:

- (2) Provided by TDI. 1981 - 1995 are year ending 9/30/xx as of 12/31/99; 1996 - 2009 are year ending 12/31/xx as of 12/31/09
- (3) Provided by TDI (1992 MR = 1992 manual rates)
- (4) Represents 1/1/98 through 2/1/08 rate changes for TWIA; factors assume uniform eaming of written premium and that TWIA premium represents 0.8% of industry data in Tier 2
- (5) = (3) \* (4) for 1981 - 1993; (2) \* (4) for 1994 - 2009
- (6) Provided by TDI. 1981 - 1995 are year ending 9/30/xx as of 12/31/99; 1996 - 2009 are year ending 12/31/xx as of 12/31/09
- (7) = (6) / (5)



**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Hurricane Loss Ratio -- AIR Model

Exhibit 7  
Sheet 1

County	TWIA Insured Values (000s) as of 6/30/09	Modeled Loss Cost	Expected Annual Hurricane Loss
(1)	(2)	(3)	(4)
Aransas	356,252	4.735	1,686,853
Brazoria	1,220,442	2.074	2,531,197
Calhoun	189,307	1.955	370,095
Cameron	2,451,359	1.764	4,324,197
Chambers	129,760	2.462	319,469
Galveston	3,150,869	4.842	15,256,508
Harris	83,312	5.074	422,725
Jefferson	1,523,204	1.316	2,004,536
Kenedy	9,880	0.825	8,151
Kleberg	211,176	0.581	122,693
Matagorda	203,743	2.461	501,412
Nueces	3,824,752	3.674	14,052,139
Refugio	43,352	0.955	41,401
San Patricio	420,627	3.139	1,320,348
Willacy	64,225	1.332	85,548
<b>Total</b>	<b>13,882,260</b>	<b>3.101</b>	<b>43,047,272</b>
(5) 2009 Earned Premium at Present Rates			113,150,007
(6) Indicated Hurricane Loss Ratio			38.0%

Notes:

- (2) Provided by TWIA
- (3) Exhibit 7, Sheet 2
- (4) = (2) \* (3)
- (5) Exhibit 10, Sheet 1
- (6) = (4) Total / (5)

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
AIR Simulated Hurricane Results

Exhibit 7  
Sheet 2

County	TWIA Insured Values (000s) as of 12/31/09	Average Annual Modeled Loss	Modeled Loss Cost
(1)	(2)	(3)	(4)
Aransas	398,440	1,886,609	4.735
Brazoria	1,416,890	2,938,561	2.074
Calhoun	158,920	310,716	1.955
Cameron	2,326,276	4,103,565	1.764
Chambers	98,902	243,521	2.462
Galveston	3,433,950	16,626,012	4.842
Harris	141,891	720,014	5.074
Jefferson	1,689,521	2,222,759	1.316
Kenedy	10,198	8,412	0.825
Kleberg	197,322	114,576	0.581
Matagorda	224,629	552,790	2.461
Nueces	3,778,247	13,882,241	3.674
Refugio	40,396	38,566	0.955
San Patricio	403,223	1,265,591	3.139
Willacy	52,015	69,275	1.332
<b>Total</b>	<b>14,370,820</b>	<b>44,983,208</b>	<b>3.130</b>

Notes:

- (2) Provided by TWIA and Geo-coded by AIR
- (3) Provided by AIR
- (4) = (3) / (2)

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Hurricane Loss Ratio -- RMS Model

Exhibit 8  
Sheet 1

County	TWIA Insured Values (000s) as of 6/30/09	Modeled Loss Cost	Expected Annual Hurricane Loss
(1)	(2)	(3)	(4)
Aransas	356,252	4.957	1,765,941
Brazoria	1,220,442	2.875	3,508,771
Calhoun	189,307	3.902	738,676
Cameron	2,451,359	4.277	10,484,462
Chambers	129,760	2.447	317,523
Galveston	3,150,869	5.964	18,791,783
Harris	83,312	3.949	328,999
Jefferson	1,523,204	1.955	2,977,864
Kenedy	9,880	1.273	12,577
Kleberg	211,176	1.068	225,536
Matagorda	203,743	2.888	588,410
Nueces	3,824,752	3.478	13,302,487
Refugio	43,352	1.324	57,398
San Patricio	420,627	2.298	966,601
Willacy	64,225	1.944	124,853
<b>Total</b>	<b>13,882,260</b>	<b>3.904</b>	<b>54,191,881</b>
(5) 2009 Earned Premium at Present Rates			113,150,007
(6) Indicated Hurricane Loss Ratio			47.9%

