

Prepared for:
Florida Hurricane Catastrophe Fund



2018 Ratemaking Formula Report

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March 21, 2018

2018 Ratemaking Formula Report Agenda

- 1. What's New?**
- 2. Overall Indications**
- 3. Ratemaking Overview**
- 4. Premium, Rates and Coverage**
- 5. Other Topics of Interest**
- 6. Recap**
- 7. Questions**



1. What's New?

2018 Ratemaking Formula Report

What's New?

- **Projected Average Coverage Selection Decrease**
 - 74.524% in 2017, 73.121% in 2018
- **Exposure Trend Increase**
 - 2.76% in 2017, 2.83% in 2018
- **Pre-Event Note Expense Decrease**
 - \$44.6 Million in 2017, \$27.7 Million in 2018
- **Reinsurance Costs**
 - Set at 2017 levels, options included in formula table
- **Hurricane Catastrophe Models Updated to 2015 Standards**
 - 4 of 5 models indicate lower FHCF loss cost rates



2. Overall Indications

2018 Ratemaking Formula Report

Overall Indications

FHCF Reimbursement Coverage, Rate, Exposure and Premium

	Avg. Rate (per \$1,000)	Exposure (\$ Billions)	Premium (\$ Billions)
2017 Actual	0.5184	2,176.9	\$1.128
2018 Projected	0.4968	2,238.4	\$1.112
% Change	-4.16%	2.83%	-1.45%

2018 Ratemaking Formula Report

Overall Indications

FHCF Reimbursement Coverage, Rate, Exposure and Premium

	Avg. Rate 90% (per \$1,000)	Coverage %	Avg. Rate (per \$1,000)	Exposure (\$ Billions)	Premium (\$ Billions)
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% Change	-2.32%	-1.88%	-4.16%	2.83%	-1.45%

2018 Ratemaking Formula Report

Overall Indications

Coverage, Rate, Exposure and Premium Changes by Type of Business

Type of Business	Rate	Exposure	Premium
Residential	-4.70%	3.00%	-1.84%
Tenants	-9.79%	7.00%	-3.47%
Condos	-0.14%	3.50%	3.35%
Mobile Home	-0.19%	0.00%	-0.19%
Commercial	-1.66%	0.00%	-1.66%
Total	-4.16%	2.83%	-1.45%

2018 Ratemaking Formula Report

Overall Indications

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Type of Business	90% Rate	Coverage %	Rate	Exposure	Premium
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Total	-2.32%	-1.88%	-4.16%	2.83%	-1.45%

2018 Ratemaking Formula Report

Overall Indications

Rate On Line Changes

LIMIT (FHCF)		2017	FHCF Layer	
			2018	Change
\$17,000,000,000	Modeled	6.90%	6.54%	-5.19%
\$17,000,000,000	Actual 2017	6.64%	6.54%	-1.45%

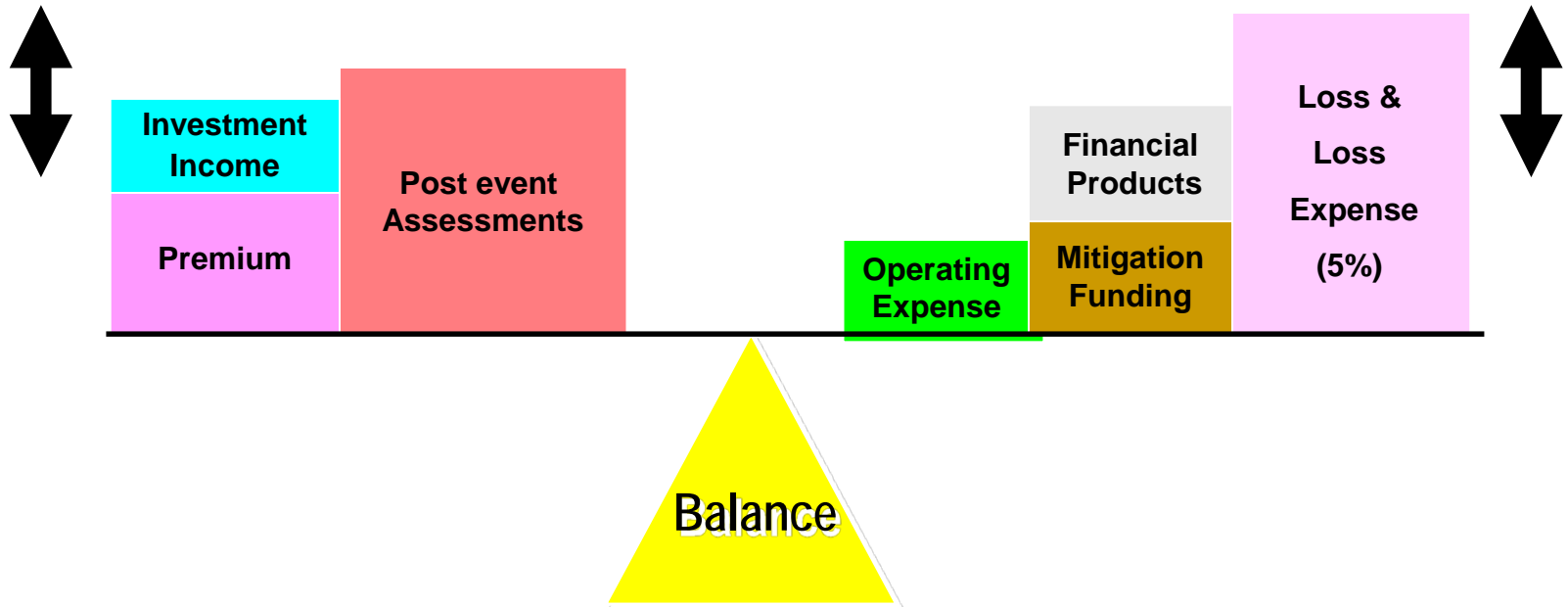


3. Ratemaking Overview

2018 Ratemaking Formula Report

Ratemaking Overview

Where Does the FHCF Get Its Funds? Where Do They Go?



Premiums are derived from the Ratemaking Formula

2018 Ratemaking Formula Report

Ratemaking Overview

1. Trend 6/30 Prior Year Exposure Data & Send Modelers
2. **Combine Results for Industry Excess Loss Costs**
3. Add Allocated Loss Adjustment Expenses (5%)
4. Misc. Technical Adjustments
 - Retention & limit
 - Law & ordinance
 - Aggregate wind deductible adjustment

2018 Ratemaking Formula Report

Ratemaking Overview

5. Fixed Loadings

- Operating expenses
- **Pre-event notes expenses**

6. Allocation to Classes

- Type of business, territory, construction, deductible
- Re-adjust coverage % for territory changes

2017 Ratemaking Formula Report

Ratemaking Overview

7. Rating Classifications for Mitigation

- **Year built**
- **Structure opening protection**
- **Roof shape**

8. Apply Cash Build-up Factor

9. Variable Loadings

- **Reinsurance**

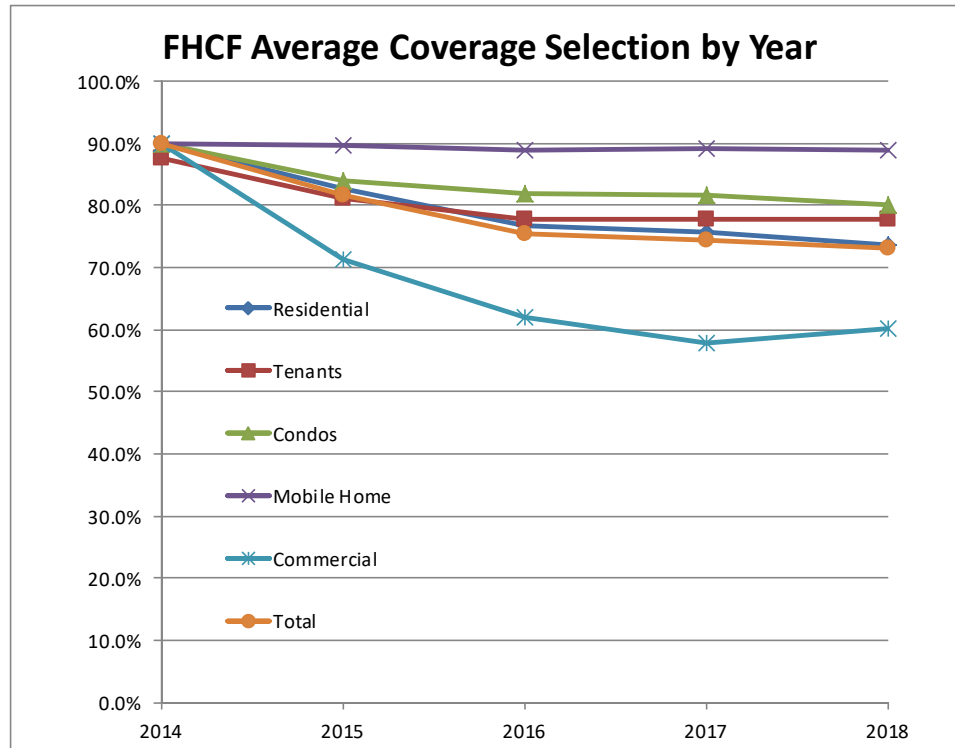


4. Premium, Rates and Coverage

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Coverage Selection Change by Type of Business

