



Lessons of the 2008 Cat Season

2009 CAS Seminar on Reinsurance

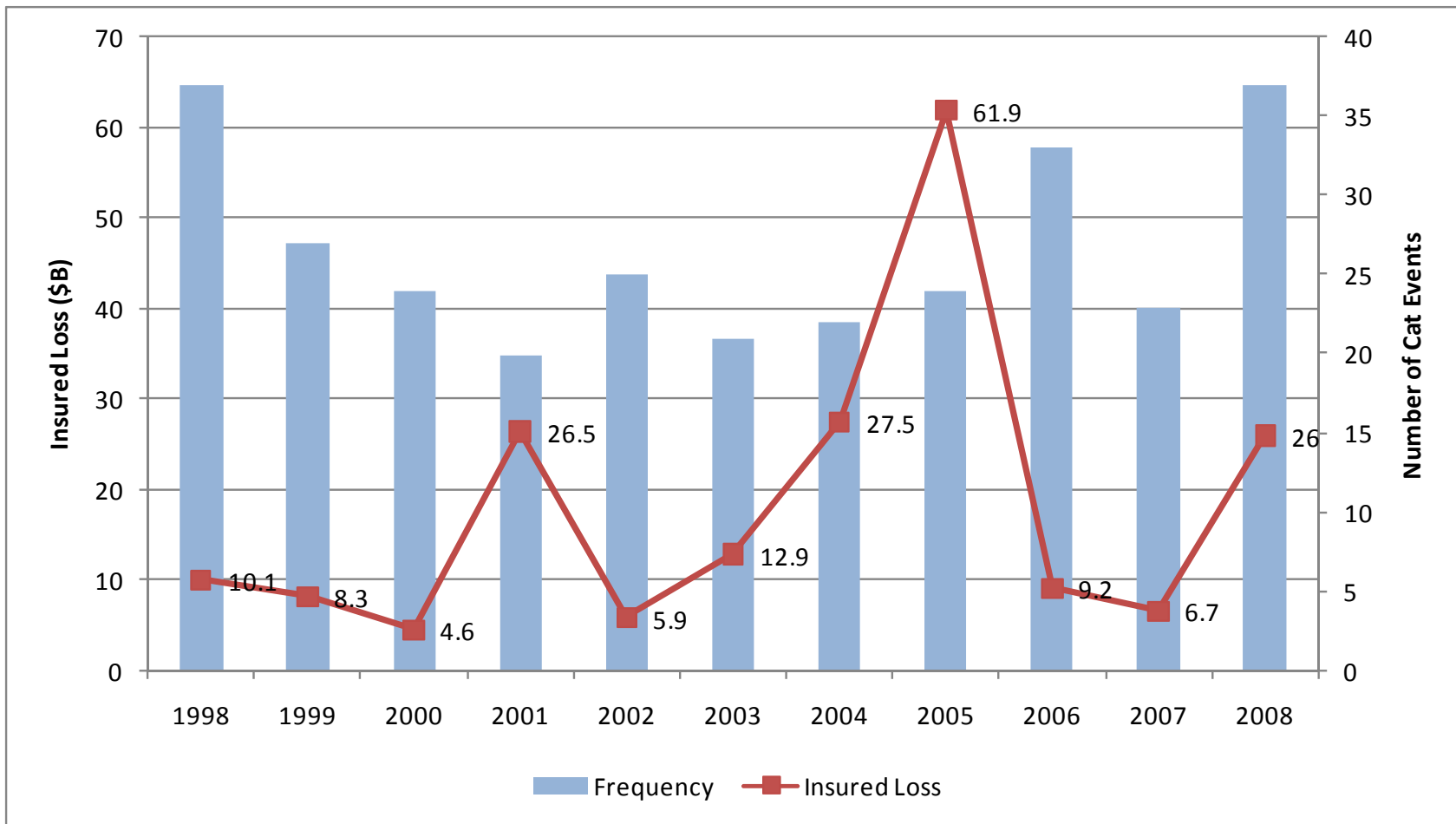
May 18-19, 2009
Jason Harger, FCAS, MAAA

Willis

Agenda

- 2008 Hurricane Season
 - Forecast versus observed
 - Hurricane Ike
- Tornado, Hail, severe thunderstorm Midwest impact
- Residual Markets
 - Texas Wind Insurance Association (TWIA)
 - Other Residual Markets

Historical Cat Loss Activity



*Excludes \$4B-\$6b offshore energy losses from Hurricanes Katrina & Rita.

**Based on PCS data through Dec. 31. PCS \$2.1B loss of for Gustav. \$10.655B for Ike of 12/05/08.

Note: 2001 figure includes \$20.3B for 9/11 losses reported through 12/31/01. Includes only business and personal property claims, business interruption and auto claims. Non-prop/BI losses = \$12.2B.