Notes:

- (2) Provided by TWIA
- (3) Exhibit 8, Sheet 2
- (4) = (2) \* (3)
- (5) Exhibit 10, Sheet 1
- (6) = (4) Total / (5)

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
RMS Simulated Hurricane Results

Exhibit 8  
Sheet 2

County	TWIA Insured Values (000s) as of 12/31/09	Average Annual Modeled Loss	Modeled Loss Cost
(1)	(2)	(3)	(4)
Aransas	359,764	1,783,331	4.957
Brazoria	1,409,578	4,052,268	2.875
Calhoun	207,918	811,207	3.902
Cameron	2,326,276	9,950,153	4.277
Chambers	134,902	330,136	2.447
Galveston	3,441,199	20,521,943	5.964
Harris	106,544	420,728	3.949
Jefferson	1,690,468	3,305,553	1.955
Kenedy	10,198	12,980	1.273
Kleberg	197,322	210,795	1.068
Matagorda	224,629	648,759	2.888
Nueces	3,782,916	13,156,902	3.478
Refugio	40,396	53,470	1.324
San Patricio	396,845	912,129	2.298
Willacy	52,015	101,141	1.944
<b>Total</b>	<b>14,380,970</b>	<b>56,271,495</b>	<b>3.913</b>

Notes:

- (2) Provided by TWIA and Geo-coded by RMS
- (3) Provided by RMS
- (4) = (3) / (2)

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Texas Hurricanes 1850 - 2009

Exhibit 9

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

<u>Frequency</u>	<u>Date Period</u>	<u>Hurricanes</u>	<u>Period</u>	<u>Annual Frequency</u>
40.3-Year	10/1/1969 - 12/31/2009	13	40.3	0.323
159-Year	1/1/1851 - 12/31/2009	63	159	0.396

Notes:

(1), (2) from NOAA Technical Memorandum NWS TPC-5, updated through 2007

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Calculation of Earned Premium at Present Rate Level

Exhibit 10  
Sheet 1

Year	TWIA Written Premium	Factor to Current Rate Level	Written Premium at Current Rate Level	Eamed Premium at Current Rate Level
(1)	(2)	(3)	(4)	(5)
1991	7,329,258	1.693	12,408,434	12,408,434
1992	6,107,171	2.202	13,447,991	12,928,213
1993	10,127,190	2.202	22,300,072	17,874,032
1994	10,672,677	2.202	23,501,235	22,900,654
1995	12,865,905	2.202	28,330,723	25,915,979
1996	15,640,660	2.202	34,440,733	31,385,728
1997	16,536,186	2.202	36,412,682	35,426,708
1998	16,558,977	2.270	37,588,878	37,000,780
1999	17,394,142	2.270	39,484,702	38,536,790
2000	17,945,617	2.082	37,362,775	38,423,739
2001	18,315,597	2.002	36,667,825	37,015,300
2002	24,019,182	1.907	45,804,580	41,236,203
2003	29,226,521	1.734	50,678,787	48,241,684
2004	31,037,241	1.576	48,914,692	49,796,740
2005	35,780,477	1.433	51,273,424	50,094,058
2006	76,847,921	1.329	102,130,887	76,702,156
2007	111,262,470	1.218	135,517,688	118,824,288
2008	97,869,242	1.161	113,626,190	124,571,939
2009	111,447,896	1.011	112,673,823	113,150,007
<b>Total</b>	<b>666,984,330</b>		<b>982,566,121</b>	<b>932,433,432</b>

Notes:

