# REPORT PREPARED FOR THE FLORIDA HURRICANE CATASTROPHE FUND



#### **CLAIMS-PAYING CAPACITY ESTIMATES**

May 17, 2023

Once finalized, the statement of the FHCF's estimated borrowing capacity, estimated claims-paying capacity, and projected year-end balance required under s. 215.555(4)(c)2., F.S., will be published in the Florida Administrative Register as required by law.

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SECTIO	<u>ON</u>	PAGE
I.	Introduction	. 1
II.	The Process	. 5
III.	Analytical Considerations	. 6
IV.	Bonding and Claims-Paying Capacity Estimates	13

#### **Appendix**

- A) Bonding Capacity Solicitation & Senior Manager Responses
- B) FHCF Emergency Assessment Base History



#### Introduction

The Florida Hurricane Catastrophe Fund ("FHCF") is a tax-exempt trust fund created by the State of Florida in 1993 and is administered by the State Board of Administration of Florida under Section 215.555, Florida Statutes. It was created to operate exclusively for the purpose of protecting and advancing the state's interest in maintaining insurance capacity by providing contractually specified coverage that provides reimbursement for a portion of residential property insurers' hurricane losses. Participation is mandatory for authorized property insurers, subject to limited exceptions.

Participating insurers pay the FHCF annual reimbursement premiums as consideration for this reimbursement coverage. The reimbursement premiums are based on insured values of covered properties, as reported annually to the FHCF. The FHCF statute requires the annual adoption of a reimbursement premium formula that generates actuarially indicated premiums as defined by law. An insurer's premium is proportionate to its coverage selection at a percentage level and its share of the FHCF's total risk exposure.

The annual reimbursement contract provides for reimbursement of a percentage of an insurer's residential hurricane losses in excess of its retention which is determined under a statutory formula. Reimbursement is provided at one of three percentage levels (90%, 75%, or 45%) selected in advance by the insurer.

The FHCF may obtain funds to pay its contractual reimbursement obligations from the following available potential sources:

- (1) Accumulated and current year reimbursement premiums
- (2) Recoveries from reinsurance and other risk-transfer mechanisms, if any
- (3) Pre-event bond proceeds and other pre-event liquidity resources
- (4) Proceeds of post-event revenue bonds or bank loans issued under Section 215.555(6), Florida Statutes, and secured by emergency assessments, if needed
- (5) Investment earnings on accumulated reimbursement premiums and emergency assessments

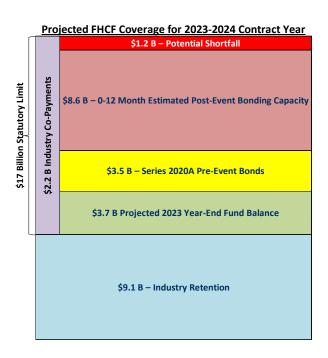
The actual and potential obligations of the FHCF are limited by statute. For the contract year June 1, 2023 – May 31, 2024, the maximum potential liability of the FHCF is \$17 billion, with projected available total liquid resources of approximately \$7.2 billion, which is comprised of \$3.7 billion of projected year-end fund balance and \$3.5 billion of pre-event bond proceeds. The projected available total liquid resources of \$7.2 billion is \$9.8 billion below the maximum potential liability, which would therefore require additional financing. In addition, the FHCF statute limits the Fund's reimbursement liability to its



actual claims-paying capacity, which may depend on financial market conditions at the time of sale if any post-event revenue bonds are needed to pay claims.

Hurricane Ian initially made landfall on September 28<sup>th</sup>, 2022 near Cayo Costa, Florida as a very strong Category 4 hurricane with sustained winds near 150 mph. Paragon Strategic Solutions Inc. ("Paragon"), the FHCF's consulting actuary, estimates the FHCF's share of losses will be between \$6-\$13 billion and is projecting an ultimate loss amount of \$10 billion. There is significant uncertainty regarding the ultimate loss amount as losses are just beginning to develop. Estimates are based on the output of models and are subject to significant uncertainty; therefore, there is no guarantee that actual losses will fall within the projected range.

The chart below summarizes the sources of funds for the FHCF's projected coverage for the 2023-2024 Contract Year after Hurricane Ian loss estimates. The \$9.1 billion industry retention is the maximum loss amount retained by the industry below the FHCF coverage layer. The \$3.7 billion 2023 year-end projected fund balance is based on assumptions prepared by Paragon and Raymond James, the FHCF's financial advisor. The approximately \$2.2 billion industry co-payment amount is the maximum co-pay for the industry for losses in the FHCF coverage layer based on the projected industry overall coverage selection of 87.401%. The \$17 billion of FHCF coverage includes an allowance of 10% for loss adjustment expenses.



Numbers may not add due to rounding. Not drawn to scale

Historically, the FHCF has shown probabilities of ground up losses based on the impact of simulated industry losses on the FHCF, with a single industry retention, industry limit and industry coverage selection,



and all exposures combined. This approach produces a proxy for an accurate estimate of industry expected losses for the FHCF coverage layer. However, as we have reflected in prior capacity analysis reports, in actual practice, each participating insurer has its own loss experience based on its own exposure, retention, limit, and FHCF coverage selection with its own unique probabilities of incurring FHCF layer losses. To more accurately estimate ground up losses and return times for different levels within the FHCF coverage layer, Paragon uses a detailed company approach which includes an additional analysis based on model results by ZIP code and type of business and each individual company retention, company limit, and coverage selection. The table below compares the return times and corresponding ground up losses from these two methods for selected FHCF layer loss levels. The FHCF layer loss includes an allowance of 10% for loss adjustment expenses.

		Ground Up Losses for Average Verisk, RMS Company Retention Limit	Return Times (Yrs) for Aggregate Verisk, RMS Company Retention
Layer	FHCF Layer Loss	Aggregate <sup>1</sup>	Limit Aggregate <sup>1</sup>
\$1 Billion FHCF Layer	1.0	7.9	8
Projected Fund Balance Exhausted	3.7	13.3	12
\$5 Billion FHCF Layer	5.0	15.2	14
Pre-Event Bonds Exhausted	7.2	18.4	17
Hurricane Irma Level Event	7.8	19.5	17
\$10 Billion FHCF Layer (Ian Level)	10.0	23.3	21
FHCF Capacity Exhausted	12.3	28.5	28
Maximum Statutory Limit	17.0	98.2	240

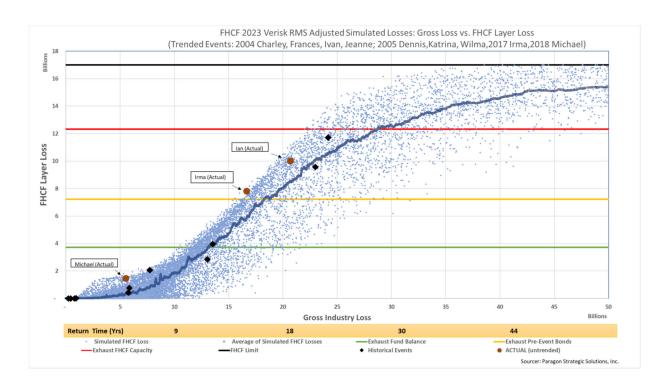
Source: Paragon Strategic Solutions. Dollars in billions.