Source: Property Claims Service/ISO; Insurance Information Institute

2008 Hurricane Season Forecasts

Category	May 31 WPC Forecast	June 30 WPC Forecast	July 29 WPC Forecast	Colorado State Forecast	Average (1950-2007)
Any Named Storm	12 (8-16)	12 (8.5-15.5)	13 (9.5-16.5)	17	10.3
Any Hurricane	8 (5-11)	8 (5.5-10.5)	8 (5.5-10.5)	9	6.2
Cat 3-5 Hurricanes	4 (2-6)	4 (2.0-6.0)	4 (2.0-6.0)	5	2.6

- All forecasts above long term average
- Similar forecasts for 2006 and 2007 seasons

2008 Observed Hurricane Frequency

	Tropical Storms	Total Hurricanes	Cat 3-5 Hurricanes
2008	16	8	5
2007	15	6	2
1995-2007 season average	14.5	8.0	3.8
1950-2007 season average	10.3	6.2	2.6
May 31 WPC forecast	8 - 16	5 - 11	2 - 6

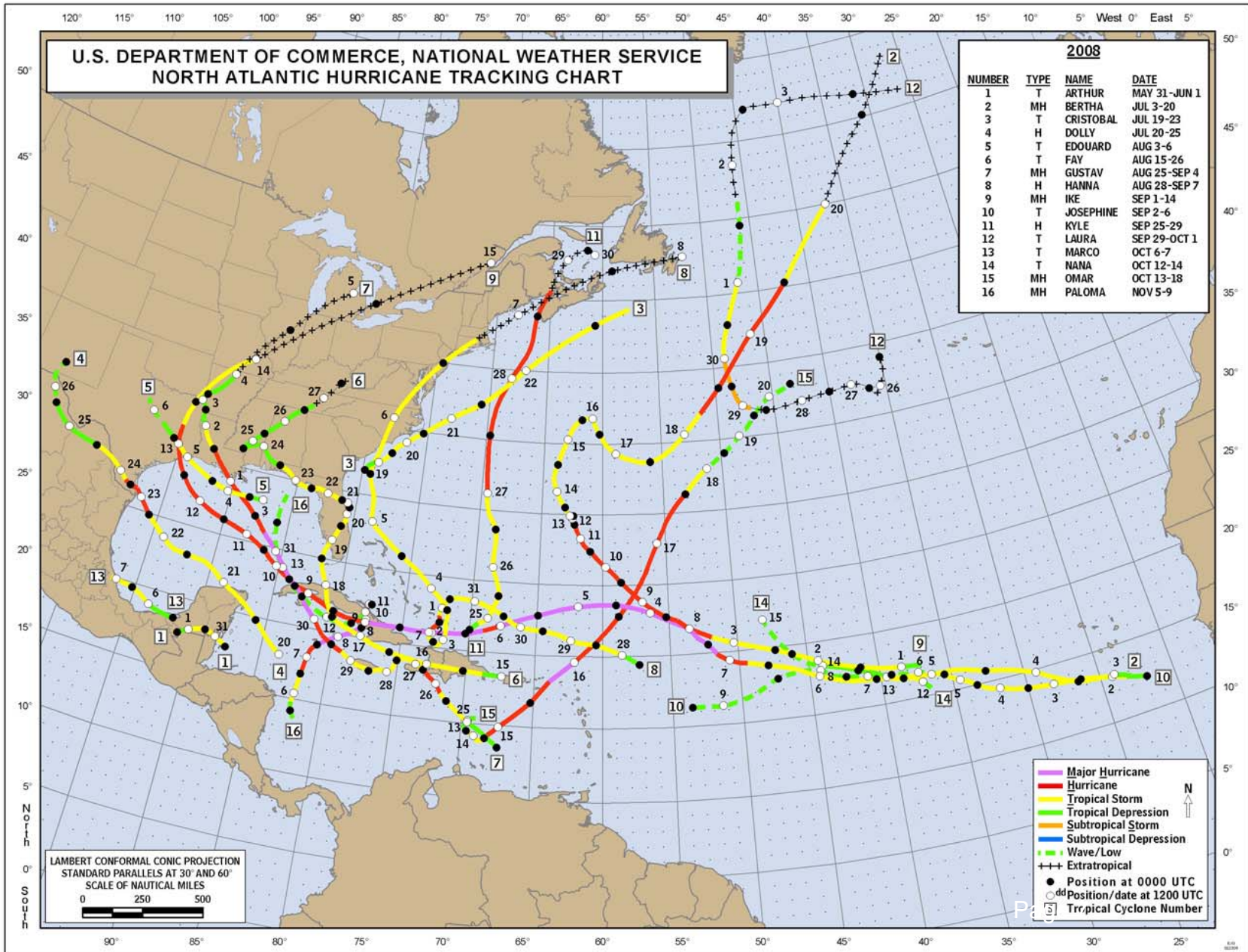
- Above forecasted average
- Similar frequency to 2007
- Different reinsurance impact