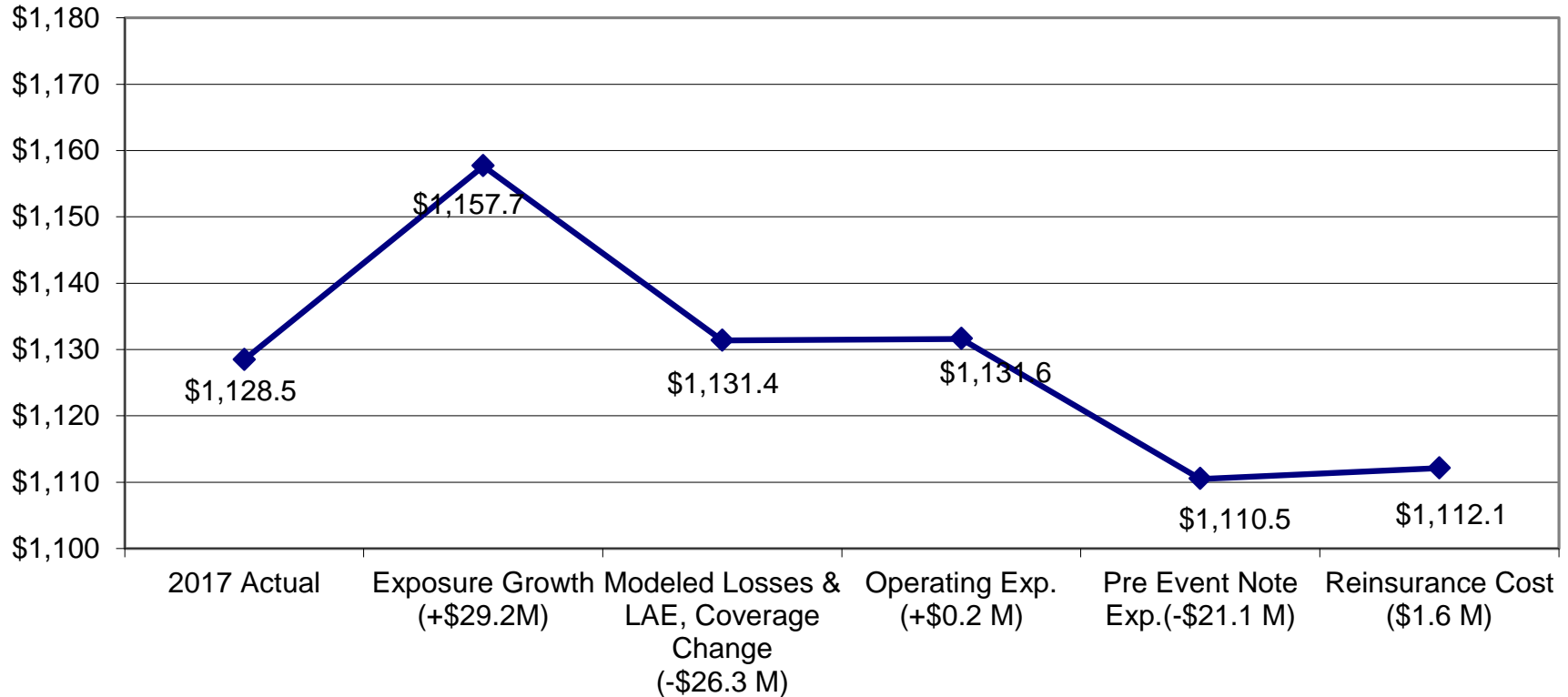
		Residential	Tenants	Condos	Mobile Home	Commercial	Total
Actual	2014	90.0%	87.5%	90.0%	90.0%	89.8%	89.9%
Actual	2015	82.7%	81.1%	84.0%	89.7%	71.4%	81.6%
Actual	2016	76.7%	77.7%	81.8%	88.9%	61.9%	75.5%
Actual	2017	75.6%	77.8%	81.6%	89.1%	57.8%	74.5%
Projected	2018	73.7%	77.9%	80.1%	88.8%	60.1%	73.1%
Projected 2018/Actual 2017		-2.57%	0.09%	-1.83%	-0.38%	3.93%	-1.88%



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Premium, Rates and Coverage

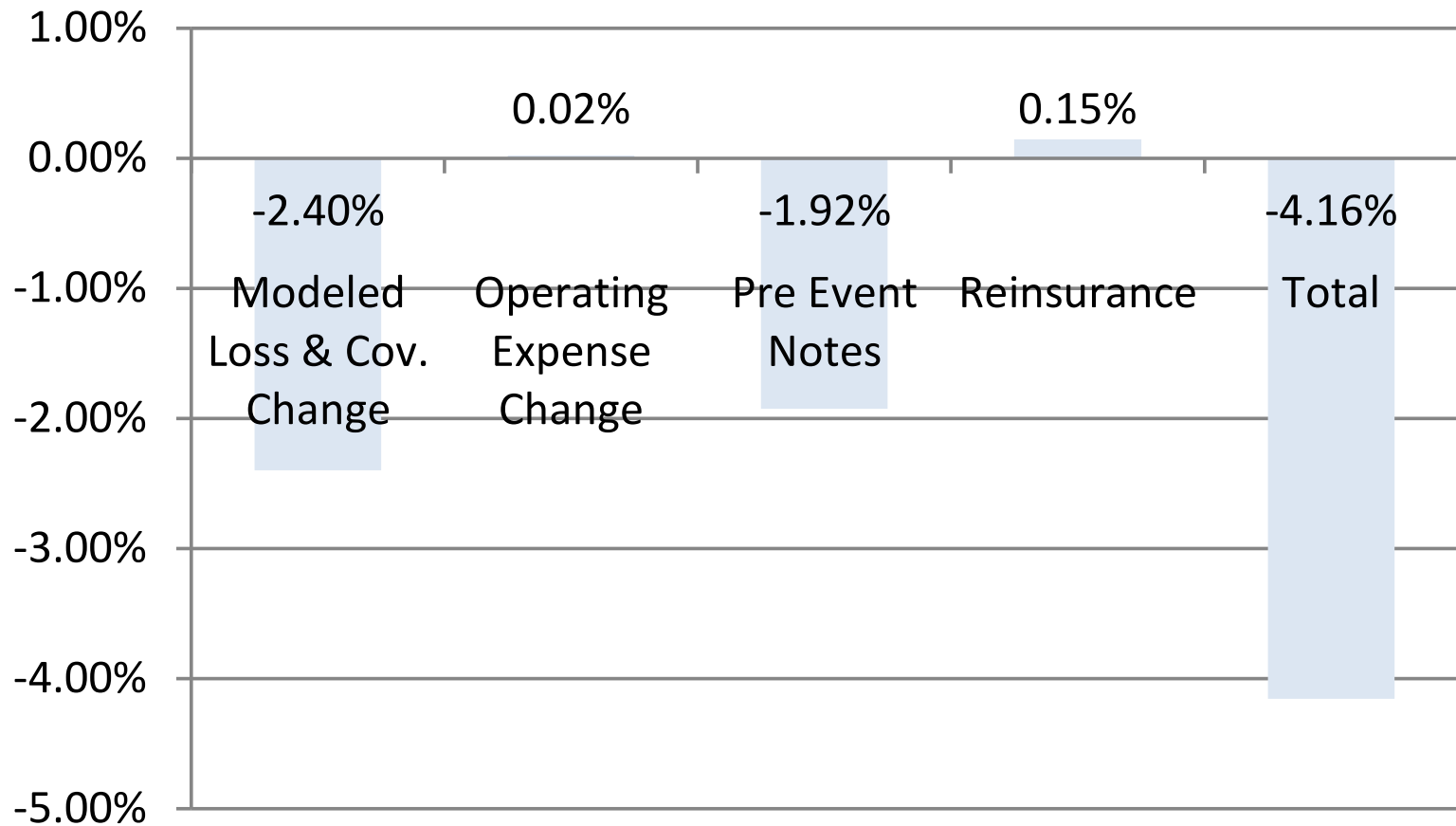
Components of 2018 Premium Change -1.45%