Return times and ground up losses are shown for illustrative purposes only.

The chart on the following page shows gross losses versus detailed company FHCF layer losses, simulated event years (blue dots), trended actual events (black diamonds), and untrended actual events (red dots). Note there are many possible FHCF layer losses for each gross loss level. The dark blue line is based on the average of the detailed company approach. The green line is set at the \$3.7 billion projected year-end fund balance, which has accounted for all prior contract years' projected hurricane losses. The yellow line reflects the total liquidity level at \$7.2 billion, which is the sum of the \$3.7 billion fund balance and the \$3.5 billion pre-event bonds. The red line shows the point at which the estimated claims-paying capacity of \$12.3 billion would be exhausted and the black line is set at the \$17 billion total FHCF limit of liability. Events above the green line would require post-event bonding for a portion of their payments. For gross industry losses between \$13 billion and \$20 billion, the two methods generate similar average annual FHCF layer loss estimates.

<sup>&</sup>lt;sup>1</sup> The relevant data is shown for the sum of the approximately 150 participating insurers with each having its own retention and coverage limits based upon its projected market share exposures, and therefore each participating insurer has its own unique probabilities of triggering its FHCF coverage and reaching its FHCF coverage limit.





Pursuant to Section 215.555(4)(c)(2), Florida Statutes, "in May and October of the contract year, the board shall publish in the Florida Administrative Register a statement of the fund's estimated borrowing capacity, the fund's estimated claims-paying capacity, and the projected balance of the fund as of December 31." The purpose of these claims-paying capacity estimate reports is to provide an estimate of the borrowing and claims-paying capacity of the FHCF for the 2023-2024 Contract Year and the following contract year in order to assist the FHCF's participating insurers in determining their reimbursements.

Providing estimates at these times of the year is useful since some insurers operate in multiple states and purchase private reinsurance effective January 1<sup>st</sup>, while many other insurers operate solely in Florida and purchase their private reinsurance prior to June, effective June 1<sup>st</sup> of each year.



As in prior years, in order to estimate the FHCF's borrowing capacity for the 2023 and 2024 seasons, we took the following three steps:

(1) Evaluated market conditions for the FHCF using our internal resources. Raymond James & Associates, Inc. ("Raymond James"), a full service broker-dealer with approximately \$19 billion in market capitalization (RJF, www.raymondjames.com), serves as the independent

Raymond James and the FHCF staff utilized the resources of the FHCF's five senior managing underwriters to estimate FHCF bonding capacity

financial advisor to the FHCF. Raymond James also serves as an independent advisor to numerous other governmental catastrophe insurance entities across the country and our experience includes the evaluation and placement of risk transfer programs in both traditional and capital markets, the issuance of pre-event bonds and other liquidity mechanisms, the issuance of post-event bonds, structuring bank loans, and serving as an investment consultant. We rank number one as financial advisor to state-sponsored public insurance entities and are among the top municipal underwriters in the country and participate daily in the market for fixed income securities similar to those the FHCF has issued or would issue to help meet its reimbursement obligations after an event and have served as independent advisor or underwriter on the issuance of over \$48 billion of debt and related financial instruments for the FHCF and other governmental catastrophe insurance entities around the country since 2005. Raymond James currently has approximately \$1.2 trillion of assets under management.

- (2) Solicited formal written feedback from the five current senior managing underwriters of the FHCF's financial services team and given certain assumptions. These firms Bank of America, Citi, J.P. Morgan, Morgan Stanley and Wells Fargo are among the largest financial services firms and municipal underwriters in the world, and each one has extensive experience and expertise with FHCF securities and similar instruments for other municipal issuers. They all were also part of the team for the successful execution of the FHCF's Series 2020A pre-event financing. As always, in our written request for feedback, we sought to ensure that the underwriters had a clear understanding of the purpose of asking them to provide such estimates and the uses thereof. A copy of the solicitation and the response of each of the managers is contained in Appendix A.
- (3) We evaluated the written feedback and determined a recommended bonding capacity estimate for inclusion in this report.



The FHCF has very strong debt repayment capabilities. From a credit standpoint, the ability to levy emergency assessments on all property and casualty insurance lines except workers' compensation, medical malpractice, federal flood, and accident and health lines is similar to a statewide sales tax on an essential product with an underlying premium base of \$72.6 billion<sup>1</sup>. The strength of this

The major constraint, if any in the future, for the FHCF in achieving its maximum reimbursement obligation is potential limitation of market access and capacity, not a lack of assessment capability or credit strength

pledged revenue stream is the primary reason the three major rating agencies – Moody's, Standard & Poor's, and Fitch – rate the FHCF's current debt as Aa3, AA, and AA, respectively. To put these ratings in perspective, less than 5% of U.S. corporations have ratings in the "AA" category by all three rating agencies.

While the FHCF statute does limit the amount of assessments that can be levied – 6% for losses attributable to one contract year and 10% for losses attributable to all years – these percentages, when applied to the current assessment base of \$72.6 billion, mean the FHCF could levy annual assessments of as much as \$4.36 billion for losses from hurricanes occurring in one contract year and as much as \$7.26 billion for losses from hurricanes occurring over all contract years. These annual amounts, in conjunction with the other available resources of the FHCF, are estimated to be sufficient to support the estimated borrowing capacity for the FHCF. The financial markets are currently in flux as interest rates have significantly increased and are currently very volatile due to global macroeconomic factors such as the banking crisis, Russia's invasion of the Ukraine, and actions by both the Federal Reserve and global central banks to combat inflation that is at historically high levels not seen since the 1980's. Credit spreads have widened due to the volatility in the fixed income markets – even for high-grade credits such as the FHCF – therefore, we have utilized rates of 7% for the initial season and 9% for the subsequent season, which are "above market" rates.

The FHCF was able to successfully execute the Series 2020A taxable pre-event financing in September 2020. The Series 2020A financing had a preliminary transaction size of \$2.25 billion with \$750 million maturities in five, seven and ten years. Based on significant investor demand even at significantly low interest rates at that time, the FHCF was able to upsize the transaction to \$3.5 billion while maintaining initial pricing levels with a low true interest cost of 1.842%. Based on stronger investor demand for the 5-year and 10-year maturities relative to the 7-year maturity at the time of sale, the 5-year and 10-year maturities were upsized to \$1.25 billion each while the 7-year maturity was upsized to \$1 billion. The Series 2020A financing had strong investor demand with over 100 investors participating in the transaction, placing approximately \$6.4 billion of orders. The Series 2020A transaction re-established the FHCF in the

<sup>&</sup>lt;sup>1</sup> See Appendix B for an analysis of the size and growth of the FHCF's assessment base over time.



municipal bond marketplace and illustrated the significant amount of investor demand that exists in the taxable municipal market for a strong credit like the FHCF. However, significant time has elapsed since the 2020 transaction; interest rates have significantly increased and market access can never be guaranteed, especially in volatile times or after an event or multiple events either in Florida or globally. Therefore, it is critical to understand the potential challenges the FHCF may face after an event.