Historical Hurricane Frequency

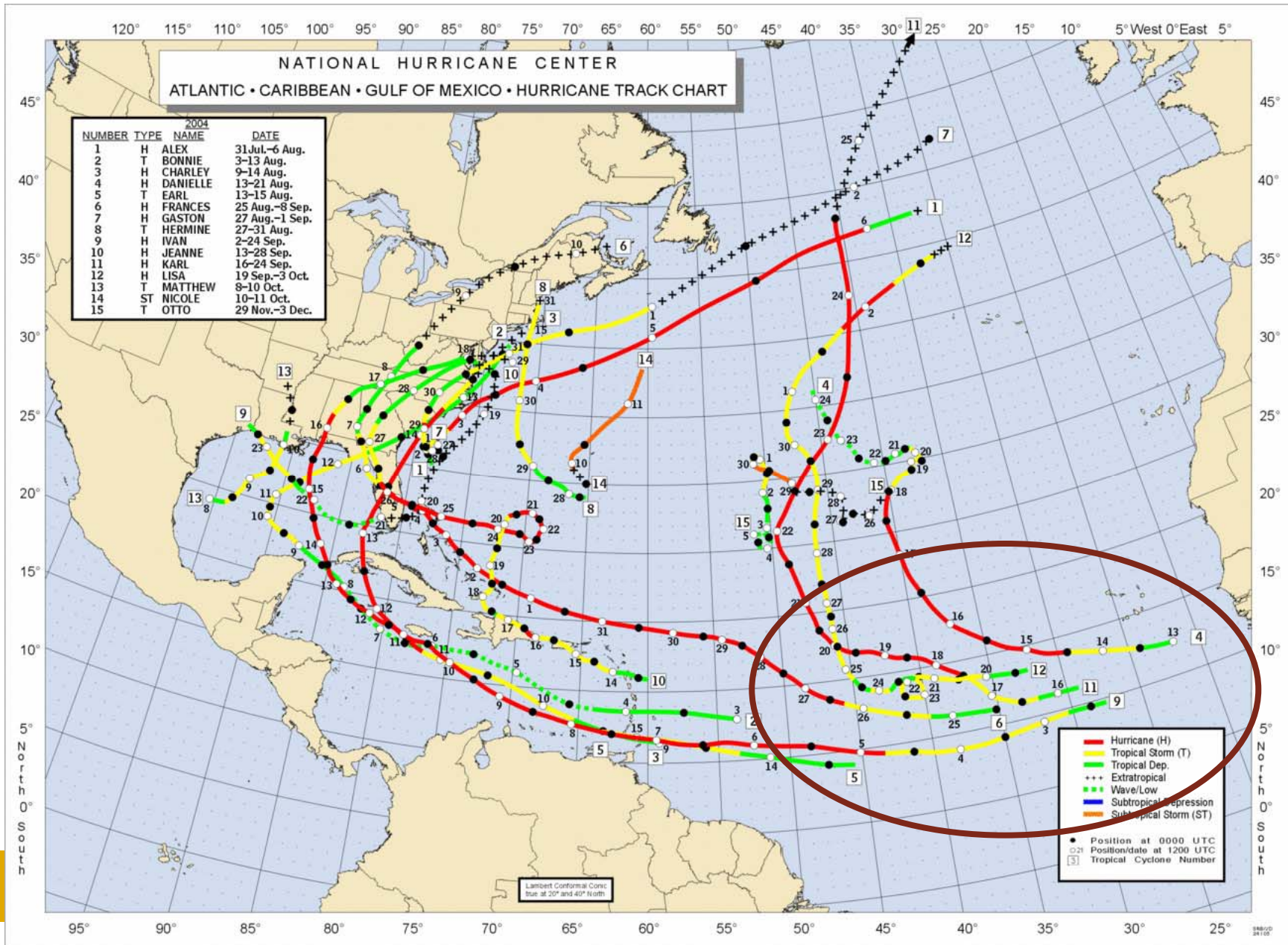
Year / Category	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998
Tropical Storms	16	15	10	28	15	16	14	15	15	12	14
Hurricanes	8	6	5	15	9	7	4	9	8	8	10
Cat 3-5 Hurricanes	5	2	2	7	6	3	2	4	3	5	3

- Resembles 2004 frequency
- Different landfall impact

2008 Hurricanes



2004 Hurricanes



The Models Work? Preliminary Ike Estimates

Company	Low Estimate (\$B)	High Estimate (\$B)
AIR	8	12
EQECAT	6	16
RMS	8	18

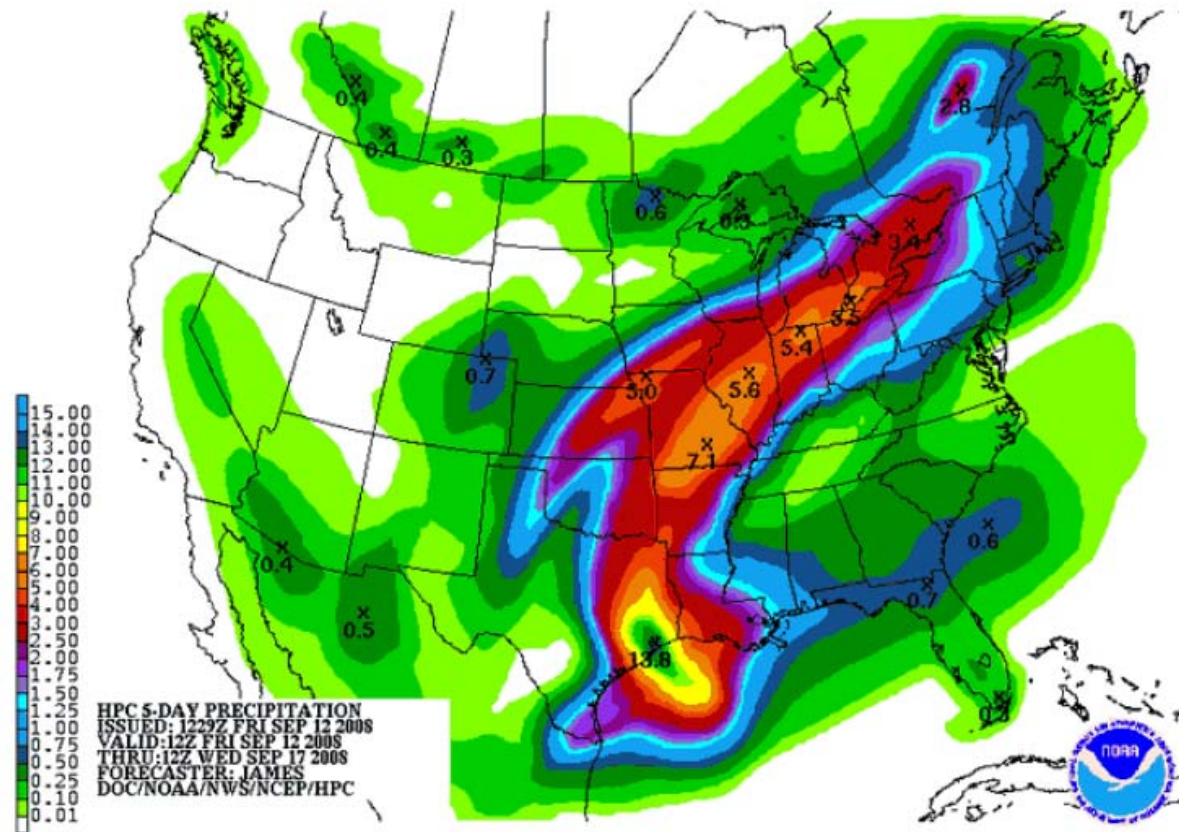
- Based upon estimates within 1 week of landfall
- Current industry estimates 11B – 13B