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Premium, Rates and Coverage

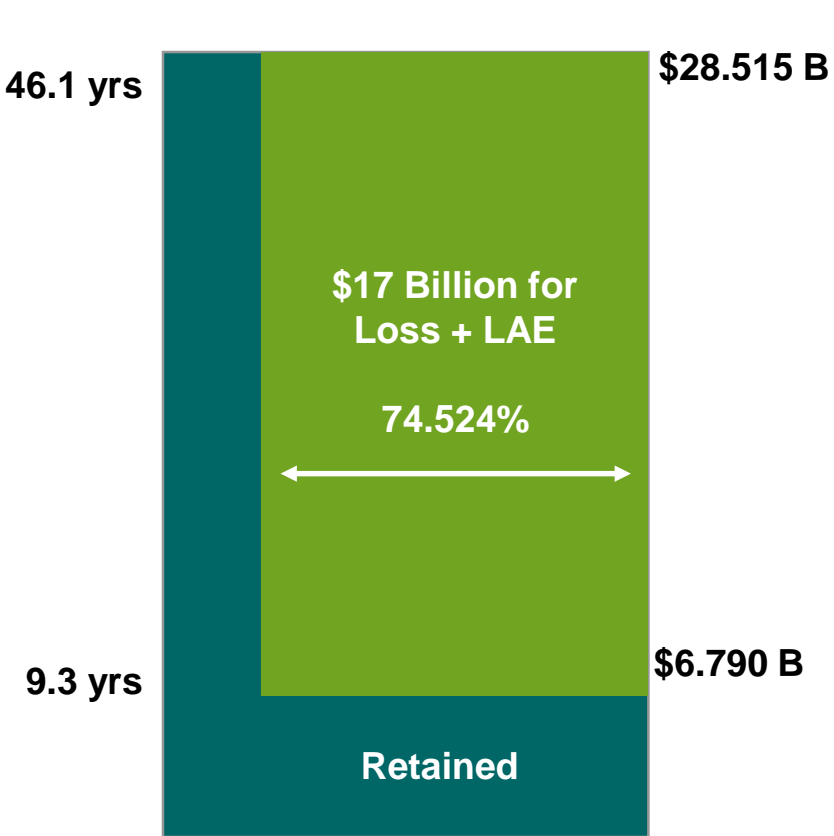
Rate Change Component Impact



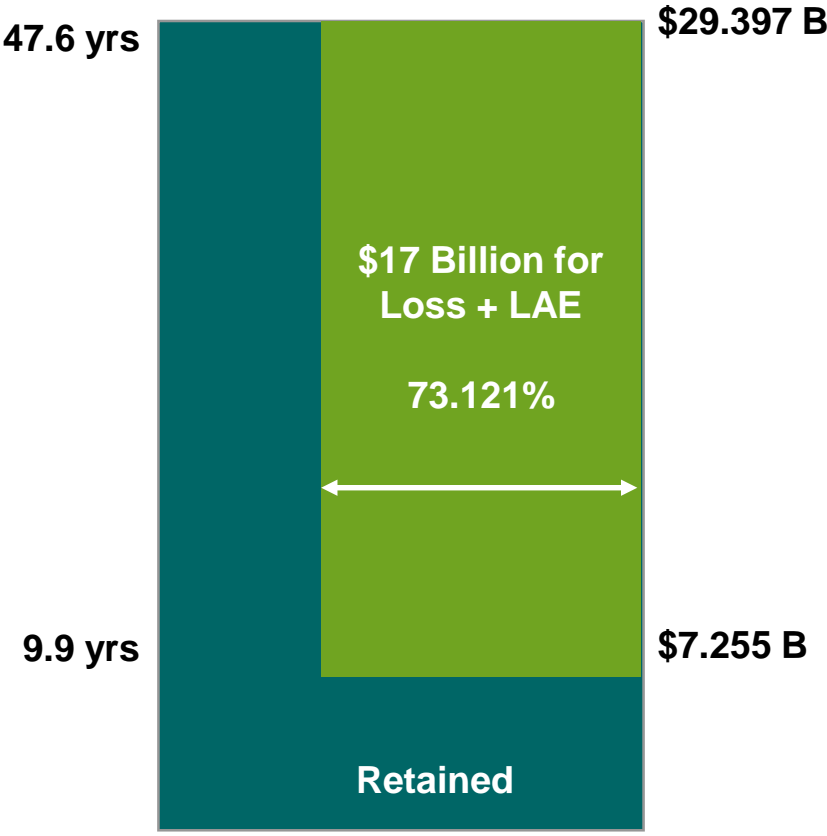
2018 Ratemaking Formula Report

The Covered Layer

2017 Actual



2018 Projected



2018 Ratemaking Formula Report

Coverage

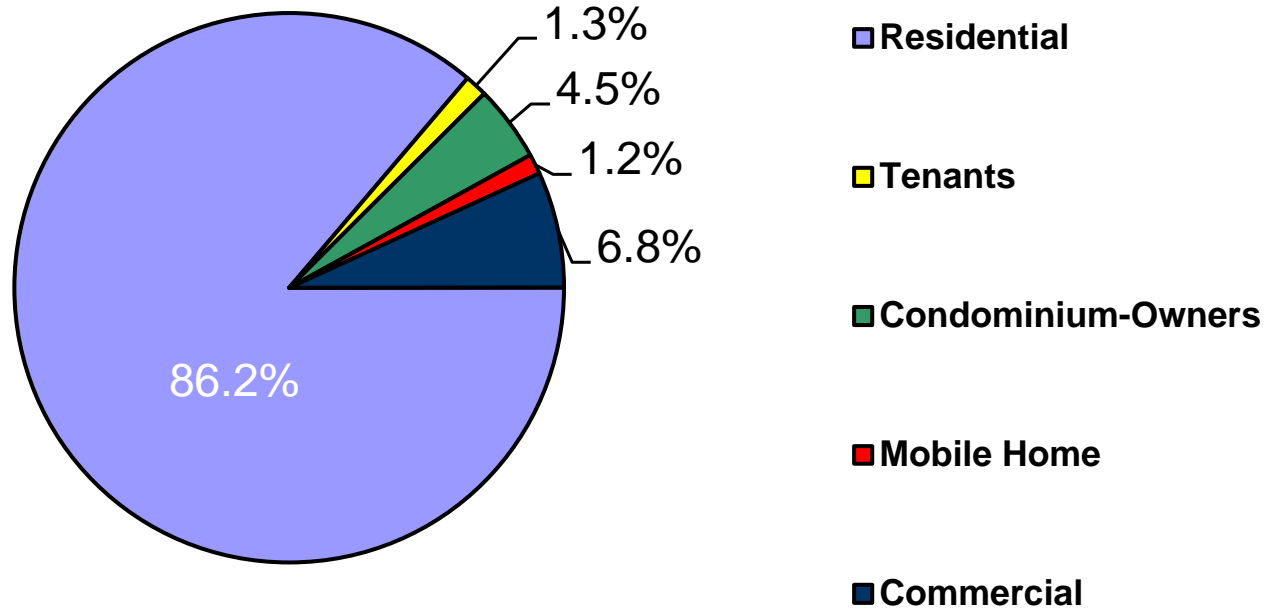
	2017 Actual	2018 Proposed
FHCF Retention	\$6.790 B	\$7.255 B
FHCF Limit	\$ 17.000 B	\$ 17.000 B
FHCF Premium	\$1.128 B	\$1.112 B
Coverage	74.524%	73.121%
Payout Multiple	15.0653 *	15.2862
Retention Multiples for FHCF Coverage Selections		
90%	4.9821	5.3001
75%	5.9785	6.3602
45%	9.9642	10.6003