In addition, pricing conditions in the global reinsurance markets affect the participating insurers' coverage percentage selections. Hardening market conditions in the global reinsurance markets, especially in the Florida marketplace, began in 2020 and have continued into 2023. Florida has experienced a significant decrease in reinsurance capacity from global reinsurers due to Florida's insurance market conditions. Due to hardening reinsurance pricing and reduced capacity in the Florida market, the FHCF's average coverage increased for 2023 to approximately 87.4%. Due to Hurricane Ian losses and global macroeconomic factors, the global reinsurance markets are expected to remain hard, which will further reduce the reinsurance capacity for the Florida market.

The chart below illustrates the FHCF's projected \$7.2 billion of liquidity resources for the 2023-2024 Contract Year, which is \$9.8 billion below its maximum statutory obligation of \$17 billion. The FHCF's 2023-2024 Contract Year liquidity resources have been adjusted for paid losses and loss reserves in the total amount of \$19.25 billion for Hurricanes Ian, Irma, and Michael. At this time, the FHCF's projected ultimate incurred loss estimates are \$7.80 billion from Hurricane Irma, \$1.45 billion from Hurricane Michael, and \$10 billion from Hurricane Ian.

FHCF Obligations and Liquidity Resources – 2023-2024 Contract Year	Amount (\$B)
Total Potential FHCF Obligations	\$17.0
Projected 2023 Year-End Fund Balance	\$3.7
Series 2020A Pre-Event Bonds Balance	\$3.5
Total Liquidity Resources	\$7.2
Total Liquidity Resources Below Potential Obligations	\$9.8

Numbers may not add due to rounding.

After an event and depending on market conditions and interest rates, the FHCF could either draw on its Series 2020A pre-event bond proceeds and repay the pre-event bonds by issuing post-event bonds, or the FHCF could issue post-event bonds and preserve its \$3.5 billion Series 2020A pre-event bond proceeds for subsequent seasons. As shown in the next two charts, the largest single issuance since 2020 was \$7.0 billion. After a hurricane event, the FHCF most likely will not need to do one single large financing, but could issue two to three series of bonds likely over more than one year based on loss payouts from storms. Accordingly, it is helpful to evaluate which issuers in the municipal market (both taxable and taxexempt) have issued the most debt over a 12-month period. The charts on pages 9 and 10 show that the



largest cumulative amount issued by a single issuer in a calendar year since 2020 has ranged from \$7.8-\$13.7 billion.

	Largest 25 Taxable Municipal Issuances By Par Amount Since 2020					
					Par	
Rank	Issuer Name	State	Year of Sale	Issue Description	(\$MM)	
1	Texas Natural Gas Sec Fin Corp	TX	2023	Customer Rate Relief Bonds	\$7,044	
2	California	CA	2023	Various Purpose GO Bonds	\$3,608	
3	Florida St Board Admin Fin Corp	FL	2020	Revenue Bonds	\$3,500	
4	Louisiana Gov Env Fac & CDA (LCDA)	LA	2022	System Restoration Bonds	\$3,194	
5	Louisiana Gov Env Fac & CDA (LCDA)	LA	2023	System Restoration Bonds	\$2,983	
6	Golden State Tobacco Sec Corp	CA	2021	Tobacco Settle Asset-Backed Bonds	\$2,800	
7	Massachusetts	MA	2022	Special Obligation Rev Bonds	\$2,681	
8	Regents of the University of Michigan	MI	2022	General Revenue Bonds	\$2,000	
9	Hawaii	HI	2021	GO & Refunding Bonds	\$1,883	
10	Golden State Tobacco Sec Corp	CA	2021	Enhance Tobacco Settle Bonds	\$1,840	
11	NYS Dorm Authority	NY	2021	State Personal Income Tax Bonds	\$1,826	
12	Regents of the Univ of California	CA	2020	General Revenue Bonds	\$1,823	
13	Regents of the Univ of California	CA	2020	Medical Center Pooled Rev Bonds	\$1,800	
14	Los Angeles Comm College Dt	CA	2020	GO Refunding Bonds	\$1,794	
15	California State Univ Trustees	CA	2021	Systemwide Revenue Bonds	\$1,664	
16	New York City-New York	NY	2020	General Obligation Bonds	\$1,500	
17	Alabama Fed Aid Highway Fin Auth	AL	2021	Special Obligation Revenue Bonds	\$1,496	
18	Oklahoma Dev Finance Auth	OK	2022	Ratepayer-Backed Bonds	\$1,354	
19	Grand Parkway Transport Corp	NY	2020	Sub Tier Toll Revenue Ref Bonds	\$1,293	
20	Texas Transportation Commission	TX	2020	GO Mobility Fund Ref Bonds	\$1,271	
21	Dallas & Fort Worth Cities-Texas	TX	2020	Joint Revenue Refunding Bonds	\$1,194	
22	Dallas & Fort Worth Cities-Texas	TX	2022	Joint Revenue Improvement Bodns	\$1,188	
23	Port Authority of NY & NJ	NY	2020	Consolidated Notes	\$1,100	
23	Regents of the University of California	CA	2022	Medical Ctr Pooled Rev Bonds	\$1,100	
24	Massachusetts School Bldg Auth	MA	2020	Sr Dedicated Sales Tax Bonds	\$1,095	
25	Regents of the Univ of California		2021	General Revenue Bonds	\$1,089	

Source: Thomson Financial for long-term negotiated taxable issuances from January 1, 2020 to April 30, 2023.



	Largest 25 Tax-Exempt Municipal Issuances By Par Amount Since 2020					
					Par	
Rank	Issuer Name	State	Year of Sale	Issue Description	(\$MM)	
1	Buckeye Tobacco Settle Fin Au	ОН	2020	Tobacco Settle Asset-Backed Bonds	\$4,924	
2	New Jersey	NJ	2020	GO Emergency Bonds	\$3,672	
3	Metropolitan Transport Auth (MTA)	NY	2020	Payroll Mobility Tax BANs	\$2,907	
4	NYC Municipal Water Fin Auth	NY	2023	Wtr&Swr Sys 2nd Gen Res Rev Bonds	\$2,586	
5	California	CA	2023	Various Purpose GO & Ref Bonds	\$2,553	
6	Triborough Bridge & Tunnel Auth	NY	2023	Sales Tax Revenue Bonds	\$2,508	
7	NYS Dorm Authority	NY	2020	State Personal Income Tx Rev Bond	\$2,434	
8	NYS Dorm Authority	NY	2022	State Personal Inc Tax Rev Bonds	\$2,422	
9	California	CA	2020	Various Purpose GO & Ref Bonds	\$2,418	
10	Illinois	IL	2023	General Obligation & Ref Bonds	\$2,311	
11	California	CA	2022	Various Purpose GO & Ref Bonds	\$2,292	
12	NYS Urban Development Corp	NY	2020	State Personal Inc Tax Rev Bonds	\$2,225	
13	NYS Dorm Authority	NY	2021	State Personal Inc Tax Rev Bonds	\$2,153	
14	California	CA	2020	Various Purp GO & Ref Bonds	\$2,096	
15	California	CA	2021	Various Purp GO & Refunding Bonds	\$2,095	
16	NYS Thruway Authority	NY	2022	State Personal Inc Tax Rev Bonds	\$1,938	
17	NYS Thruway Authority	NY	2021	Revenue Bonds	\$1,901	
18	Regents of the University of California	CA	2022	Medical Ctr Pooled Rev Bonds	\$1,900	
19	NYC Transitional Finance Auth	NY	2023	Future Tax Secured Sub Bonds	\$1,900	
20	New York City-New York	NY	2023	General Obligation Bonds	\$1,900	
21	California	CA	2022	Various Purpose GO & Ref Bonds	\$1,879	
22	NYS Dorm Authority	NY	2021	State Personal Inc Tax Rev Bonds	\$1,871	
23	Regents of the University of California	CA	2023	General Revenue Bonds	\$1,772	
24	Pennsylvania Econ Dev Fin Auth	PA	2022	Private Activity Revenue Bonds	\$1,759	
25	California	XA	2021	GO Various Purpose & Ref Bonds	\$1,717	