Individual Company Estimates

- Vendor estimates encompass wide range
- Variation increases for individual companies
- Addition of non-modeled loss
- Actual loss vs. modeled loss
 - Company views consistent with previous experience
 - No significant surprises for gulf coast losses

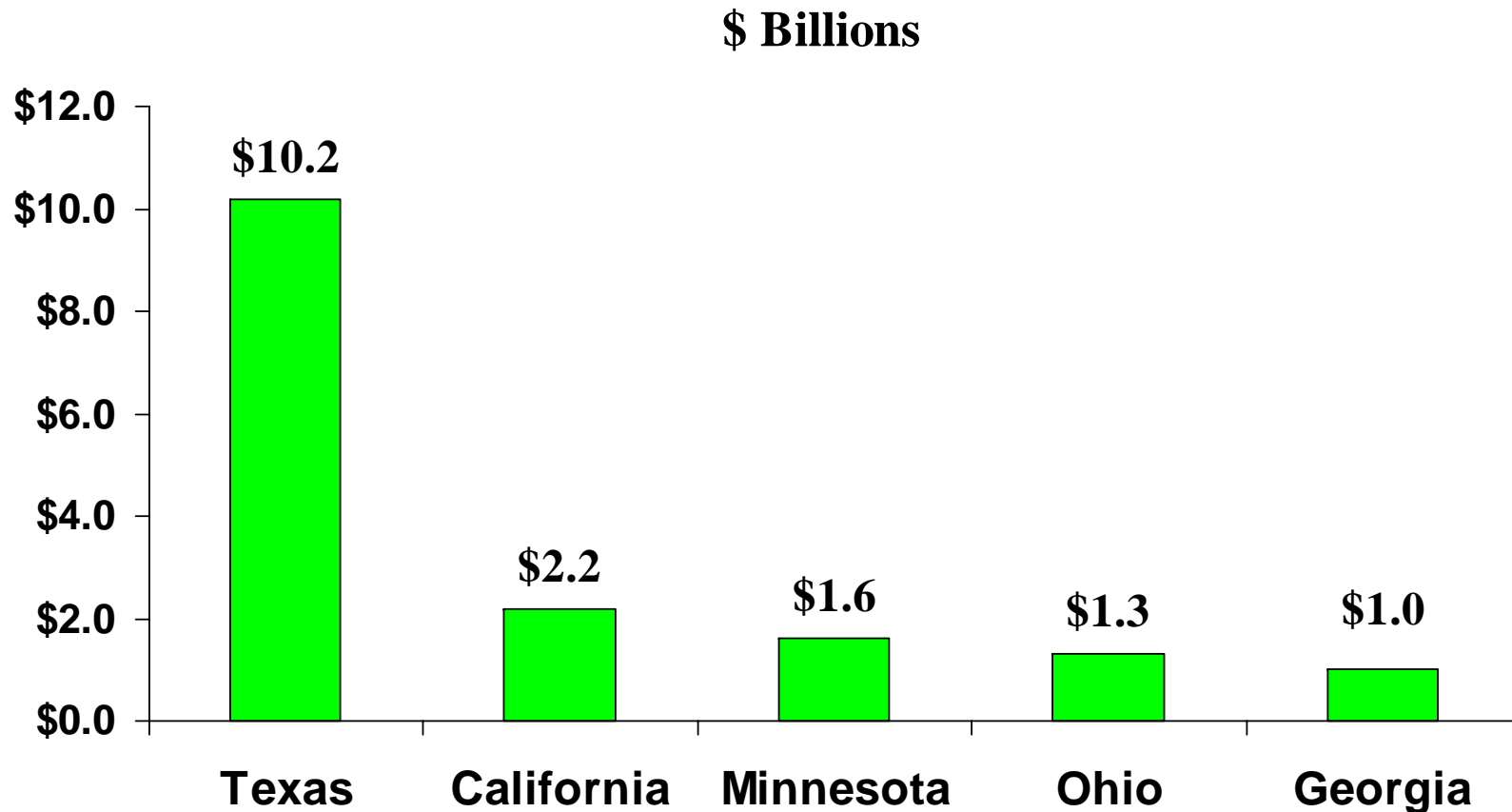
Ike's Lesson - Inland losses

- Were the models wrong?
- Was the damage beyond the scope of the models?
- Midwest losses combine with elevated tornado, hail, severe storm frequency