*Payout multiple based on 12/31/2017 premium of \$1.128 B

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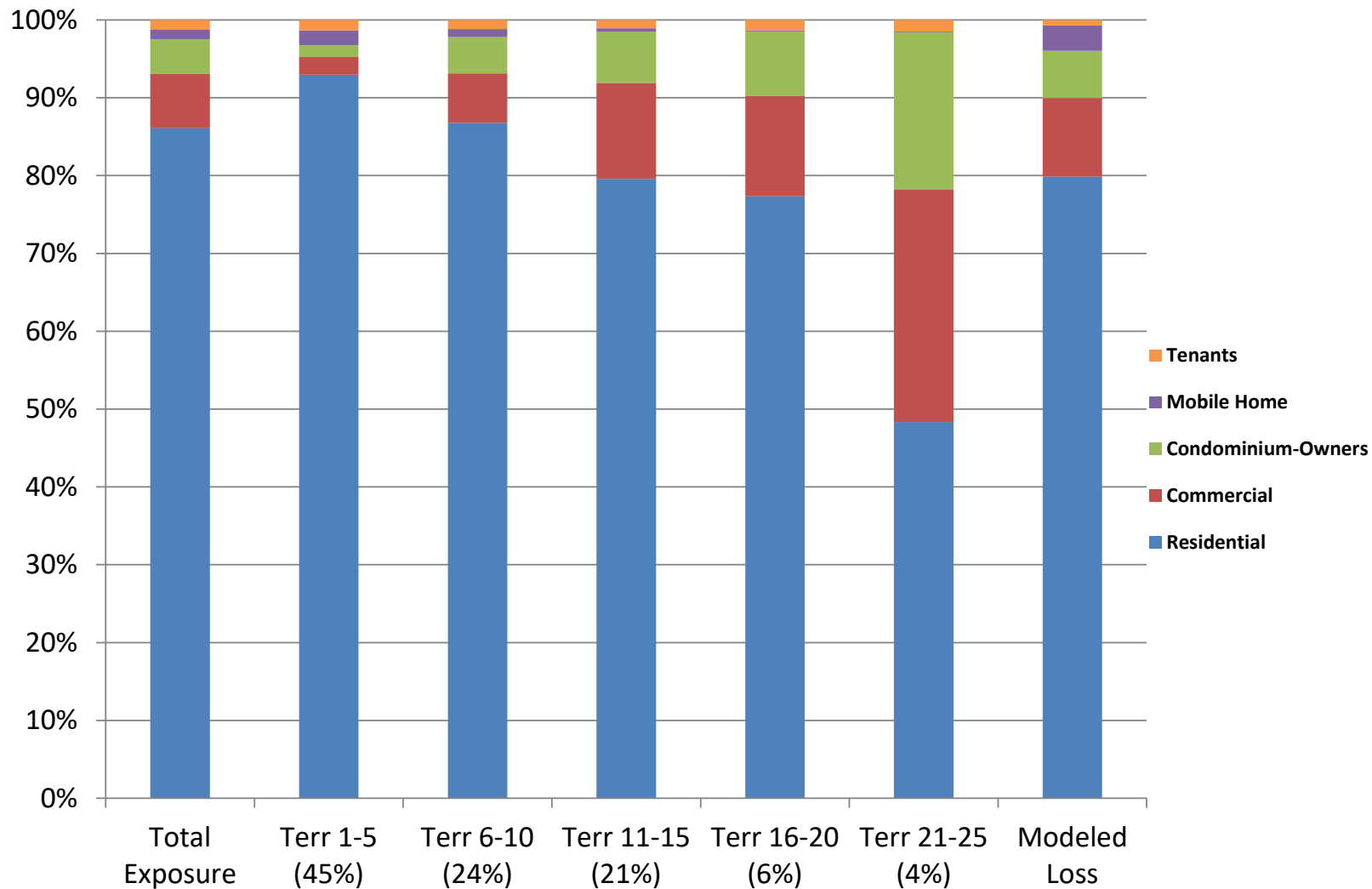
Exposure by Type of Business

2018 Exposure Distribution



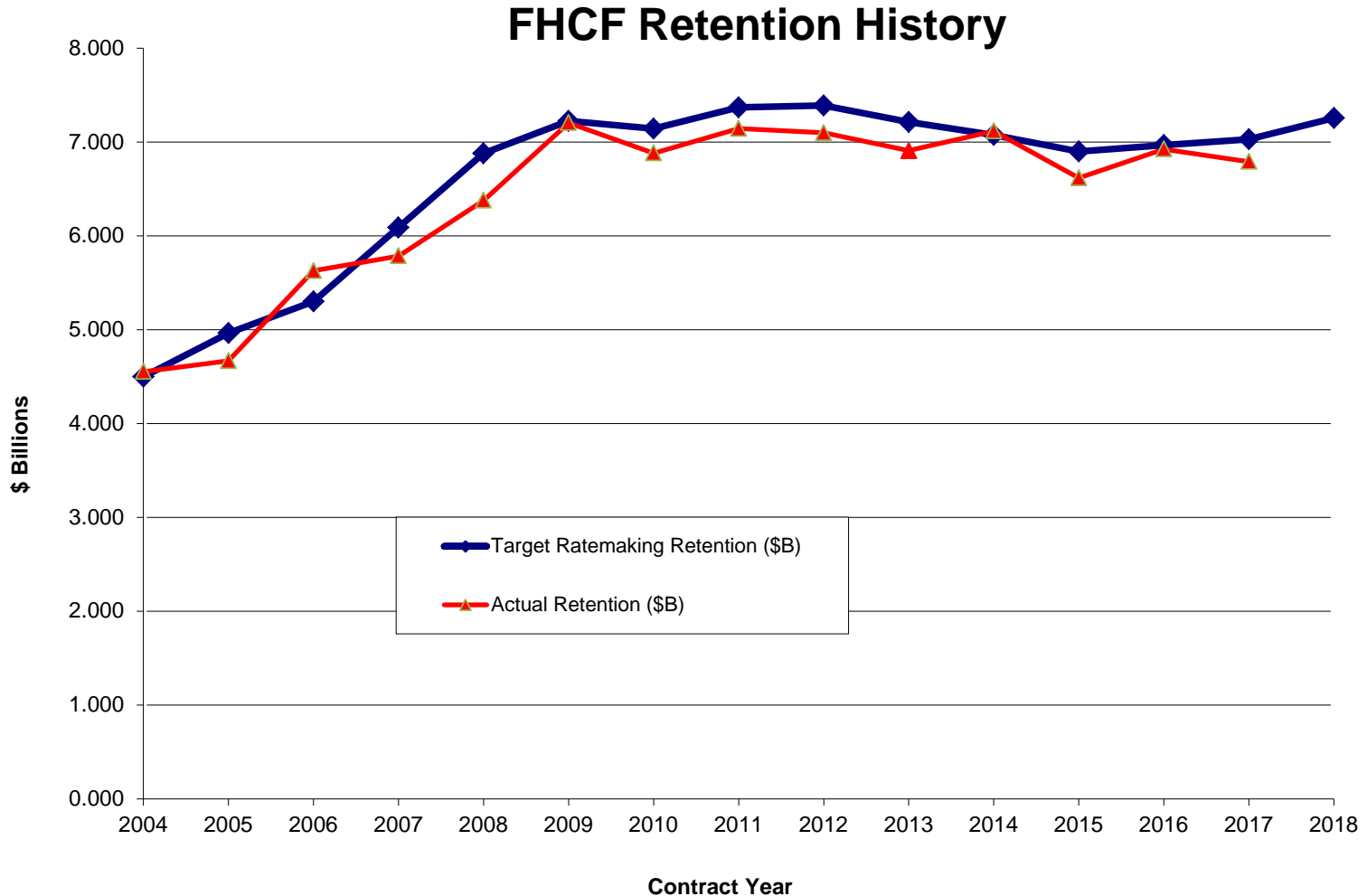
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Exposure and Loss by Type of Business



2018 Ratemaking Formula Report

Retention History

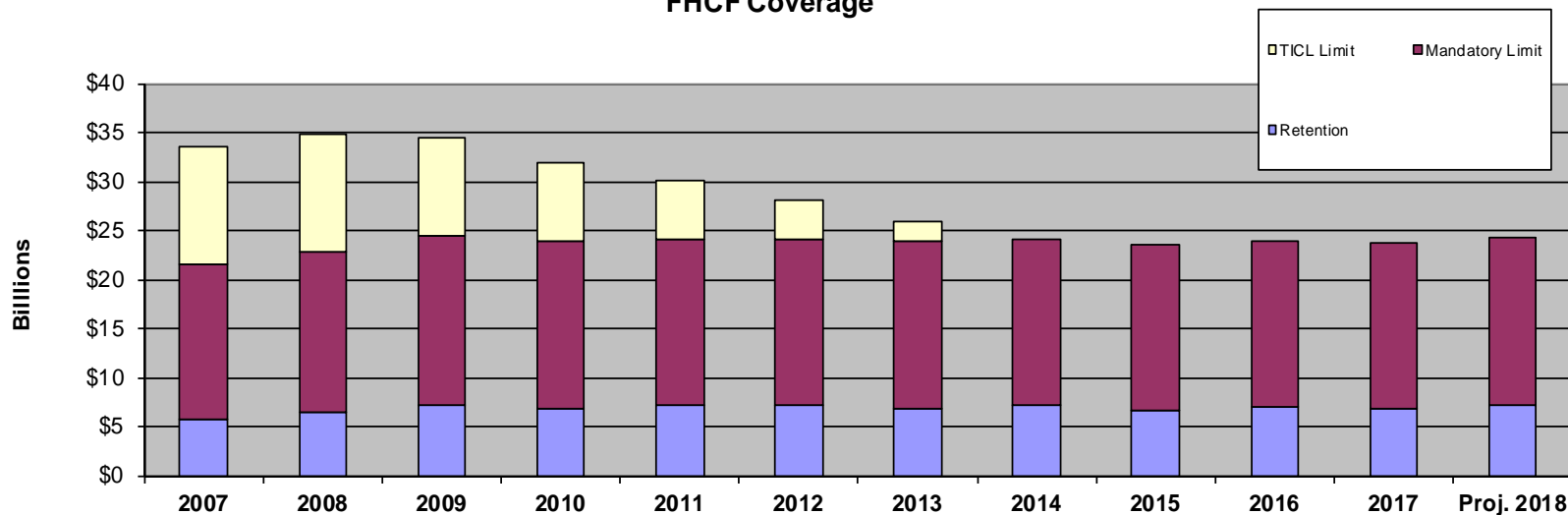


2018 Ratemaking Formula Report

Limit History

(\$B)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Proj. 2018
Retention	5.785	6.377	7.204	6.881	7.143	7.097	6.908	7.115	6.616	6.966	6.790	7.255
Mandatory	15.845	16.530	17.175	17.000	17.000	17.000	17.000	17.000	17.000	17.000	17.000	17.000
TICL Limit	12.000	12.000	10.000	8.000	6.000	4.000	2.000	0.000	0.000	0.000	0.000	0.000