Source: Thomson Financial for long-term negotiated tax-exempt issuances from January 1, 2020 to April 30, 2023.

Largest 25 Issuers By Issued Par Amount 2020					
		Par			
Rank	Issuer Name	(\$MM)			
1	Metropolitan Transport Auth (MTA)	\$9,253			
2	NYS Dorm Authority	\$8,920			
3	California	\$7,473			
4	Texas	\$7,362			
5	New York City-New York	\$6,592			
6	Buckeye Tobacco Settle Fin Au	\$5,352			
7	Massachusetts	\$5,214			
8	NYC Transitional Finance Auth	\$5,072			
9	Regents of the Univ of California	\$4,599			
10	NYS Urban Development Corp	\$4,078			
11	New Jersey	\$3,997			
12	Hawaii	\$3,592			
13	Florida St Board Admin Fin Corp	\$3,500			
14	NYC Municipal Water Fin Auth	\$3,154			
15	New York Transportation Dev Corp	\$3,124			
16	Texas Transportation Commission	\$3,090			
17	Massachusetts Dev Finance Agcy	\$3,028			
18	Miami-Dade Co-Florida	\$2,973			
19	Illinois	\$2,790			
20	District of Columbia	\$2,680			
21	Pennsylvania State University	\$2,600			
22	Connecticut	\$2,550			
23	Los Angeles USD	\$2,330			
24	Wisconsin	\$2,319			
25	Grand Parkway Transport Corp	\$2,307			

	Largest 25 Issuers By Issued Par Amoun	t 2021
	· ·	Par
Rank	Issuer Name	(\$MM)
1	NYS Dorm Authority	\$7,863
2	California	\$6,886
3	Golden State Tobacco Sec Corp	\$6,462
4	NYC Transitional Finance Auth	\$5,494
5	CSCDA Community Imp Auth	\$4,140
6	Connecticut	\$3,321
7	Triborough Bridge & Tunnel Auth	\$3,054
8	NYC Housing Dev Corp	\$2,981
9	Regents of the Univ of California	\$2,923
10	NYC Municipal Water Fin Auth	\$2,870
11	Wisconsin Public Finance Auth	\$2,729
12	Washington	\$2,661
13	Massachusetts	\$2,550
14	NYS Thruway Authority	\$2,504
15	Ohio	\$2,458
16	Empire State Development Corp	\$2,403
17	Miami-Dade Co-Florida	\$2,348
18	Indiana Finance Authority	\$2,310
19	New York City-New York	\$2,300
20	Pennsylvania Turnpike Commission	\$2,299
21	Black Belt Energy Gas Dt	\$2,288
22	Illinois	\$2,151
23	Port Authority of NY & NJ	\$2,119
24	Nashville-Davidson Co Metro Govt	\$2,084
25	California Housing Finance Agcy	\$2,046



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	Largest 25 Issuers By Issued Par Amount 20	Par
Rank	Issuer Name	(\$MM)
1	NYC Transitional Finance Auth	\$13,738
2	Triborough Bridge & Tunnel Auth	\$12,868
3	New York City-New York	\$9,072
4	California	\$8,935
5	NYS Dorm Authority	\$7,976
6	Massachusetts	\$6,719
7	Wisconsin Public Finance Auth	\$5,623
8	Black Belt Energy Gas Dt	\$5,450
9	NYC Municipal Water Fin Auth	\$5,224
10	Regents of the University of California	\$5,171
11	Washington	\$4,917
12	Los Angeles Dept of Airports	\$4,897
13	Virginia Small Business Fin Auth	\$4,831
14	Oklahoma Dev Finance Auth	\$4,402
15	Los Angeles Dept Wtr & Pwr (LADWP)	\$4,203
16	Connecticut	\$4,188
17	Louisiana Gov Env Fac & CDA (LCDA)	\$4,180
18	Denver City and Co-Colorado	\$4,109
19	Los Angeles City-California	\$3,918
20	Texas Water Development Board	\$3,878
21	Main Street Natural Gas Inc	\$3,749
22	Illinois	\$3,738
23	Colorado Health Facilities Auth	\$3,582
24	Port Authority of New York & New Jersey	\$3,568
25	NYS Thruway Authority	\$3,564

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La	Largest 25 Issuers By Issued Par Amount 2023 YTD						
		Par					
Rank	Issuer Name	(\$MM)					
1	Texas Natural Gas Sec Fin Corp	\$7,044					
2	California	\$6,161					
3	Triborough Bridge & Tunnel Auth	\$4,101					
4	NYC Transitional Finance Auth	\$3,696					
5	New York City-New York	\$3,068					
6	Louisiana Gov Env Fac & CDA (LCDA)	\$3,032					
7	NYC Municipal Water Fin Auth	\$2,786					
8	Illinois	\$2,511					
9	Regents of the University of California	\$2,168					
10	Washington	\$2,054					
11	Oregon	\$2,031					
12	California Comm Choice Fin Auth	\$1,840					
13	Wisconsin	\$1,825					
14	District of Columbia	\$1,640					
15	Main Street Natural Gas Inc	\$1,530					
16	Michigan St Hsg Dev Au (MSHDA)	\$1,450					
17	Southeast Energy Authority	\$1,350					
18	NYS Housing Fin-Mortgage Agcy	\$1,305					
19	New Jersey Econ Dev Auth	\$1,239					
20	Massachusetts Bay Transport Auth	\$1,235					
21	Port of Portland-Oregon	\$1,132					
22	Wisconsin Public Finance Auth	\$1,008					
23	San Francisco City/Co Public Util Comm	\$974					
24	Bay Area Toll Authority (BATA)	\$961					
25	Wake Co-North Carolina	\$870					

Source: Thomson Financial for long-term issuances from January 1, 2020 to April 30, 2023.