Precipitation forecast issued by NOAA/HPC on Friday, September 12

Catastrophe Losses by State



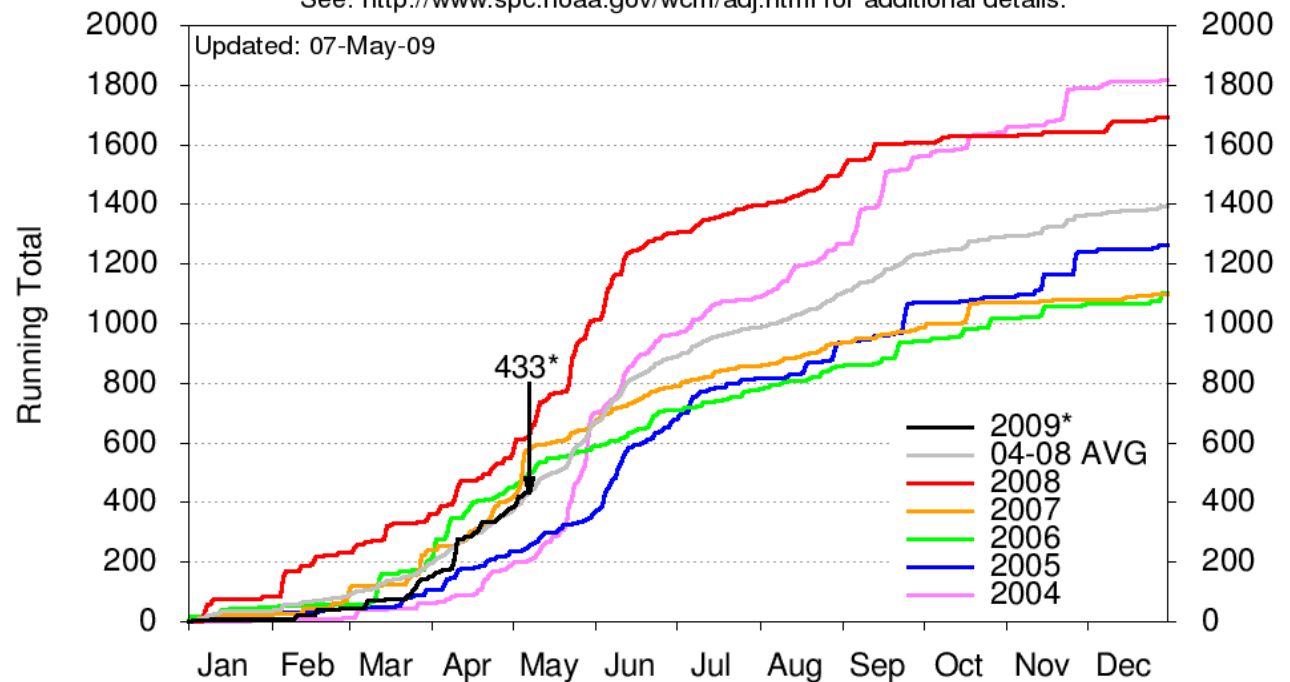
2008 Tornado Frequency

- Regional reinsurance covers feel significant impact
- Are the models accurate?
- What return period should be associated with 2008?



U.S. Annual Tornadoes 2004-2009

* 2009 tornado running total estimated by multiplying preliminary count from Local Storm Reports (LSRs) by 0.85 to remove overcount. See: <http://www.spc.noaa.gov/wcm/adj.html> for additional details.