FHCF Coverage





5. Other Topics of Interest

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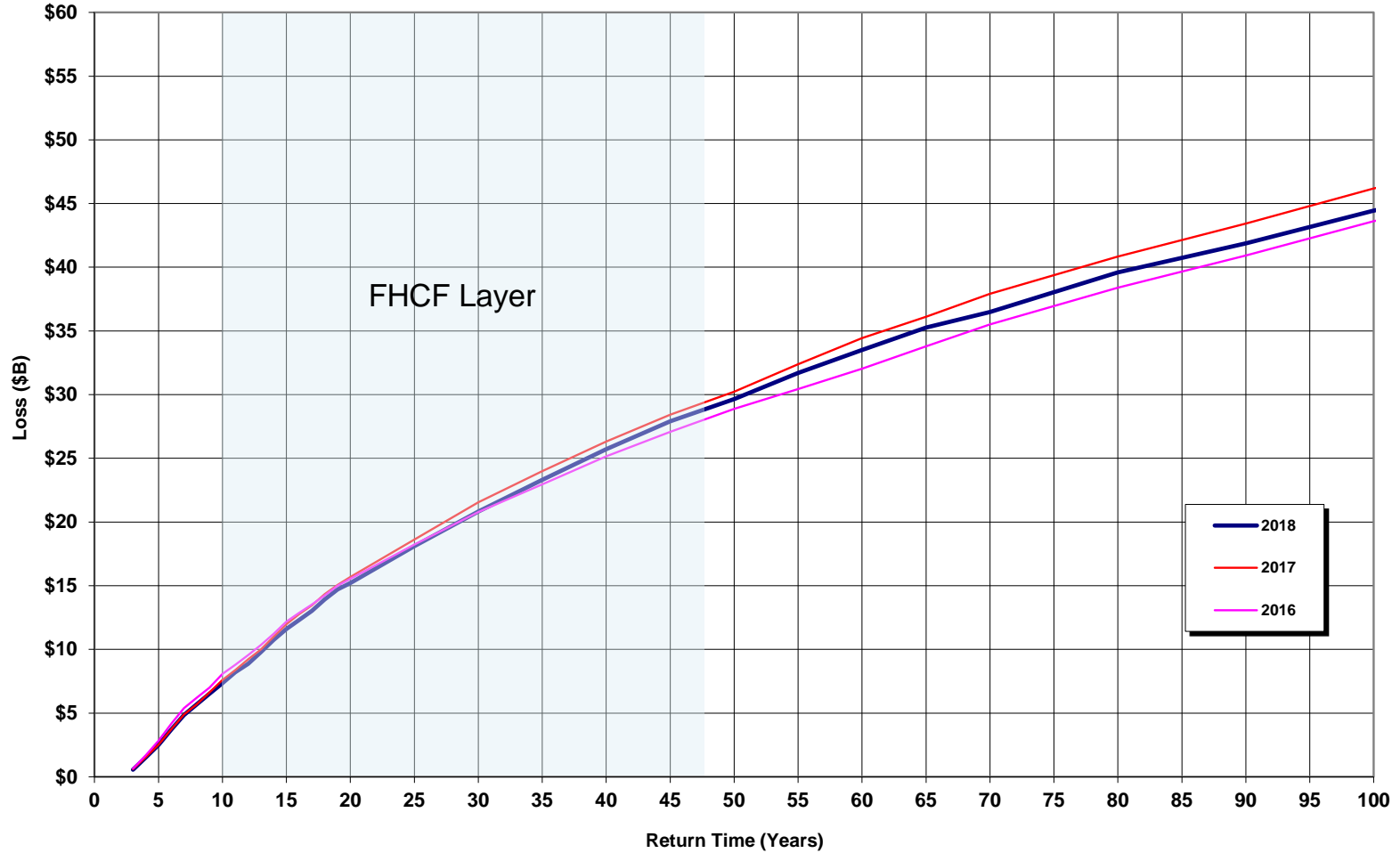
Modeled Losses (\$ Billions)

	<u>2017</u>	<u>2018</u>	<u>% Change</u>
Modeled Exposure	\$2,188	\$2,238	2.3%
Gross Losses	\$3.180	\$3.174	-0.2%
FHCF Layer Losses	\$0.817	\$0.788	-3.6%
Loss Cost per \$1,000	0.3734	0.3520	-5.7%

2018 Ratemaking Formula Report

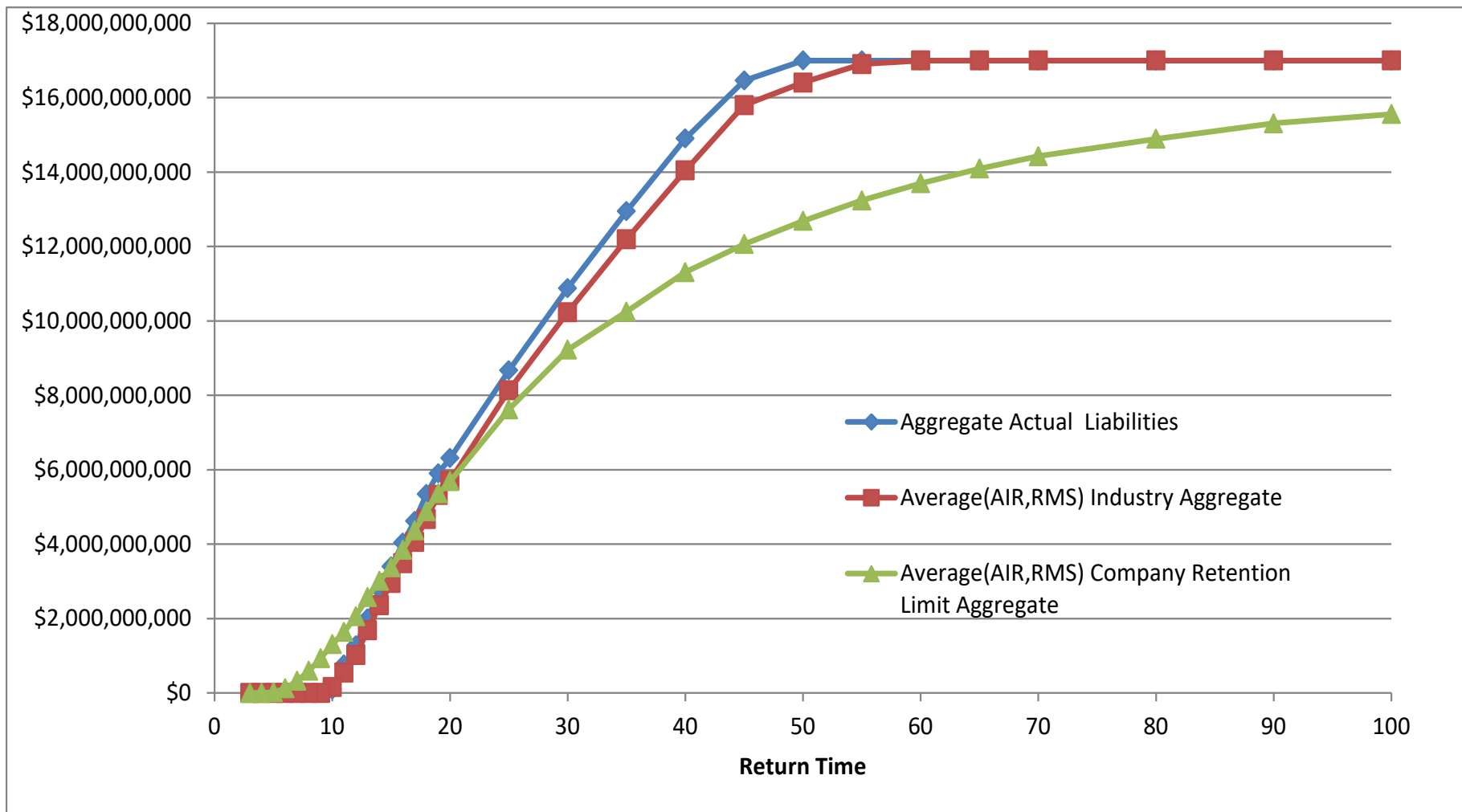
Modeled Losses

Gross Single Event Severity Distribution
Adjusted to 2018 Exposure Level



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Retention Limit Adjustment 03/01/2018 Update



2018 Ratemaking Formula Report

Expense for Pre-Event Notes

Florida Hurricane Catastrophe Fund
 Addendum to the 2018 Ratemaking Formula Report
 Pre-Event Note Expense Loading
 Contract Term : 6/01/2018 to 5/31/2019

