



## MEMORANDUM

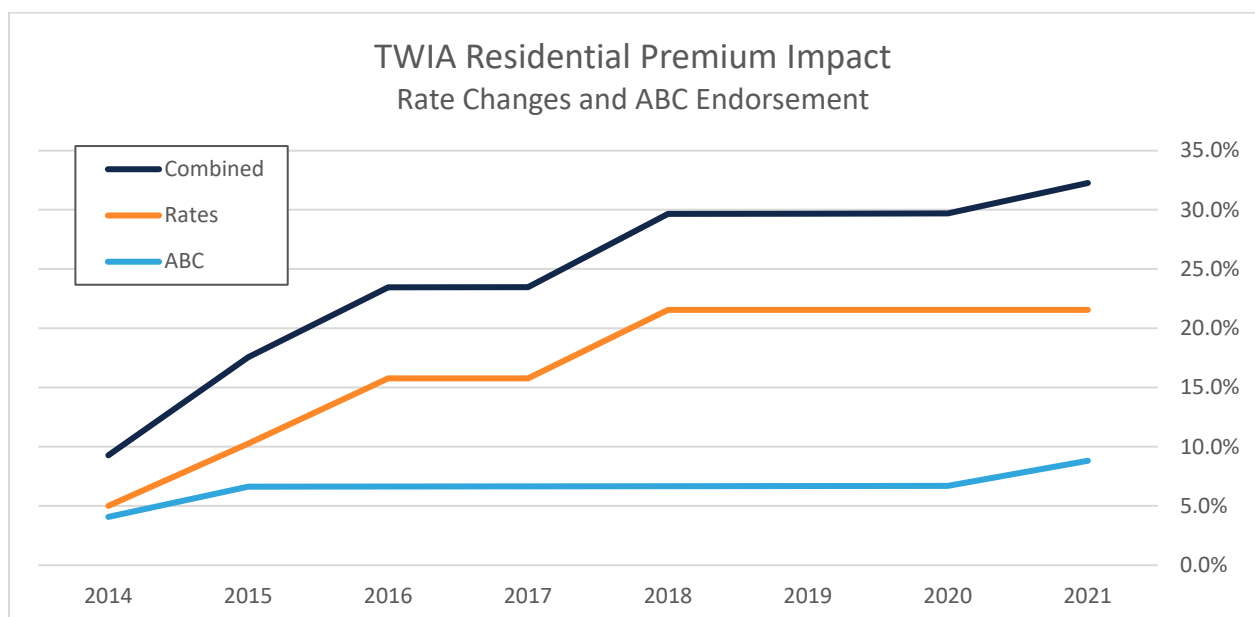
DATE: July 9, 2021  
TO: John Polak, General Manager  
FROM: James Murphy, Assistant Vice President – Analytics & Special Projects  
RE: Supplemental Information Requested by Actuarial & Underwriting Committee

Following please find supplemental information requested by members of the TWIA Actuarial & Underwriting Committee, for reference at its July 21, 2021 meeting:

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### Item 1: How much have the premiums for representative seaward and inland homes increased over the last 10 years considering both rate increases and ABC endorsements?

Data is readily available for the last eight years. Over that timeframe, the cumulative impacts of residential rate increases and ABC endorsements are 21.6% and 8.8%, respectively. The combined cumulative impact is 32.3%.