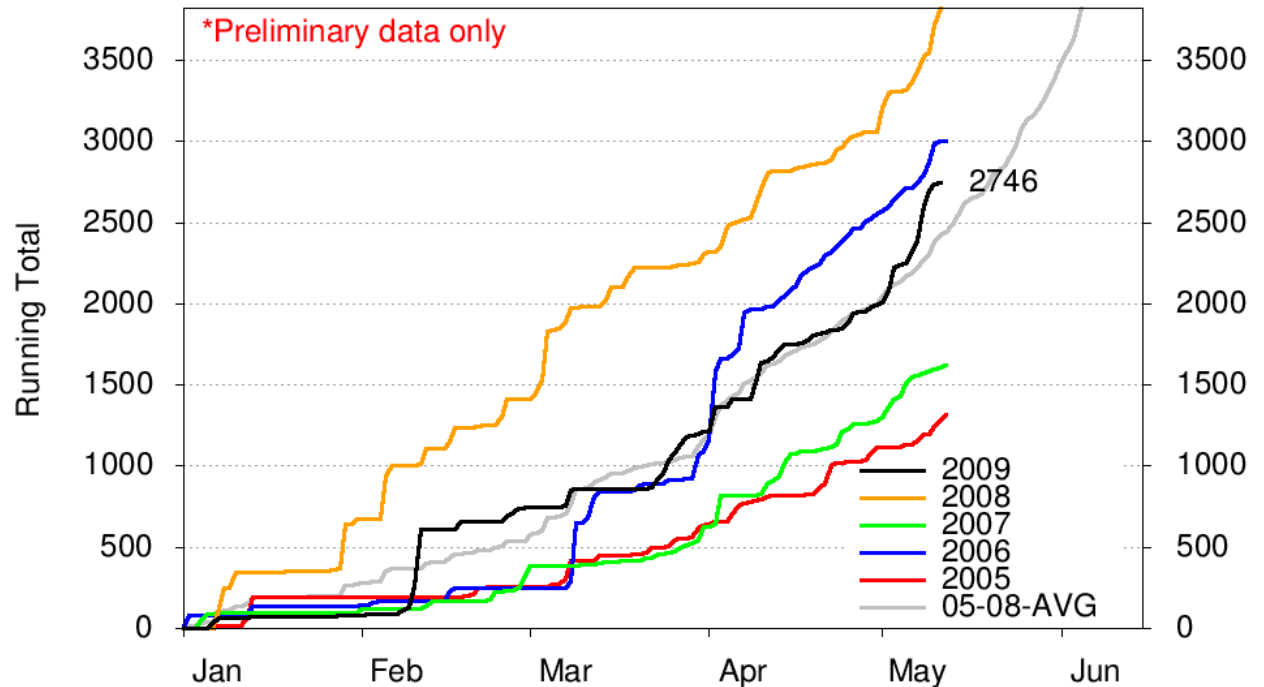
2008 Severe Storm Frequency

- Most insured loss within first layer
- Recoveries for aggregate layers
- Significant net loss retentions



Severe Storm Report Trends*

U.S. Tstm Wind Reports (from LSRs for all years) through May-10



2008 RESIDUAL MARKET LESSONS

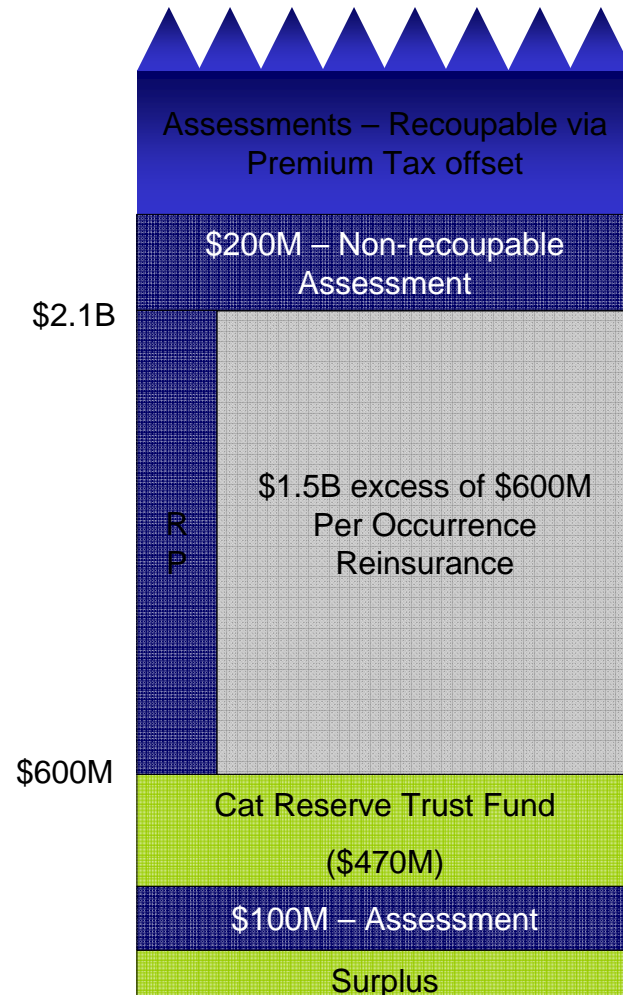
TWIA Overview

2008 Financing Structure

- Surplus (pre-2008 wind season)
 - \$470M in Catastrophe Reserve Trust at beginning of wind season
 - \$80M of cash on hand
- Reinsurance
 - \$1.5B excess of \$600M
 - Reinstatement premium exposure
- Return periods (11/2007, RMS/AIR average)
 - 100 year – \$3.6B
 - 250 year – \$5.6B