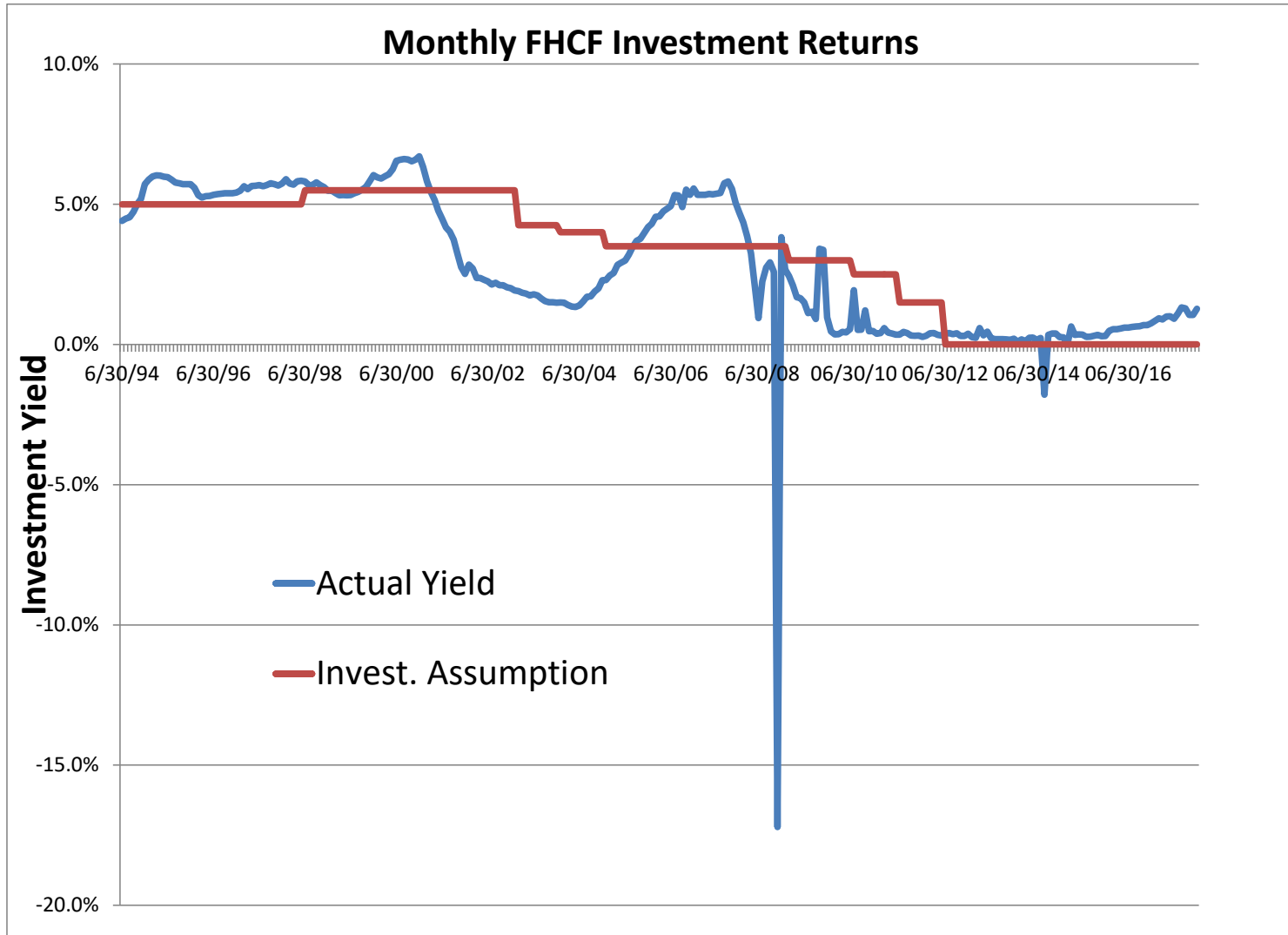
	2013A Projected Debt Service	2016A Projected Debt Service	Total Debt Service Net Cost
Reimbursement Deposit			
1 Premium	14,000,000	7,000,000	21,000,000
2 Average Market Value	1,041,095,890	1,200,000,000	2,241,095,890
3 Exp. Default Loading %	0.3%	0.3%	
4 Exp. Default Cost (2)*(3)	3,123,288	3,600,000	6,723,288
Total Projected Liquidity			
5 Facility Cost (1)+(4)	17,123,288	10,600,000	27,723,288

Notes

- This method uses values projected by the FHCF's Financial Advisor, Raymond James (01/11/2018 for 2013A); (1/11/2018 for 2016A); plus a judgmental loading for potential asset loss.
- \$500 million of \$1.5 billion 2013A Bonds come due on 7/1/2018.

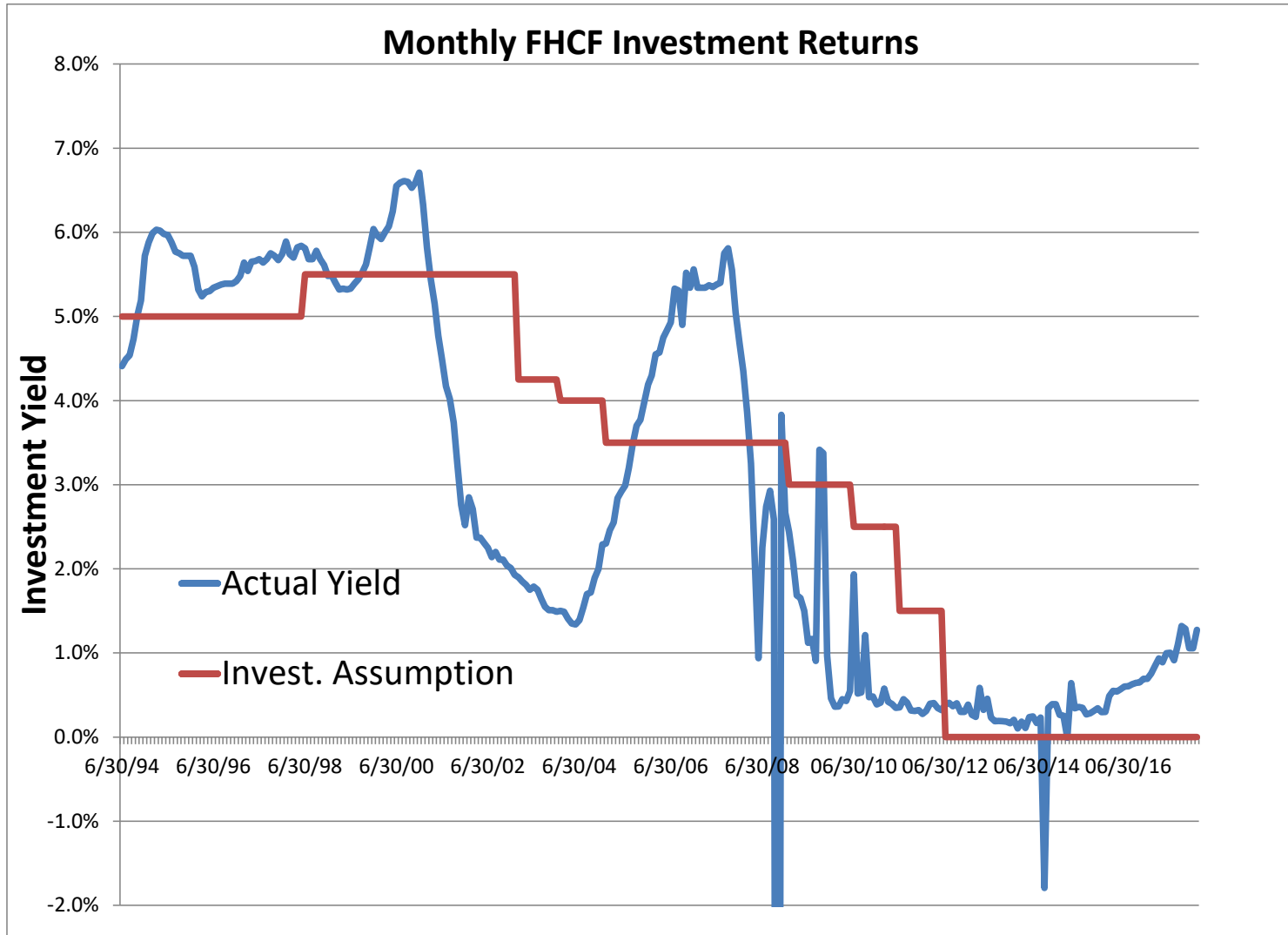
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Interest Rate Assumption 0.0%