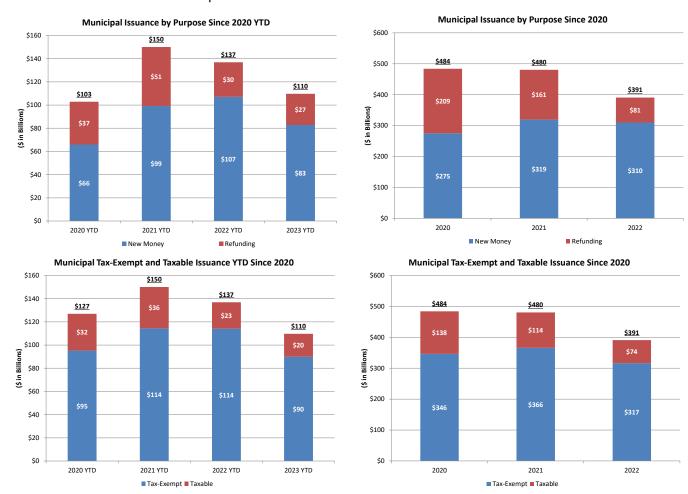
In reviewing this history of large municipal issuers, however, it is important to note that the FHCF has been a relatively infrequent but large issuer of debt. Since 2006, the FHCF has completed eight bond issues totaling \$15.6 billion (three tax-exempt issues totaling \$2.6 billion and five taxable issues totaling \$13.0 billion), of which \$3.5 billion is outstanding. By comparison, for example, since 2020, the State of California has completed 35 long-term bond issues totaling over \$29 billion, the New York State Dormitory Authority has completed 86 long-term bond issues totaling over \$21 billion, the New York City Transitional Finance Authority has completed 74 long-term bond issues totaling \$28 billion, and the Commonwealth of Massachusetts has completed 30 long-term bond issues totaling approximately \$13 billion. The FHCF's debt has always been issued with relatively short maturities ranging from 1-10 years (although it has the authority to issue debt with maturities of up to 30 years). All of the issuers listed above have had final maturities of 30 years or more.

Analysis of potential market acceptance of large amounts of FHCF debt must include not only relevant historical references, but also an evaluation of current market conditions and cash flow needs. Market conditions in both tax-exempt and taxable municipal markets, as well as in the corporate market, remain volatile.



In 2022, corporate issuance was \$1.4 trillion, which was lower than 2021 issuance of \$2.0 trillion. Through April 30, 2023, corporate bond issuance is at \$546 billion, or 17% lower than the \$657 billion issued over the same time period in 2022. The corporate bond market has topped \$1 trillion each year since 2011 while rates were historically low, but rates are volatile and issuance has waned due to the higher rate environment, wider credit spreads, and uncertainty in the marketplace.

For 2022, municipal long-term issuance was lower compared to 2021 with \$391 billion of issuance. For year-to-date 2023, municipal long-term issuance is \$110 billion and is 20% lower compared to the \$137 billion issued over the same time period in 2022.



Source: Thomson Financial for municipal long-term issuances from January 1, 2020 to April 30, 2023.

While market conditions remain highly volatile, the FHCF has multiple factors working in its favor, including, but not limited to: (1) the FHCF is a well-regarded, highly-rated credit (AA category), closely associated with (though not guaranteed by) the State of Florida, a blue-chip name in the market; (2) in September 2020, the FHCF successfully priced \$3.5 billion of Series 2020A taxable pre-event bonds with a 10-year final maturity at a true interest cost of 1.842%, which re-established the strength of the FHCF credit in the taxable market; and (3) similar to its pre-event financings, any post-event bond issuances of the size



the FHCF may need to undertake would also be included in the various benchmark indices market observers use to track market performance, so institutional money managers seeking to at least match indexed returns may have a strong additional incentive to buy FHCF bonds, particularly if they are offered at interest rates marginally higher than those usually associated with typical "AA" rated credits.

Estimating the FHCF's post-event bonding capacity is an inexact science. To do so requires a consideration of the factors above, an extrapolation about what market conditions might exist after single or multiple hurricanes of various sizes, and an evaluation of the many subjective and substantive considerations surrounding these estimates and the uses thereof. Certainty, especially after a large event, is not a defining characteristic of an exercise like this; nor can the results be responsibly guaranteed. Nevertheless, with the proper experience, market perspective and analysis, we can make estimates suitable for the FHCF's requirements – conservative estimates, not guaranteed to be accurate, but responsibly determined using the best available sources.

One additional note of caution is that financial markets and risk transfer markets can be highly volatile and uncertain at various times, as seen in today's current environment. As such uncertainty is currently present, this may create an additional risk for participating insurers who rely on the FHCF for reimbursements. It is never possible to guarantee financial market conditions for very large issuances or into the future for long-term sustainability of the FHCF. The FHCF's estimated post-event borrowing capacity is subjective and depends heavily on the opinions of its five senior managing underwriters and our evaluation and analysis of their responses to our questions. Based on the FHCF's current and projected resources, the FHCF's potential borrowing need to meet the \$17 billion dollar statutory obligation for the 2023-2024 Contract Year is projected to be approximately \$9.8 billion. Participating insurers should recognize the significant impact that financial markets can have on the FHCF's claims-paying ability for the 2023-2024 Contract Year and subsequent seasons. The following pages provide current bonding and claims-paying capacity estimates.



To estimate the FHCF's bonding capacity, we used the general process described in Section II and detailed in Appendix A. Below is the capacity question we asked the FHCF's senior managing underwriters:

The preliminary estimated bonding capacity of the FHCF for the current contract year is \$8.6 billion

"Please provide us with your firm's opinion on the potential tax-exempt and/or taxable post-event market capacity over the next 0-12  $\underline{and}$  12-24 months at rates that are at or above the current "market" scale, as needed."<sup>2</sup>

We considered all data elements, and based on cash flow requirement projections from Paragon, guidance from FHCF staff about potential payout timing, and a desire for prudence, we continue to use the capacity estimates for the first 12 months in formulating the bonding capacity estimate for the initial season. Based on past payout patterns, the amount of debt that the FHCF can raise within the first twelve months is integral for the FHCF and its ability to reimburse participating insurers up to its statutory limit.