Assessment Exposure

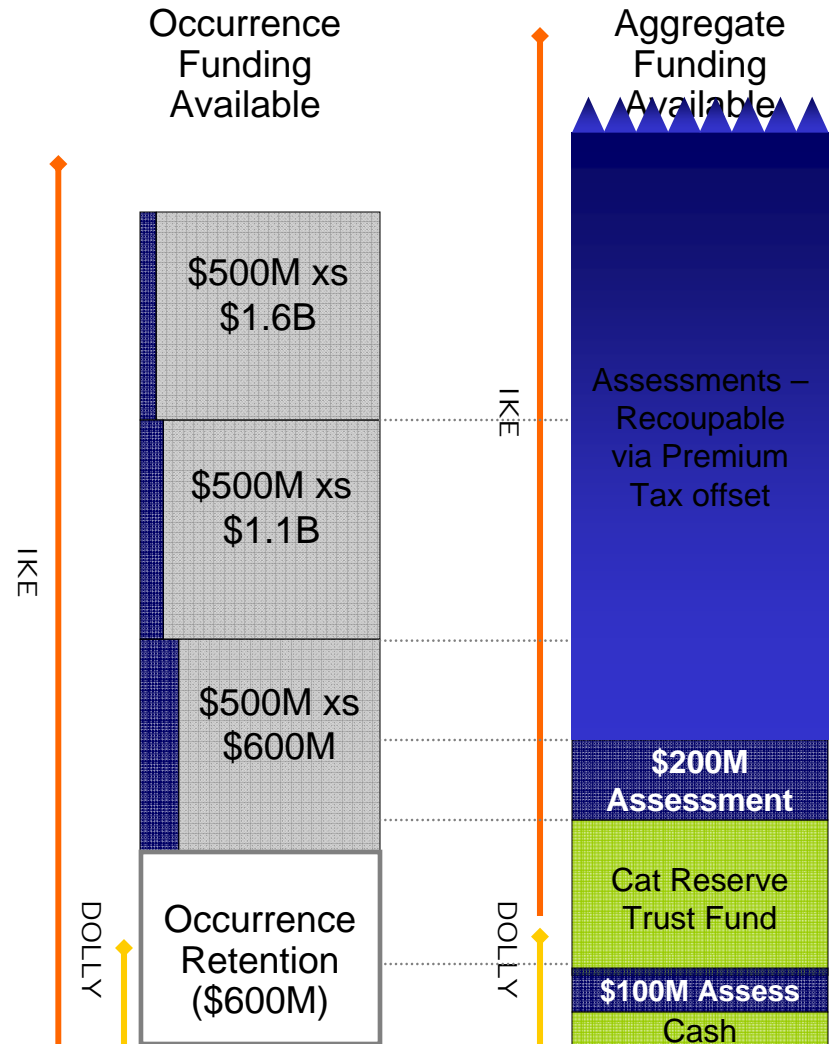
- After \$300M in straight assessments, assessments can be offset with premium tax credits
- Current P&C premium tax rate = 1.6%



TWIA Summary

What Happened – 2008 Wind Season

- **Expected incurred of \$280M from Dolly**
 - \$80M in cash reserves
 - \$100M Industry assessment (non-recoupable)
 - \$100M authorized withdrawal from Cat Reserve Trust Fund
- **Expected incurred of <\$5M from Edouard**
 - Only 108 claims as of 8/8/08
- **Expected incurred of \$2.1B to \$2.7B from Ike**
 - \$370m in Cat Trust Fund utilized
 - \$430M in assessments already authorized
 - All \$300m of non-recoupable assessments now exhausted
 - Additional assessments may be levied in 2009 as required
 - Reinsurance
 - \$1.5B xs \$600M *occurrence* protection
 - Reinstatement premiums offsets recovery

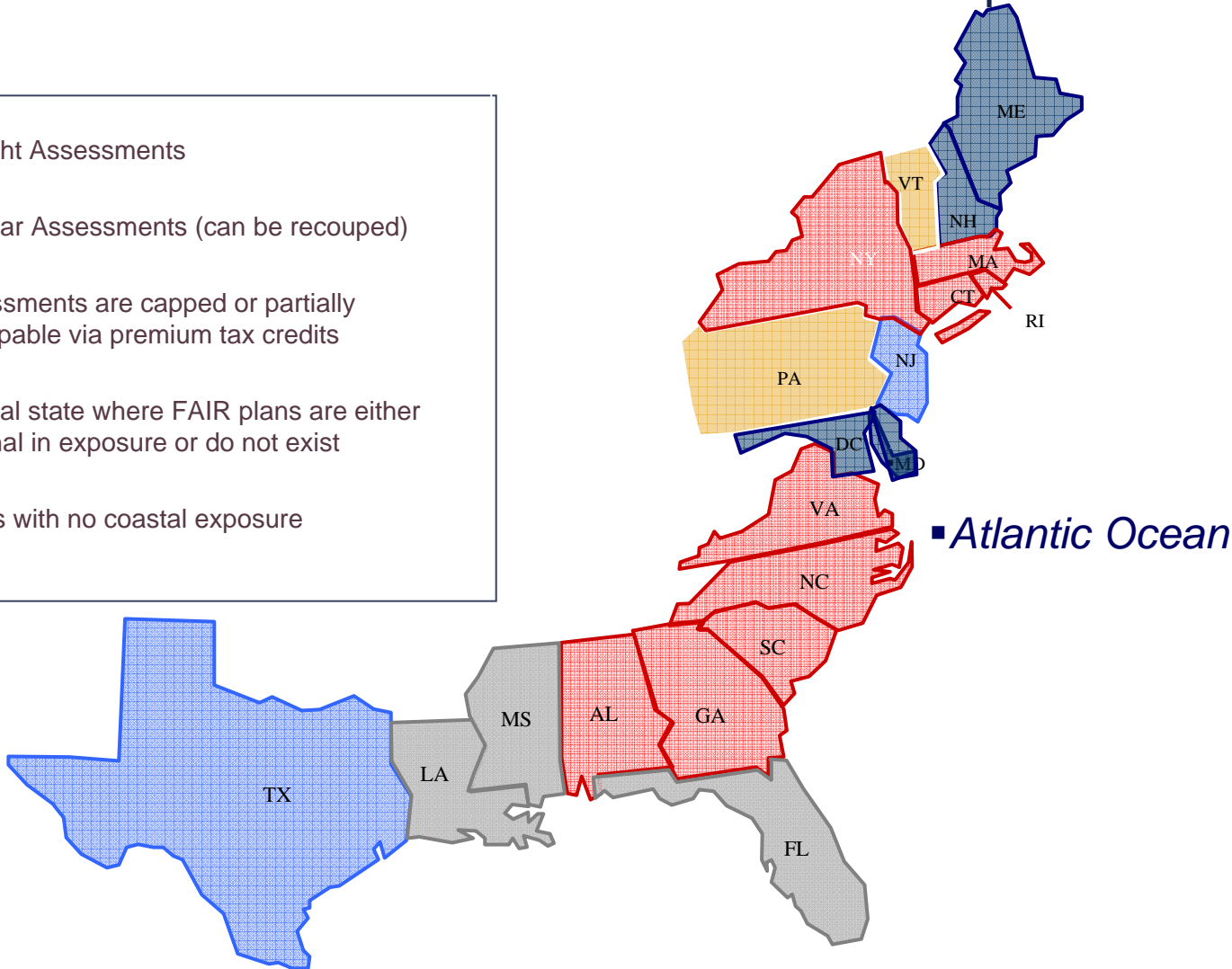
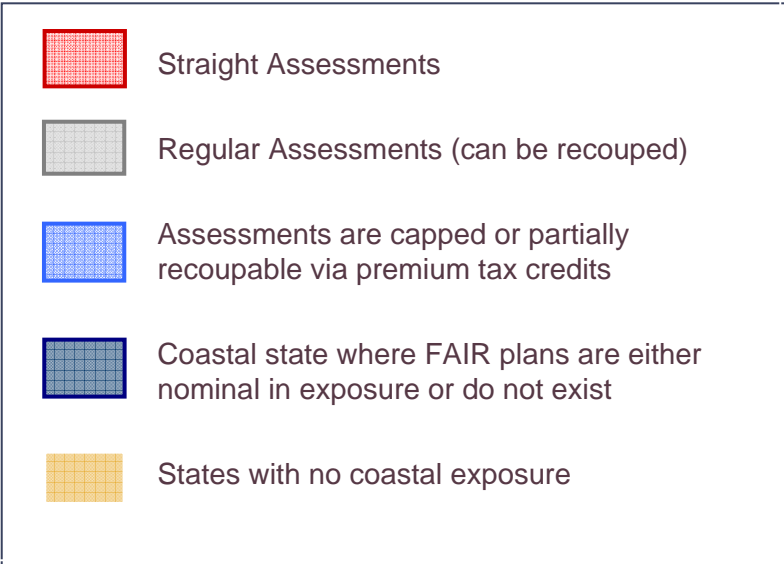