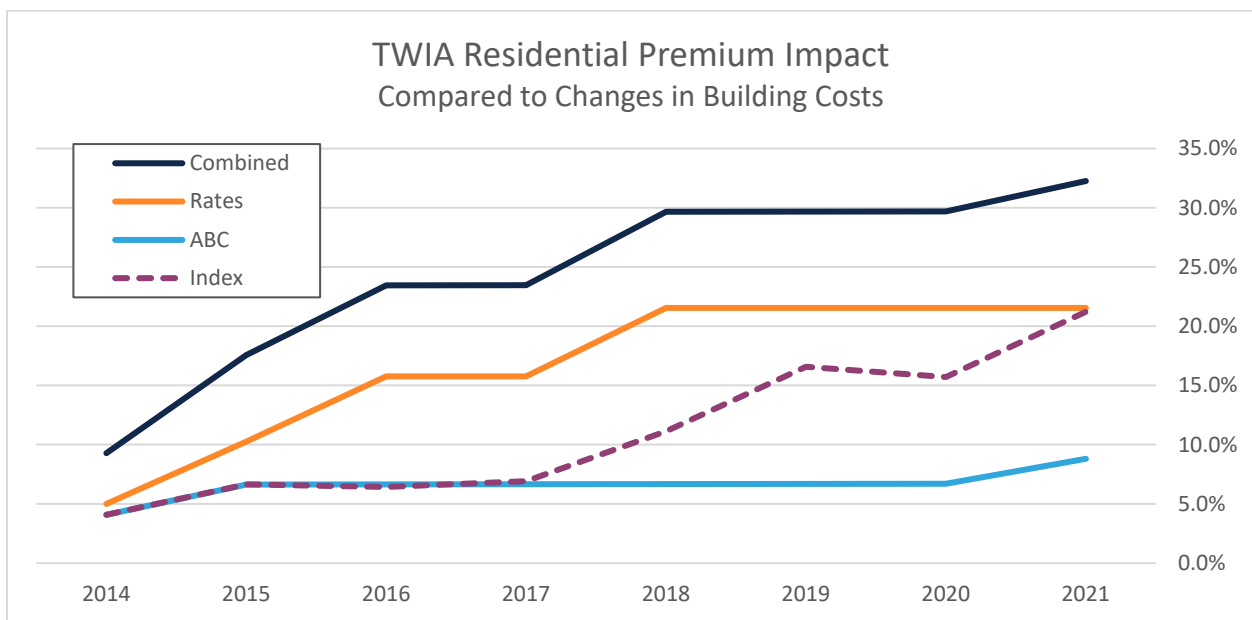


TWIA residential rates increased by 5% in four of the eight years shown and did not change in the remaining four years. The ABC endorsement factors used to automatically increase policy limits at renewal were held flat from 2018 through 2020 to minimize premium impacts to TWIA policyholders after Hurricane Harvey. In 2021, TWIA is implementing factors that represent a two-year average of building cost changes.

Rate changes apply uniformly to all policies regardless of seaward or inland location. ABC endorsement factors apply based on the first three digits of the location ZIP code.

**Item 2: How do these increases compare to increases in building costs over the same period?**

Building costs have increased 21.2% from 2013 to 2021, as provided to TWIA by Marshall & Swift/BOECKH.



Building costs shown have been indexed to 2013 costs.

**Item 3: For both seaward and inland representative homes, what are the hurricane model indicated premium rate discounts and/or reductions in hurricane deductibles for adding various types of opening protection such as hurricane fabric, plywood, metal shutters, etc.**

**Same for adding roof to wall hurricane straps, reinforced roof and any other mitigation measures.**



The catastrophe models provide loss costs for modeled exposures under a variety of scenarios. The inclusion of secondary modifiers can increase or decrease the resulting loss costs, however the models do not indicate premium discounts or changes in coverage such as deductible reductions.

Following are the potential impacts of the various secondary modifiers, as provided by Willis Towers Watson in their September 4, 2020 report to the TWIA Actuarial & Underwriting Committee:

Figure 8

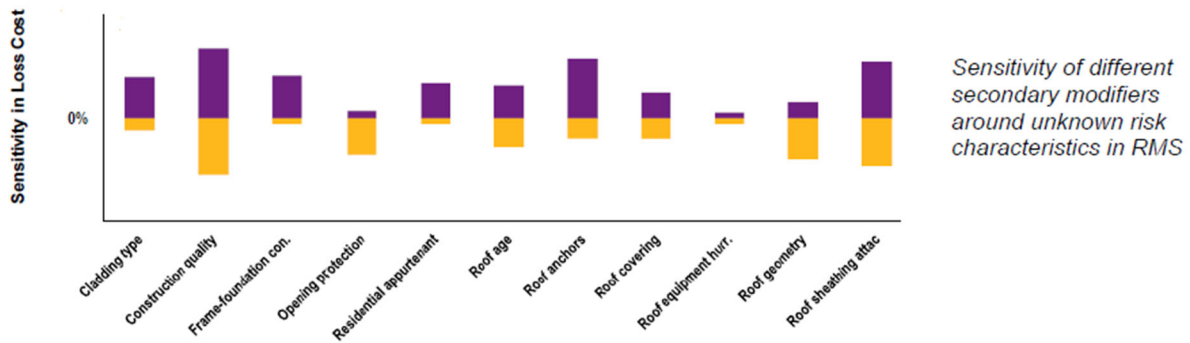
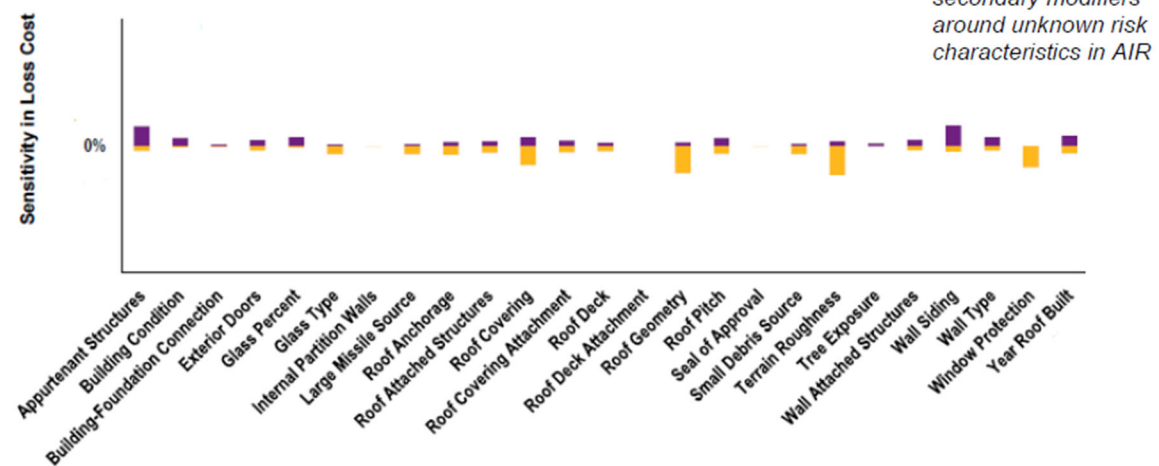


Figure 9



RMS accepts fewer overall modifiers than AIR, but with larger relative impacts. Each model has multiple possible values that can be assigned for each variable that often reference specific engineering standards, building codes, or other technical requirements.

As an example, for opening protection the RMS model has multiple possible values based on whether doors and/or glazed openings (windows) are designed for pressure and/or various sized missiles (wind-



borne debris) or whether any coverings are compliant with specific engineering requirements. The AIR model utilizes four separate variables for exterior doors (door type and whether they are reinforced for pressure), glass percentage, glass type (annealed, tempered, etc.), and window protection (engineered or non-engineered shutters).

The number of possible combinations for these and other mitigation types makes a complete listing of the impacts of each extremely complex.

**Item 4: 10 year history of rate indications, filed rate actions, and TWIA premium**

Following are calendar year written premiums, the indicated rate change produced by TWIA actuarial staff, and the rate change implemented (on January 1 of the subsequent year) for each of the last ten years, separately by class of business:

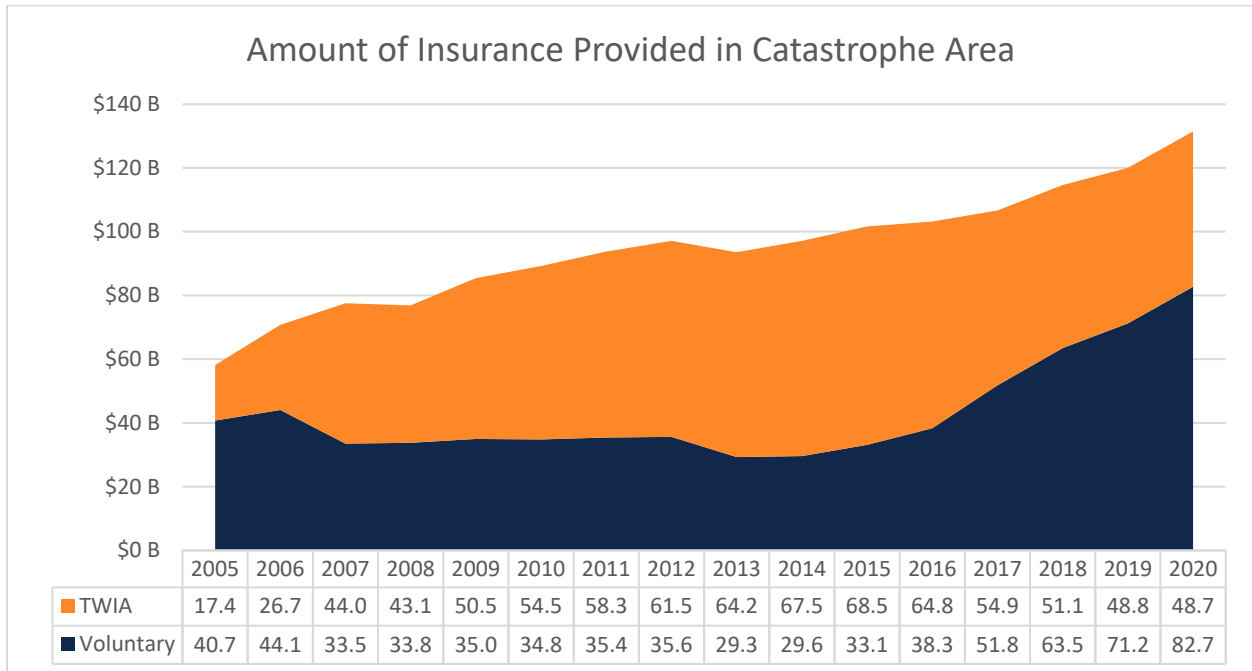
| Year | Residential |           |             | Commercial |           |             |
|------|-------------|-----------|-------------|------------|-----------|-------------|
|      | Premium     | Indicated | Implemented | Premium    | Indicated | Implemented |
| 2011 | \$307.5 M   | 28%       | 5%          | \$100.0 M  | 35%       | 5%          |
| 2012 | \$335.8 M   | 28%       | 5%          | \$110.5 M  | 35%       | 5%          |
| 2013 | \$360.8 M   | 32%       | 5%          | \$112.9 M  | 29%       | 5%          |
| 2014 | \$389.3 M   | 30%       | 5%          | \$104.6 M  | 24%       | 5%          |
| 2015 | \$408.0 M   | 26%       | 5%          | \$98.7 M   | 21%       | 5%          |
| 2016 | \$399.1 M   | 26%       | 0%          | \$88.3 M   | 21%       | 0%          |
| 2017 | \$352.4 M   | 30%       | 5%          | \$70.7 M   | 28%       | 5%          |
| 2018 | \$331.7 M   | 33%       | 0%          | \$65.7 M   | 37%       | 0%          |
| 2019 | \$314.9 M   | 42%       | 0%          | \$59.1 M   | 50%       | 0%          |
| 2020 | \$310.3 M   | 44%       | 0%          | \$60.3 M   | 49%       | 0%          |