We are comfortable including estimates that contain some above-market interest rate capacity in recognition of the significant current market volatility along with the fact that the FHCF's strong assessment capability can support its estimated borrowing capacity, even at significantly higher rates. For purposes of calculating the potential assessment impact of the FHCF's bonding needs, we have calculated the assessment rate assuming the FHCF post-event bonds carry interest rates at an "above market" interest rate of 7% for the initial season and 9% for the subsequent season. There is also some overlap between tax-exempt and taxable capacity estimates and therefore the total capacity available will be marginally less than the sum of the tax-exempt and taxable capacity individually. A summary of the senior managers' responses is shown in the table on the following page:

FHCF Post-Event Estimated Bonding Capacity						
	Bank of America	Citi	J.P. Morgan	Morgan Stanley	Wells Fargo	Average <sup>1</sup>
Bonding Estimates						
Tax-Exempt:						
0-12 Months	\$1.5-\$2B	\$2-\$3.5B	\$5-\$6B	\$3.5-\$5B	\$3-\$4B	\$3.6B
12-24 Months	\$2-\$3B	\$2.5-\$4B	\$5-\$6B	\$2-\$4B	\$2-\$3B	\$3.4B
Total tax-exempt	\$3.5-\$5B	\$4.5-\$7.5B	\$10-\$12B	\$5.5-\$9B	\$5-\$7B	\$7.0B
Taxable:	Гаxable:					
0-12 Months	\$3-\$5B	\$4-\$5.5B	\$6-\$7B	\$5-\$7B	\$3-\$4B	\$5.0B
12-24 Months	\$3-\$5B	\$4-\$5.5B	\$6-\$7B	\$3-\$5B	\$2-\$3B	\$4.4B
Total taxable	\$6-\$10B	\$8-\$11B	\$12-\$14B	\$8-\$12B	\$5-\$7B	\$9.4B
Tax-Exempt and Taxable						
0-12 Months Total	<u>\$4.5-\$7B</u>	<u>\$6-\$9B</u>	<u>\$11-\$13B</u>	\$8.5-\$12B	<u>\$6-\$8B</u>	\$8.6B
12-24 Months Total	<u>\$5-\$8B</u>	\$6.5-\$9.5B	\$11-\$13B	<u>\$5-\$9B</u>	\$4-\$6B	<u>\$7.8B</u>
0-24 Months Total	\$9.5-\$15B	\$12.5-\$18.5B	\$22-\$26B	\$13.5-\$21B	\$10-\$14B	\$16.4B

<sup>&</sup>lt;sup>1</sup> Averages are rounded to the nearest hundred million dollars

<sup>&</sup>lt;sup>2</sup> The complete information request and all responses are included in Appendix A.



Even under the current volatile market conditions, we still believe that using only the 0-12 months number to compute an average is a prudent approach to estimating bonding capacity for the initial season. Using this methodology yields an estimated bonding capacity of approximately \$8.6 billion. This capacity is \$1.2 billion below what would be needed to meet the FHCF's maximum statutory obligation for the 2023-2024 Contract Year. As the FHCF's ability to pay additional claims for a subsequent season is also important, the FHCF's bonding capacity beyond 0-12 months is another important factor. Each of the senior managers believes that the FHCF would have significant additional capacity in the period 12-24 months after an event<sup>3</sup>. This additional capacity could be used to fund a portion of the amount potentially needed for the 2024-2025 Contract Year, in the approximate amounts as shown on the following pages.

#### **Estimated Claims-Paying Capacity**

Estimated claims-paying capacity of the FHCF is equal to the sum of the projected year-end fund balance plus risk transfer, if any, and any other potential financing resources, such as bank loans, and the estimated bonding capacity. Under a scenario when an event happens that depletes the liquid resources of the FHCF, we assume that the FHCF would leave its pre-event bond proceeds outstanding and issue post-event bonds so that the FHCF can preserve liquidity for future contract years. The FHCF projects that its year-end fund balance for the 2023-2024 Contract Year is approximately \$3.7 billion and it has an estimated bonding capacity of \$8.6 billion, which equals a total estimated claims-paying capacity of \$12.3 billion, or over 72% of its statutory limit of \$17 billion. For any remaining losses beyond the FHCF's estimated claims-paying capacity for the 2023-2024 Contract Year, the FHCF may have additional 12-24 month bonding capacity of up to \$7.8 billion available.

<sup>&</sup>lt;sup>3</sup> The longer the time frame for estimation purposes, the greater the degree of uncertainty.



		2023-2024	2024-2025
(\$ in Billions, Totals may not add due to rounding)		Contract Year	Contract Year
FHCF Potential Coverage Obligation			
FHCF Coverage Obligation	(A)	\$17.0	\$17.0
FHCF Estimated Funding Sources Available			
Projected FHCF Year-End Fund Balance	(B)	\$3.7	\$1.5
Risk Transfer	(C)	\$0.0	\$0.0
Pre-Event Bond Proceeds Available <sup>1</sup>	(D)	\$3.5	\$2.3
Total Liquid Resources Available	(B + C + D ) = (E)	\$7.2	\$3.8
Additional Funds / Potential Borrowing Need	(E - A) = (F)	(\$9.8)	(\$13.2)
FHCF Claims-Paying Capacity			
Projected FHCF Year-End Fund Balance	(B)	\$3.7	\$1.5
Risk Transfer	(C)	\$0.0	\$0.0
Estimated FHCF Borrowing Capacity <sup>1</sup>	(G)	\$8.6	\$8.6
Total Estimated Claims-Paying Capacity	(B + C + G) = (H)	\$12.3	\$10.1
Total Estimated Claims-Paying Capacity as a % of FHCF (	Coverage Obligation		
(H / A) = (I)		72%	60%
Amount Above / (Below) Coverage Obligation			
(H - A) = (J)		(\$4.7)	(\$6.9)

<sup>&</sup>lt;sup>1</sup> Estimated borrowing capacity is inclusive of any repayment of pre-event bond proceeds. Pre-event bonds are available as a liquidity resource for the 2023-2024 Contract Year in the amount of \$3.5 billion, but we are assuming no pre-event bonds will be used to pay claims for 2023-2024 and if needed, post-event bonds will be issued in place of the pre-event bond proceeds.

The breakdown of the potential assessments required for the FHCF's potential borrowing needs and repayment of pre-event bond proceeds are shown in the table below based on an interest rate of 7% for the initial season and 9% for the subsequent season over a 30-year period, for informational purposes only.

	2023-2024	2024-2025
(\$ in Billions)	Contract Year <sup>1</sup>	Contract Year <sup>2</sup>
Total Potential Borrowing	\$12.1	\$8.6
Assessment % over 30 Years if Financed at a Rate of 7% for the Initial Season	1.33%	1.14%
and 9% for the Subsequent Season		
Assessment % over 10 Years if Financed at a Rate of 7% for the Initial Season	2.32%	1.80%
and 9% for the Subsequent Season		

<sup>&</sup>lt;sup>1</sup> The potential borrowing for the 2023-2024 Contract Year is shown as the 0-12 month estimated bonding capacity of \$8.6 billion and the assessments required to repay the pre-event bond proceeds of \$3.5 billion. The actual assessment amount of repaying the pre-event bond proceeds will depend on the tenor of repayment, which is based on the maturity of the pre-event bonds.