- (2) Provided by TWIA, 1992 reflects adjustment for rate change applied to in-force policies
- (3) Exhibit 10, Sheet 2
- (4) = (2) \* (3) (calculated on a monthly basis)
- (5) Calculated from (4), using annual uniform earning assumption for 1999 and prior and monthly for 2000 and after

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
 Calculation of On-Level Premium Factors

Exhibit 10  
 Sheet 2

Year	Rate Level in Effect				Cumulative Rate Level			# Months			Average Rate Level	Factor to Current Rate Level		
	Applicable Rates		E.O.Y.		B.O.Y.	E.O.Y.		B.O.Y.		E.O.Y.				
(1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1980	Prior			8/1/1980	1.000			1.175	7.0			5.0	1.073	3.295
1981	8/1/1980			9/1/1981	1.175			1.132	8.0			4.0	1.161	3.046
1982	9/1/1981			9/1/1982	1.132			1.428	8.0			4.0	1.231	2.872
1983	9/1/1982			10/10/1983	1.428			1.514	9.3			2.7	1.447	2.444
1984	10/10/1983			10/10/1983	1.514			1.514	12.0			0.0	1.514	2.336
1985	10/10/1983	3/1/1985	3/15/1985	11/15/1985	1.514	1.892	2.428	2.651	2.0	0.5	8.0	1.5	2.281	1.550
1986	11/15/1985			11/15/1985	2.651			2.651	12.0			0.0	2.651	1.334
1987	11/15/1985			7/1/1987	2.651			2.407	6.0			6.0	2.529	1.398
1988	7/1/1987			11/1/1988	2.407			2.075	10.0			2.0	2.352	1.503
1989	11/1/1988			11/1/1988	2.075			2.075	12.0			0.0	2.075	1.704
1990	11/1/1988			3/1/1990	2.075			2.104	2.0			10.0	2.099	1.685
1991	3/1/1990			4/1/1991	2.104			2.083	3.0			9.0	2.088	1.693
1992	1/1/1992			1/1/1992	1.606			1.606	12.0			0.0	1.606	2.202
1993	1/1/1992			10/1/1993	1.606			1.606	9.0			3.0	1.606	2.202
1994	10/1/1993			10/1/1993	1.606			1.606	12.0			0.0	1.606	2.202
1995	10/1/1993			10/1/1993	1.606			1.606	12.0			0.0	1.606	2.202
1996	10/1/1993			10/1/1993	1.606			1.606	12.0			0.0	1.606	2.202
1997	10/1/1993			10/1/1993	1.606			1.606	12.0			0.0	1.606	2.202
1998	1/1/1998			1/1/1998	1.558			1.558	12.0			0.0	1.558	2.270
1999	1/1/1998			1/1/1998	1.558			1.558	12.0			0.0	1.558	2.270
2000	1/1/2000			1/1/2000	1.698			1.698	12.0			0.0	1.698	2.082
2001	1/1/2001			1/1/2001	1.766			1.766	12.0			0.0	1.766	2.002
2002	1/1/2002			1/1/2002	1.854			1.854	12.0			0.0	1.854	1.907
2003	1/1/2003			1/1/2003	2.039			2.039	12.0			0.0	2.039	1.734
2004	1/1/2004			1/1/2004	2.243			2.243	12.0			0.0	2.243	1.576
2005	1/1/2005			1/1/2005	2.468			2.468	12.0			0.0	2.468	1.433
2006	1/1/2006	9/1/2006		9/1/2006	2.591	2.798		2.798	8.0	4.0		0.0	2.660	1.329
2007	1/1/2007			1/1/2007	2.902			2.902	12.0			0.0	2.902	1.218
2008	1/1/2007	2/1/2008		2/1/2008	2.902	3.059		3.059	1.0	11.0		0.0	3.046	1.161
2009	2/1/2008	2/1/2009		2/1/2009	3.059	3.536		3.536	1.0	11.0		0.0	3.496	1.011
Current				2/1/2009				3.536					3.536	1.000

Notes:

- (1) - (4) Rates in effect and beginning and end of year (B.O.Y. and E.O.Y.)  
 For each year except 1985, 2006, and 2008 the B.O.Y. and E.O.Y. rates are the only rates applicable  
 For 1985, there were two additional rate changes  
 For 2006, there was one additional rate change  
 For 2008, the rate change took effect mid-year
- (5) - (8) Based on Exhibit 10, Sheet 3
- (9) - (12) Number of months that each of the rates were effective
- (13) = Weighted average of (5) - (8) using (9) - (12) as weights
- (14) = Current (13) / (13)

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
History of Rate Level Changes

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Effective Date	Rate Change	Cumulative Rate Level
(1)	(2)	(3)
Prior		1.000
8/1/80	17.5%	1.175
9/1/81	-3.7%	1.132
9/1/82	26.2%	1.428
10/10/83	6.0%	1.514
3/1/85	25.0%	1.892
3/15/85	28.3%	2.428
11/15/85	9.2%	2.651
7/1/87	-9.2%	2.407
11/1/88	-13.8%	2.075
3/1/90	1.4%	2.104
4/1/91	-1.0%	2.083
1/1/92	-22.9%	1.606
10/1/93	0.0%	1.606
1/1/98	-3.0%	1.558
1/1/00	9.0%	1.698
1/1/01	4.0%	1.766
1/1/02	5.0%	1.854
1/1/03	10.0%	2.039
1/1/04	10.0%	2.243
1/1/05	10.0%	2.468
1/1/06	5.0%	2.591
9/1/06	8.0%	2.798
1/1/07	3.7%	2.902
2/1/08	5.4%	3.059
2/1/09	15.6%	3.536

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Notes:

- (2) Provided by TWIA, excludes 1/1/92 refund on in-force policies
- (3) = Cumulation of (2)



**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Fixed Expenses and Variable Permissible Loss & LAE Ratios

Exhibit 11

Expense Category	2007	2008	2009	Selected
(1) Direct Written Premium	\$315,139	\$331,058	\$382,342	
(2) Direct Earned Premium	264,890	321,937	357,906	
(3) Commission				
\$ Amount	50,402	52,946	61,149	
% of DWP	16.0%	16.0%	16.0%	16.0%
(4) Other Acquisition				
\$ Amount	\$0	\$0	\$0	
% of DWP	0.0%	0.0%	0.0%	0.0%
(5) General Expense				
Unadjusted \$ Amount	\$9,875	\$9,330	\$20,842	
Adjustments				
Contribution to Statutory Fund	0	0	0	
Adjusted \$ Amount	9,875	9,330	20,842	
% of DWP	3.1%	2.8%	5.5%	3.8%
(6) Taxes, Licenses & Fees				
\$ Amount	\$5,894	\$6,057	\$7,090	
% of DWP	1.9%	1.8%	1.9%	1.9%
(7) Reinsurance Expense				0.0%
(8) Total Fixed Expenses				3.8%
(9) Total Variable Expenses				17.9%
(10) Fund Contribution				40.0%
(11) Variable Permissible Loss & LAE Ratio				42.1%

Notes:

- (1) - (6) From TWIA's Statutory Annual Statements and Insurance Expense Exhibits
- (7) No longer purchased
- (8) = (5) + (7)
- (9) = (3) + (4) + (6)
- (10) Selected judgmentally to incorporate savings from lack of reinsurance purchase
- (11) = 100% - (9) - (10)

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Reconciliation of Paid Loss Data to Schedule P

Accident Year	TWIA Provided Paid Loss			Schedule P	
	Commercial & Farm	Residential	Total	Direct & Assumed Paid Loss	Difference
(1)	(2)	(3)	(4)	(5)	(6)
2000	3,652,082	2,592,416	6,244,498	6,227,000	17,498
2001	1,042,867	2,812,399	3,855,266	3,856,000	(734)
2002	8,023,090	16,816,422	24,839,512	24,746,000	93,512
2003	11,853,560	12,917,686	24,771,246	24,606,000	165,246
2004	619,079	4,677,400	5,296,479	5,167,000	129,479
2005	70,954,508	84,192,434	155,146,942	154,258,000	888,942
2006	1,517,386	2,732,767	4,250,153	4,239,000	11,153
2007	4,979,311	9,847,582	14,826,893	14,784,000	42,893
2008	585,859,292	900,632,602	1,486,491,894	1,486,670,000	(178,106)
2009	706,206	3,876,227	4,582,433	4,861,000	(278,567)
<b>Total</b>	<b>689,207,381</b>	<b>1,041,097,935</b>	<b>1,730,305,316</b>	<b>1,729,414,000</b>	<b>891,316</b>