**Item 5: Chart comparing industry premium in TX compared to TWIA over time**

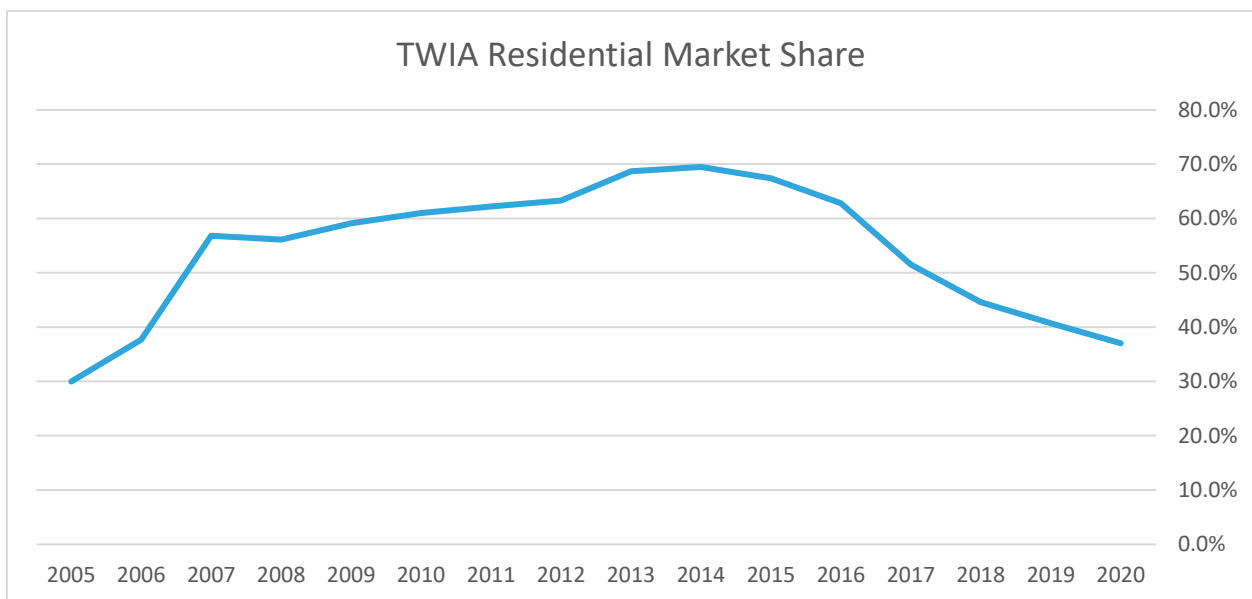
Historically, few voluntary industry companies have offered single-peril wind policies comparable to the coverage provided by TWIA. This makes meaningful premium comparisons difficult. The Texas



Department of Insurance provides TWIA with comparisons of the total amount of residential insurance provided by TWIA and the voluntary market in the catastrophe area, as shown on the following chart:



TWIA market share has increased and decreased over the same time period as shown on the following:





**Item 6: Available history of TWIA premium, reinsurance premium paid, loss & LAE paid, commissions paid, other expenses paid, any other costs paid, and reinsurance recoverables received.**

Following is the requested information for each year 2008-2020 (all amounts are in \$ millions). 2008 is the only year for which reinsurance recoverables were received.

| Year | Written Premium | Reinsurance Premium | Loss & LAE Incurred | Commission | General Expense | Taxes | Debt Service | Reinsurance Recovered |
|------|-----------------|---------------------|---------------------|------------|-----------------|-------|--------------|-----------------------|
| 2008 | 331.0           | 184.1               | 2,587.1             | 52.9       | 9.3             | 6.1   | -            | 1,497.0               |
| 2009 | 380.8           | -                   | (486.3)             | 61.1       | 20.8            | 7.1   | -            | -                     |
| 2010 | 380.3           | -                   | 555.0               | 60.8       | 17.1            | 7.6   | -            | -                     |
| 2011 | 407.5           | 100.0               | 202.5               | 65.6       | 17.3            | 7.9   | -            | -                     |
| 2012 | 446.3           | 100.2               | 401.9               | 70.9       | 22.2            | 8.6   | -            | -                     |
| 2013 | 473.7           | 106.0               | 31.0                | 75.6       | 24.1            | 9.3   | -            | -                     |
| 2014 | 494.0           | 111.2               | (14.0)              | 79.0       | 26.5            | 9.6   | -            | -                     |
| 2015 | 506.7           | 123.4               | 178.9               | 80.6       | 27.8            | 9.8   | -            | -                     |
| 2016 | 487.4           | 121.3               | 38.7                | 78.0       | 26.4            | 9.6   | 80.3         | -                     |
| 2017 | 423.1           | 105.0               | 1,476.9             | 67.7       | 26.4            | 8.3   | 80.3         | -                     |
| 2018 | 397.4           | 106.2               | 175.7               | 63.3       | 30.7            | 7.6   | 80.5         | -                     |
| 2019 | 374.0           | 87.9                | 113.5               | 59.5       | 31.5            | 7.0   | 80.3         | -                     |
| 2020 | 370.6           | 102.1               | 118.7               | 59.1       | 31.6            | 6.9   | 117.2        | -                     |

Debt service for 2020 includes the partial early redemption of outstanding bonds.