#### Historical Perspective on Estimated Claims-Paying Capacity

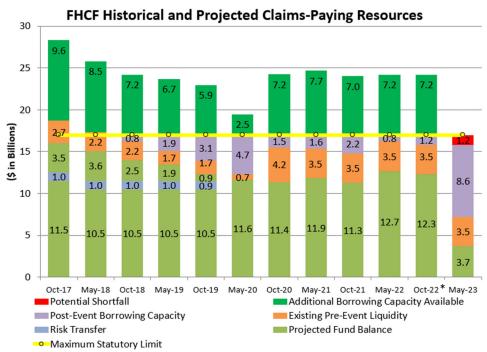
The estimated claims-paying capacity of the FHCF over time is subject to changes in the projected fund balance, risk transfer amount, available pre-event liquidity, and estimates of bonding capacity. While the projected fund balance climbed steadily from 2006 to 2017 without a major hurricane that triggered the FHCF, Hurricane Irma, Michael and Ian losses have reduced the FHCF's projected fund balance to approximately \$3.7 billion available for the 2023-2024 Contract Year. In recent years, the senior managers'

 $<sup>^2</sup>$  The potential borrowing for the 2024-2025 Contract Year is shown as the 0-12 month estimated bonding capacity of \$8.6 billion.



estimate ranges of the FHCF's bonding capacity have remained stable, but due to volatility in the marketplace, the senior managers' estimates for May 2023 are diverse, reflecting both the big picture fundamental changes to the market described in Section III and the impact of market volatility at the time we asked them for estimates. The October 2022 average bonding estimate for 0-12 months was \$8.4 billion and the May 2023 average bonding estimate for 0-12 months has marginally increased to \$8.6 billion.

The chart below shows the total estimated initial season claims-paying resources of the FHCF since October 2017 with projected fund balance (light green), existing pre-event liquidity (orange), risk transfer (blue), post-event borrowing capacity (purple), if needed, and maximum statutory limit (yellow) with additional borrowing capacity available above (dark green) and potential shortfall (red).



Numbers may not add due to rounding.

The additional capacity above the maximum statutory limit reflects the estimated borrowing capacity plus any additional funds available.

This chart reflects the history of the FHCF's claims-paying resources. The outstanding pre-event bonds, risk transfer, and the projected fund balance are reliable amounts since they are known prior to an event, but the post-event bonding capacity can vary depending on financial market conditions after a hurricane event. It is important that the FHCF's claims-paying capacity estimates be reasonable and prudent in order to minimize financial risk for participating insurers for the initial and subsequent seasons as well as for long-term sustainability of the Florida residential property insurance market even under the current volatile market conditions.

<sup>\*</sup> October 2022 projected fund balance is prior to Hurricane Ian's projected loss reserve of \$10 billion.



It is interesting to compare the range of the estimates during this time period, which is indicative of the level of uncertainty and variability among the team of senior managers with regard to the FHCF's bonding capacity. The table below shows the aggregate ranges for each estimate since October 2019.

Post-Event Estimated Bonding Capacity Over 12 Months (Senior Managers' Range)									
(A :	0.1.40		0.1.20		0.1.24		0.1.22		Oct. 2022 - May
(\$ in Billions)	Oct-19	May-20	Oct-20	May-21	Oct-21	May-22	Oct-22	May-23	2023 Change
Overall Range	\$5.5-\$12	\$4-\$11	\$6.5-\$11	\$5.5-\$13	\$5.5-\$13	\$4.5-\$13	\$4.5-\$13	\$4.5-\$13	<b>∜</b> ·>

We believe the process of using a survey of the opinions of the best experts with the most relevant experience and employing a prudent approach to pick among several potential estimates of capacity, provides a reasonable estimate that suits the purposes of the FHCF and the needs of its participating insurers. The FHCF has liquid resources that are significantly below its statutory limit for the subsequent season. The projected 0-12 month bonding capacity of \$8.6 billion allows for the FHCF to fund a portion of its maximum statutory obligation, but additional funding sources would be needed to fund its statutory limit of \$17 billion for the 2023-2024 Contract Year. This assumes the FHCF would need to bond within 12 months, which is conservative, as the FHCF would likely have more time for additional bonding based on the timing of reimbursement payments following prior covered events. While the FHCF has additional bonding capacity from 12-24 months available, this projected additional capacity is subject to greater uncertainty and does not provide a guaranteed source of liquidity or claims-paying capacity. Therefore, the actual bonding results achieved by the FHCF could vary substantially from this estimate. The FHCF can take advantage of the capital markets by issuing pre-event bonds or utilizing other alternative options to reduce its potential post-event market exposure and bolster its available liquidity, which could allow the FHCF to continue to be stable and sustainable towards its mission to provide strong reimbursement capacity to the Florida property insurance market for both the initial and subsequent season.

# Appendix A – Bonding Capacity Solicitation & Senior Manager Responses



#### Memorandum

To: Florida Hurricane Catastrophe Fund

From: BofA Securities, Inc.

**Date:** April 24, 2023

**Subject:** Florida Hurricane Catastrophe Fund – May 2023 Bonding Capacity Analysis

BofA Securities, Inc. ("BofA") is pleased to provide the Florida Hurricane Catastrophe Fund ("FHCF" or the "Fund") with our firm's estimates and views of the FHCF's post-event bonding capacity and current market borrowing costs.

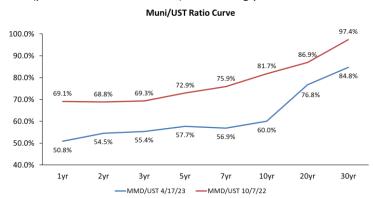
Our assessment of investor appetite for an FHCF offering (or offerings) has not changed since October 2022, and we believe total unconstrained issuance capacity remains at levels we presented in October 2022. However, since our last update to FHCF, taxable spreads have decreased approximately 5-40 bps for longer maturities (10-years and longer) and tax-exempt spreads have widened 5-23 bps in the same part of the curve (average of 11 bps from years 10-20). These levels are a function largely of overall technical factors in the broader fixed income markets (as discussed below) and are not a reflection of the Fund's credit or standing with investors.

#### **Market Commentary**

Macro themes from October 2022 continue to persist during the first quarter of 2023, with the added disruption of March's banking sector problems. While the relatively soft March CPI print was a step in the right direction, it is still a very long road to price stability. A recession is still nowhere near despite all the chatter in the market. The March FOMC minutes signal significant uncertainty about the economic outlook and a meeting-by-meeting approach to rate hikes. Given the easing of bank stress since the March meeting, BofA expect the Federal Reserve ("Fed") to deliver one more 25 bp rate increase in May. While tightening bank lending is a concern for economic performance later this year, economic data released over the past few weeks, especially the March employment report, continue to show a picture of resilience.

For municipals, range bound Treasuries are generally very positive for the market, especially when compared to the very volatile macro environment in March. Unlike Treasuries, tax-exempt AAA MMD rates have broken below the ranges from March, with the 10-year AAA MMD fast approaching 2.0% (prior to the cuts last week). Interestingly, the tax season effect

has had no bearing on the municipal market — neither the short or longer maturities. BofA believes the lack of a money market effect during this year's tax season reflects two facts about investors: (1) there were not much capital gains in 2022 due to a dismal stock market and bond market returns; and (2) they are already holding abundant taxable money market assets in their portfolios. For long-term municipal bonds, macro market and supply/demand conditions are dominating the picture, pushing the high grade



municipal market to relatively rich valuation versus Treasuries. Last week, municipals saw a sizable rise of AAA MMD yields across the curve. We believe very rich muni/Treasury ratios (which continue to remain rich at current levels) are the main catalyst, while the persistent Treasury market selloff, municipal mutual fund outflows and a large municipal new issuance calendar last week also contributed. Once the range bound Treasury yields selloff ends, municipal yields should decline again.