Notes:

- (2), (3) Provided by TWIA, as of 12/31/2009
- (4) = (2) + (3)
- (5) Based on TWIA 2009 Annual Statement
- (6) = (4) - (5)

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

Exhibit 12  
Sheet 2

Calendar Year	TWIA Provided Written Premium			Annual Statement Gross	
	Commercial	Residential	Total	Written Premium	Difference
(1)	(2)	(3)	(4)	(5)	(6)
1991	7,329,258	13,133,584	20,462,842	20,503,935	(41,093)
1992	6,107,171	5,357,578	11,464,749	11,495,409	(30,660)
1993	9,185,541	10,130,170	19,315,711	19,376,959	(61,248)
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	17,945,617	30,064,713	48,010,330	48,012,426	(2,096)
2001	18,315,597	36,314,642	54,630,239	54,630,727	(488)
2002	24,019,182	48,948,428	72,967,610	72,967,831	(221)
2003	29,226,521	58,761,878	87,988,399	87,987,279	1,120
2004	31,037,241	71,452,769	102,490,010	102,384,351	105,659
2005	35,780,477	78,147,354	113,927,831	113,927,701	130
2006	76,847,921	119,985,742	196,833,663	196,833,235	428
2007	111,262,470	203,876,838	315,139,308	315,139,307	1
2008	97,869,242	233,179,575	331,048,817	331,057,645	(8,828)
2009	111,447,896	270,894,506	382,342,402	382,342,402	-
<b>Total</b>	<b>666,042,681</b>	<b>1,320,555,746</b>	<b>1,986,598,427</b>	<b>1,987,402,546</b>	<b>-804,119</b>

Notes:

- (2), (3) Provided by TWIA, as of 12/31/2009
- (4) = (2) + (3)
- (5) Based on TWIA Annual Statements
- (6) = (4) - (5)

**Texas Windstorm Insurance Association**  
**Commercial Property - Wind & Hail**  
**Rate Level Review**  
Analysis of Current and Proposed Net Premium Income

Exhibit 13

Premiums and Rate Components	<u>TWIA Indications at Current Rates</u>			<u>TWIA Indications at Proposed Rates</u>		
	Commercial	Residential	Total	Commercial	Residential	Total
(1) 2011 Written Premium	133,000,000	252,000,000	385,000,000	139,650,000	264,600,000	404,250,000
(2) 2011 Earned Premium	130,000,000	245,000,000	375,000,000	133,250,000	251,125,000	384,375,000
(3) Non-Hurricane Loss & LAE Ratio	3.2%	4.4%	4.0%	3.1%	4.3%	3.9%
(4) General Expenses	3.8%	3.8%	3.8%	3.6%	3.6%	3.6%
(5) Commission	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%
(6) Taxes, Licenses, & Fees	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%
(7) Total Non-Catastrophe Expenses	33,021,000	65,464,000	98,485,000	34,211,350	67,719,400	101,930,750
(8) Net Premium Income			276,515,000			282,444,250

Estimated Costs for \$1 Billion Class 1 Bonds

(9) Net Required Premium	235,000,000 - 281,000,000
(10) Net Debt Service	157,000,000 - 187,000,000

Notes:

- (1) projected
- (2) projected
- (3) Exhibit 2, Sheet 1
- (4) Exhibit 11 (5)
- (5) Exhibit 11 (3)
- (6) Exhibit 11 (6)
- (7) = (1) \* [(4) + (5) + (6)] + (2) \* (3)
- (8) = (2) - (7)
- (9) from financial analysts, assuming Class 1 bond proceeds are taxable
- (10) from financial analysts, assuming Class 1 bond proceeds are taxable