U.S. Residual Market Exposure (USD \$B)

■ Exposure to Loss

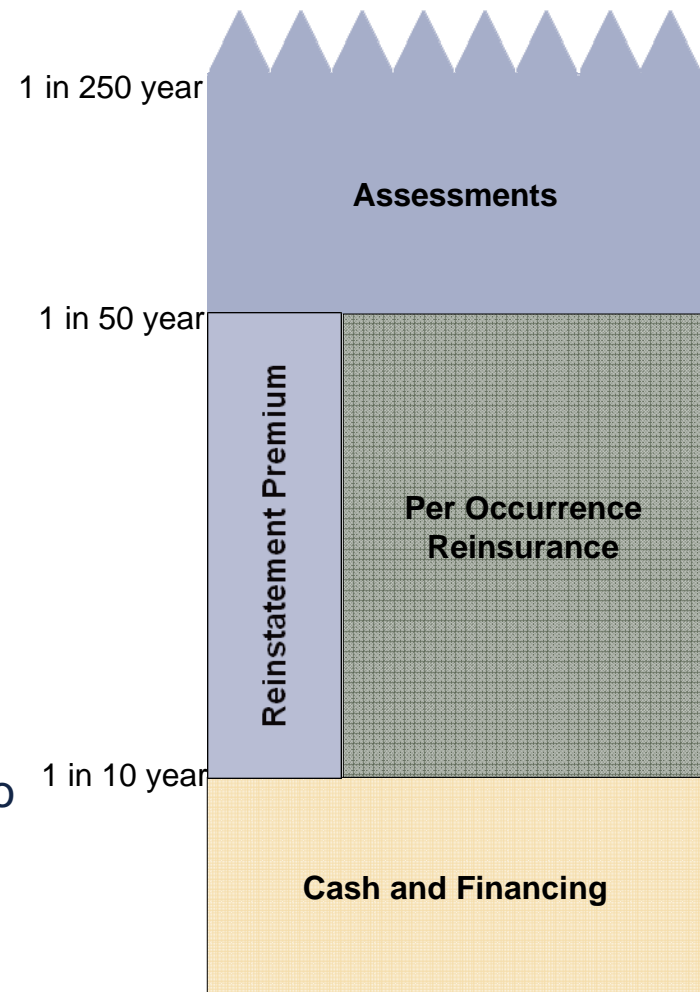


Residual Markets Overview – Wind Exposed Plans



Residual Market Use of Reinsurance

- Purchase “in the money” reinsurance layers
 - High Rate on Line
 - Limits cash build-up of plans
- Member companies assessed for tail losses
 - Occurrence
 - Aggregate
- Impact on member company reinsurance
 - Increased need for additional limit
 - Correlated exposure to voluntary portfolio
 - Uncertainty adds to reinsurance cost



Residual Markets After Loss

- Single loss inhibits plan viability
- Remove “unlimited” assessment
 - FL, LA, MS all have post-event bonding with a pass-through to policyholders
 - Is TWIA next?
- Other plans with straight assessments
 - Ability to maintain structure after paying a loss
 - Other options?

Questions?

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