2018 Ratemaking Formula Report

Interest Rate Assumption 0.0%



2018 Ratemaking Formula Report

Mitigation Rating Factors

Rating Factor	Description	Type of Business				
		Commercial	Residential	Mobile Home	Tenants	Condos
Year Built	2012 or later	0.4029	0.4321	1.0000	0.4496	0.4336
	2002 - 2011	0.4273	0.4640	1.0000	0.4787	0.4586
	1995-2001	0.6558	0.7323	1.0000	0.7431	0.7201
	1994 or Earlier	1.3256	1.4177	1.0000	1.4051	1.3424
	Unknown or Mobile Home	1.0943	1.0309	1.0000	1.0479	1.0209
Roof Shape	Hip, Mansard, or Pyramid	0.8605	0.8395	1.0000	0.7836	0.8032
	Gable, Other or Unknown	1.0418	1.1138	1.0000	1.0116	1.0374
Opening Protection	Structure Opening Protection**	0.8200	0.8451	1.0000	0.7458	0.7940
	No Structure Opening Protection	1.0693	1.0910	1.0000	1.0086	1.1089
On Balance Factor		0.9775	0.9667	1.0000	0.9956	0.9835

**Structure Opening Protection Credit requires that primary policy has structure opening protection credit.

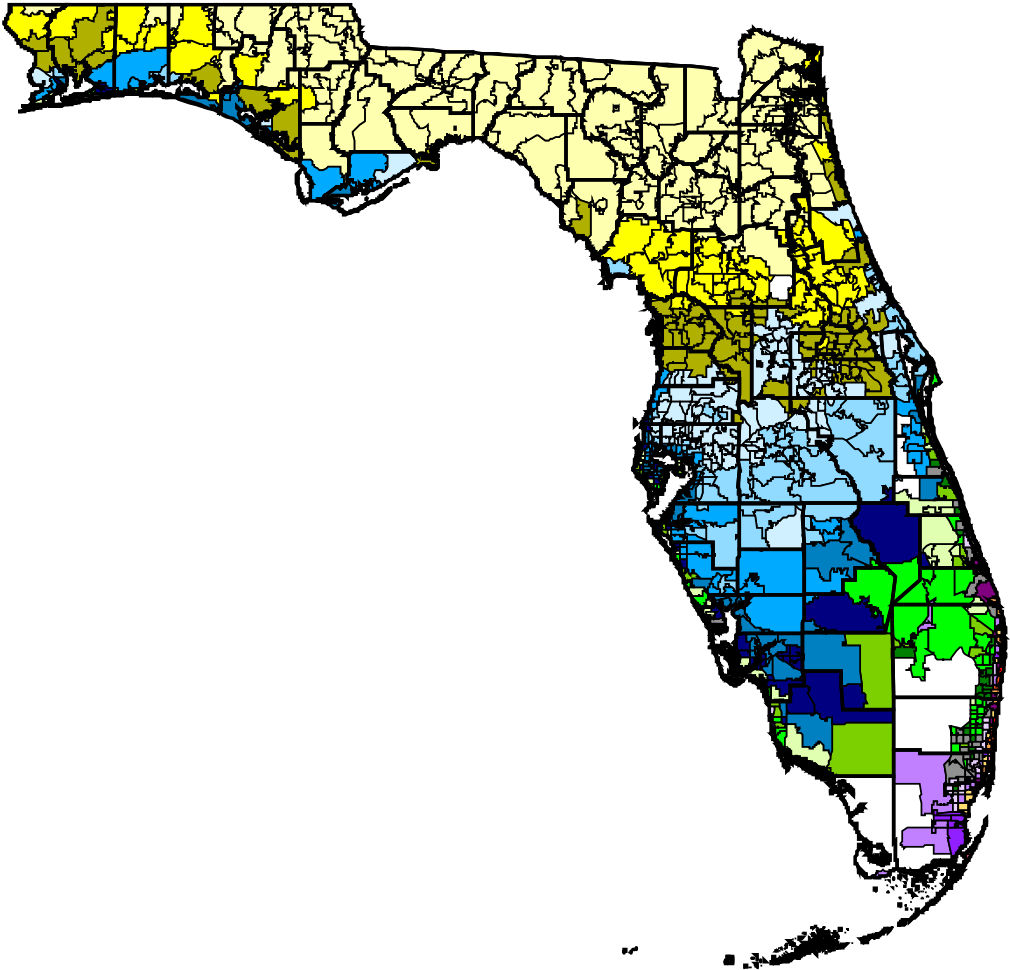
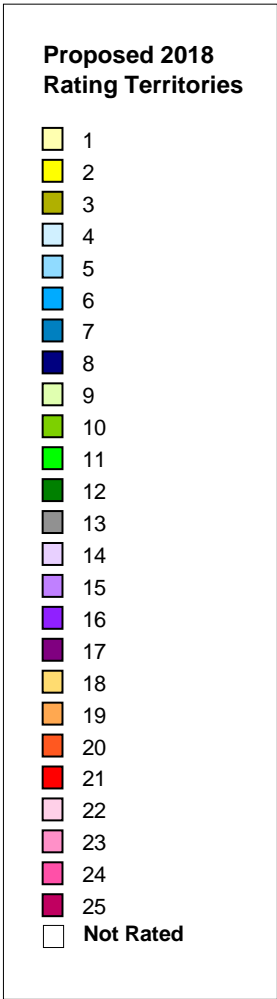
2018 Ratemaking Formula Report

Loadings and Factors

Adjustment	2017	2018
Adj. to Gross Losses	4.23%	4.28%
Post-model	5.0%	5.0%
Retention + Limit	0.572%	0.299%
Investment Income	0.0%	0.0%
Operating Expense	\$7,748,000	\$7,932,277
Pre Event Note Expense	\$44,600,000	\$27,723,288
Reinsurance (Premium net of ceded loss)	\$28,918,819	\$30,524,968

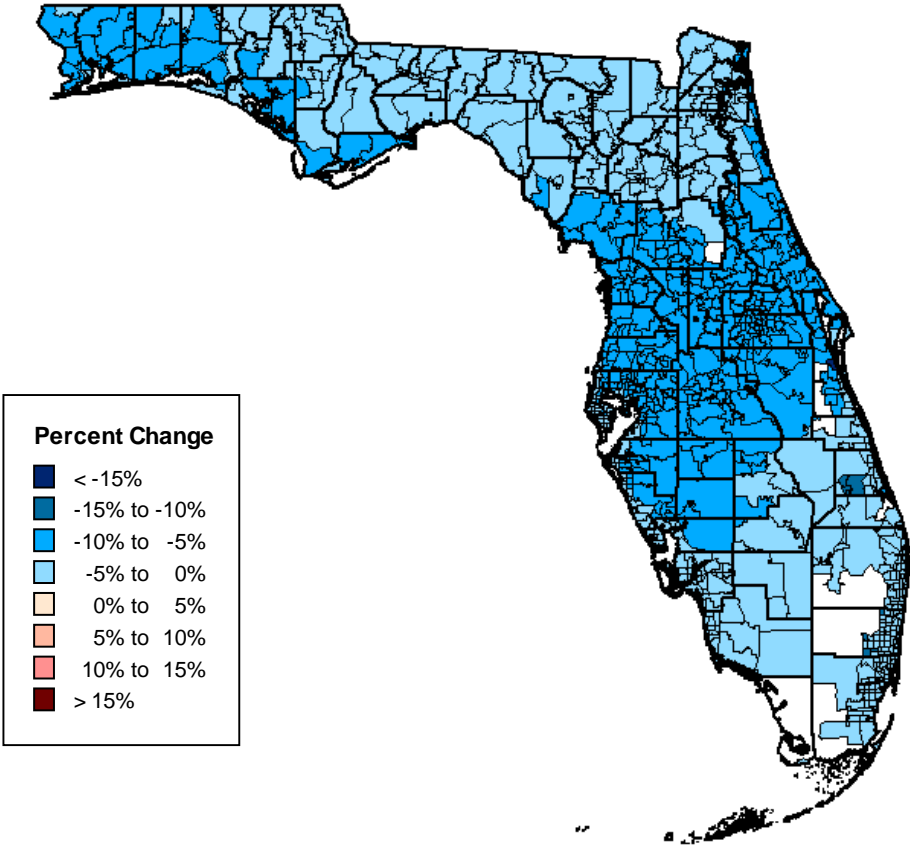
2018 Ratemaking Formula Report

Proposed 2018 Rating Territories



2018 Ratemaking Formula Report

Proposed 2018 % Rate Change by Zip Code



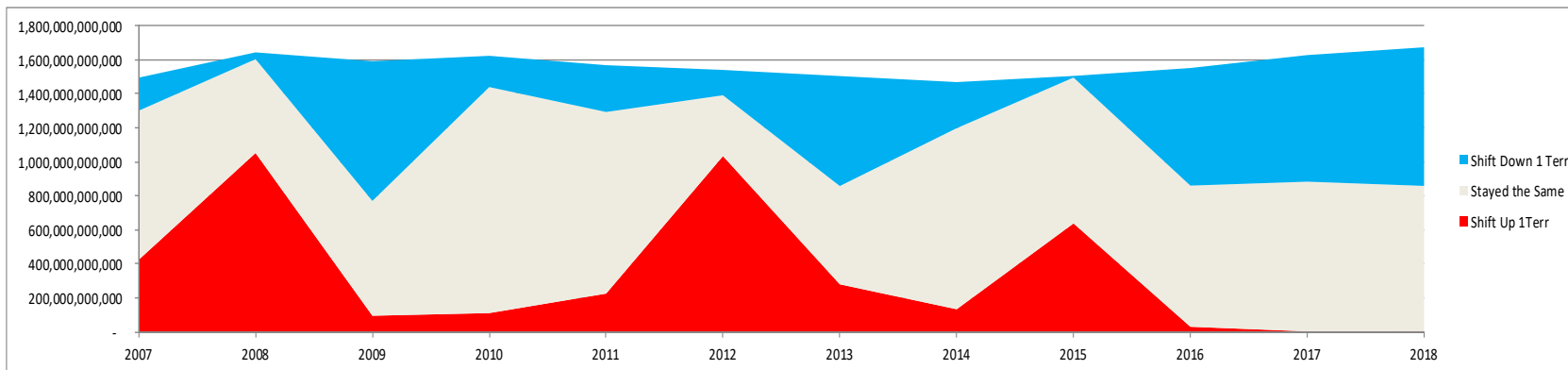
2018 Ratemaking Formula Report

Indicated Zip Code Shifts by Year

	Zip Count	Zip Count	Zip Count	Zip Count	Zip Count	Zip Count	Zip Count	Zip Count	Zip Count	Zip Count	Zip Count	Zip Count
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Shift Up 1Terr	415	848	117	136	244	884	286	153	615	58	14	11
Stayed the Same	913	579	641	1182	935	394	610	1042	796	660	811	769
Shift Down 1 Terr	143	47	707	146	286	187	569	271	54	743	639	681
Grand Total	1471	1474	1465	1464	1465	1465	1465	1466	1465	1461	1464	1461

The table below outlined how the Modeled Residential exposure, after tempering, has moved relative to last year's territory allocations. 2017 and 2018 indicated shifts were not implemented, except if the indication was for a change of two or more territories.

	Residential Exposure	Residential Exposure	Residential Exposure	Residential Exposure	Residential Exposure	Residential Exposure	Residential Exposure	Residential Exposure	Residential Exposure	Residential Exposure	Residential Exposure	Residential Exposure
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Shift Up 1Terr	424,239,189,098	1,052,071,843,315	95,153,867,703	110,793,850,670	225,354,576,503	1,034,102,124,911	279,982,310,693	133,372,324,850	638,038,689,041	30,355,393,045	3,067,928,183	4,633,160,184
Stayed the Same	876,709,520,929	552,189,825,165	675,246,787,074	1,329,194,622,054	1,068,072,705,322	357,624,555,304	578,054,403,377	1,064,750,757,567	857,963,061,092	830,059,146,159	880,648,180,716	854,085,060,259
Shift Down 1 Terr	194,377,582,850	39,769,466,565	821,485,686,346	183,788,837,645	275,251,133,171	149,042,393,925	646,657,288,762	271,116,842,049	9,470,255,881	691,630,004,707	744,323,398,847	815,323,942,820
Grand Total	1,495,326,292,877	1,644,031,135,044	1,591,886,341,123	1,623,777,310,369	1,568,678,414,996	1,540,769,074,140	1,504,694,002,832	1,469,239,924,466	1,505,472,006,014	1,552,044,543,911	1,628,039,507,746	1,674,042,163,263



2018 Ratemaking Formula Report

% Rate Changes for 2018

% Change in Rates

Maximum Decrease -21.39%
 Minimum Decrease -1.43%

Threshold		Count of ZIP Codes	Percentage of Zip Codes in Group	Residential Exposure (in 000's)	Percentage of Res Exposure in Group	Residential Exposure Risk Counts (Houses)	Percentage of Risk Counts in Group
From	To						
Less Than	-15%	5	0.34%	6,887,169	0.41%	13,265	0.34%
	-15% -10%	12	0.82%	21,691,717	1.30%	39,112	1.02%
	-10% -5%	597	40.86%	747,654,624	44.66%	1,770,694	46.03%
	-5% 0%	847	57.97%	897,808,653	53.63%	2,023,358	52.60%
	0% 5%	0	0.00%	-	0.00%	-	0.00%
	5% 10%	0	0.00%	-	0.00%	-	0.00%
	10% 15%	0	0.00%	-	0.00%	-	0.00%
Greater Than	15%	0	0.00%	-	0.00%	-	0.00%
New ZIP Codes in 2018		1461	100.00%	1,674,042,163	100.00%	3,846,429	100.00%
		0	0.00%	-	0.00%	-	0.00%
		1461	100.00%	1,674,042,163	100.00%	3,846,429	100.00%

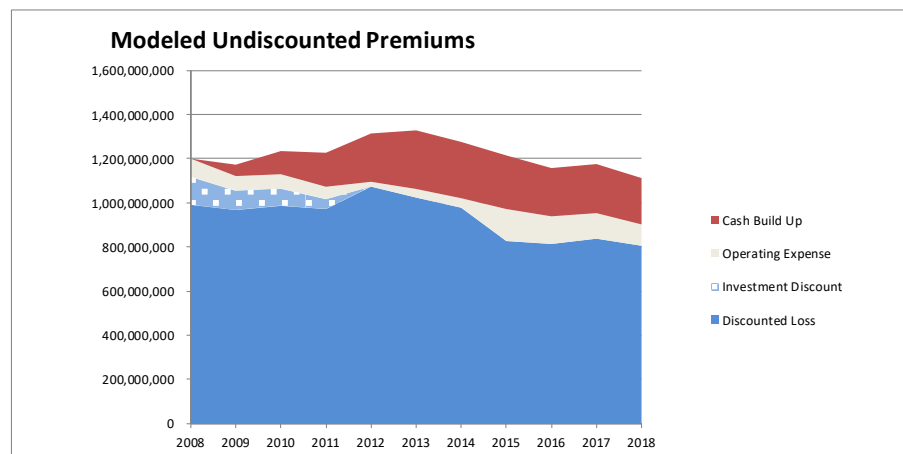
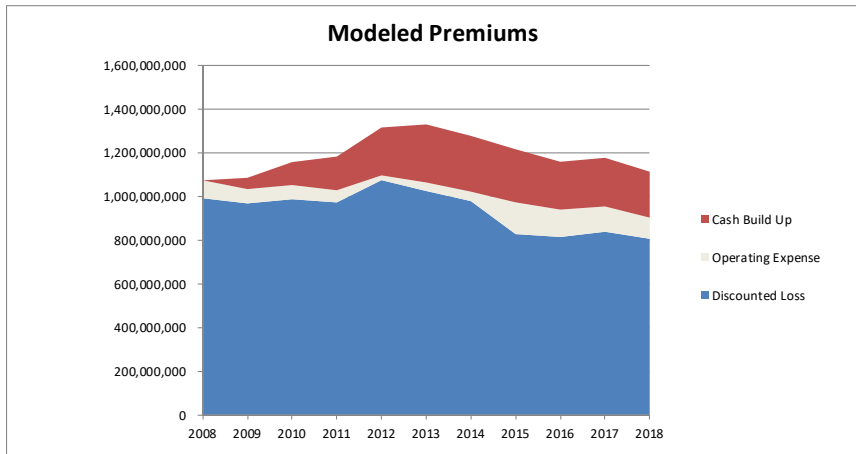


6. Recap

2018 Ratemaking Formula Report

History of Components (Supplemental Versions)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Discounted Loss	990,619,049	967,000,146	986,038,487	971,475,818	1,073,304,022	1,023,717,879	977,570,704	826,610,529	813,345,583	837,274,138	805,237,227
Operating Expense	82,136,065	65,463,190	64,889,850	55,642,505	21,910,834	39,000,556	43,140,000	145,128,824	125,323,288	115,848,000	96,655,565
Cash Build Up	0	51,623,167	105,092,834	154,067,748	219,042,971	265,679,609	255,177,676	242,934,838	218,792,218	222,405,535	210,223,198
Modeled Premiums	1,072,755,114	1,084,086,503	1,156,021,171	1,181,186,071	1,314,257,827	1,328,398,044	1,275,888,380	1,214,674,191	1,157,461,089	1,175,527,673	1,112,115,989
Investment Discount	127,479,463	88,670,499	78,563,624	45,594,759	0	0	0	0	0	0	0
Modeled Undiscounted Premiums	1,200,234,577	1,172,757,002	1,234,584,795	1,226,780,830	1,314,257,827	1,328,398,044	1,275,888,380	1,214,674,191	1,157,461,089	1,175,527,673	1,112,115,989



2018 Ratemaking Formula Report

Overall Indications

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\$17,000,000,000	Actual 2017	6.64%	6.54%		-1.45%



7. Questions

2018 Ratemaking Formula Report Questions