On the supply side, issuance totaled just \$76 billion during 1Q23, which was down 27% y/y. This was the result of significantly lower new money and refunding volumes during the quarter. New money volumes were down 21% y/y and

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Florida Hurricane Catastrophe Fund – May 2023 Bonding Capacity Analysis April 24, 2023

unchanged q/q, while refunding volumes were down 45% y/y and up 4% q/q. BofA cut 2023 issuance forecast from \$500 billion to \$400 billion. On the demand side, BofA estimated principal redemption and coupon payments in 2Q23 total to \$142 billion, significantly higher than 1Q23. Municipal funds saw inflows during the first quarter, reaching \$5 billion, and coming predominately from long-term funds. Overall, investment grade municipal inflows totaled \$2.9 billion compared to high yield inflows of \$2.1 billion during 1Q23. In 1Q23, \$700 billion of municipal par value traded in the secondary market, with an average daily volume of \$11 billion (down 18% q/q, but up nearly 5% y/y). It is important to note that over the coming weeks, the Federal Deposit Insurance Corporation will be liquidating the securities portfolios retained from the two receiverships (Signature Bank and Silicon Valley Bank), with face values of approximately \$27 billion and \$87 billion, respectively. We expect approximately \$7 billion of municipal assets (the majority with coupons of 3% or lower) to enter the market as "shadow supply" as early as next week. This has the potential to create some short-term volatility in the market.

As we have noted in the past, a transaction or series of transactions by the FHCF and possibly other insurance-related entities in the State (e.g. Citizens, FIGA) after a hurricane event have been generally untested and may significantly impact market dynamics for a specific transaction. In the pages that follow, we provide BofA's estimate of the FHCF's current borrowing costs, as well as our view on the FHCF's unconstrained issuance capacity in the current market. If you have any questions, please contact the BofA team.



1. Please provide a 30-year tax-exempt scale for the FHCF using the MMD at the close of business Monday, April 17th. This scale should be the one that you believe reflects a "market" scale given the FHCF's strong credit with no capacity constraints. Please use serial bonds and 15, 20, 25, and/or 30-year term bonds, as needed, over a 30-year amortization period (7/1/24 - 7/1/53) with premium coupons throughout when writing the scale. Base your scale on an uninsured financing given the FHCF's strong current underlying ratings of Aa3/AA/AA (Moody's / S&P / Fitch).

Below, we have provided a 30-year tax-exempt scale reflecting our view of the FHCF's estimated current market borrowing costs based on an uninsured financing, Aa3/AA/AA ratings from Moody's, S&P and Fitch, respectively, and no capacity constraints.

Tax-Exempt Scale							
		Premium					
Term	Maturity (July 1)	Coupon	MMD	Spread	Yield		
1	2024	5.000%	2.440%	10 bps	2.540%		
2	2025	5.000%	2.280%	15 bps	2.430%		
3	2026	5.000%	2.170%	20 bps	2.370%		
4	2027	5.000%	2.130%	25 bps	2.380%		
5	2028	5.000%	2.130%	30 bps	2.430%		
6	2029	5.000%	2.100%	35 bps	2.450%		
7	2030	5.000%	2.070%	40 bps	2.470%		
8	2031	5.000%	2.100%	45 bps	2.550%		
9	2032	5.000%	2.130%	50 bps	2.630%		
10	2033	5.000%	2.160%	55 bps	2.710%		
11	2034	5.000%	2.240%	60 bps	2.840%		
12	2035	5.000%	2.370%	65 bps	3.020%		
13	2036	5.000%	2.540%	70 bps	3.240%		
14	2037	5.000%	2.680%	75 bps	3.430%		
15	2038	5.000%	2.770%	77 bps	3.540%		
16	2039	5.000%	2.810%	80 bps	3.610%		
17	2040	5.000%	2.900%	83 bps	3.730%		
18	2041	5.000%	2.930%	85 bps	3.780%		
19	2042	5.000%	2.960%	85 bps	3.810%		
20	2043	5.000%	3.010%	85 bps	3.860%		
21	2044		3.050%				
22	2045		3.070%				
23	2046		3.120%				
24	2047		3.150%				
25	2048	5.000%	3.180%	88 bps	4.060%		
26	2049		3.190%				
27	2050		3.200%				
28	2051		3.210%				
29	2052		3.220%				
30	2053	5.000%	3.230%	90 bps	4.130%		



2. Please provide a 30-year taxable scale using the Treasury curve at the close of business Monday, April 17th. This scale should be the one that you believe reflects a "market" scale given the FHCF's strong credit with no capacity constraints. Please use serial bonds and 15, 20, 25, and/or 30-year term bonds, as needed, over a 30-year amortization period (7/1/24 - 7/1/53) with par-ish coupons throughout when writing the scale. Again, base the scale on an uninsured financing given again the FHCF's current underlying ratings of Aa3/AA/AA (Moody's / S&P / Fitch).

Below, we have provided a 30-year taxable scale reflecting our view of the FHCF's estimated current market borrowing costs based on an uninsured financing, Aa3/AA/AA ratings from Moody's, S&P and Fitch, respectively, and no capacity constraints.

	Taxable Scale							
Term	Maturity (July 1)	Coupon	UST	Spread	Yield			
1	2024	4.580%	4.180%	40 bps	4.580%			
2	2025	4.680%	4.180%	50 bps	4.680%			
3	2026	4.470%	3.920%	55 bps	4.470%			
4	2027	4.340%	3.690%	65 bps	4.340%			
5	2028	4.440%	3.690%	75 bps	4.440%			
6	2029	4.490%	3.640%	85 bps	4.490%			
7	2030	4.540%	3.640%	90 bps	4.540%			
8	2031	4.600%	3.600%	100 bps	4.600%			
9	2032	4.700%	3.600%	110 bps	4.700%			
10	2033	4.800%	3.600%	120 bps	4.800%			
11	2034	4.900%	3.600%	130 bps	4.900%			
12	2035	5.000%	3.600%	140 bps	5.000%			
13	2036	5.100%	3.600%	150 bps	5.100%			
14	2037	5.200%	3.600%	160 bps	5.200%			
15	2038	5.250%	3.600%	165 bps	5.250%			
16	2039							
17	2040							
18	2041							
19	2042							
20	2043	5.460%	3.810%	165 bps	5.460%			
21	2044							
22	2045							
23	2046							
24	2047							
25	2048	5.510%	3.810%	170 bps	5.510%			
26	2049							
27	2050							
28	2051							
29	2052							
30	2053	5.560%	3.810%	175 bps	5.560%			



3. Please provide us with your firm's opinion on the potential tax-exempt and/or taxable post-event market capacity over the next 0-12 <u>and</u> 12-24 months at rates that are at or above the current "market" scale, as needed. In addition, please include and describe briefly in your response if there is any overlap in tax-exempt / taxable capacity.

In the table below, we have provided our current tax-exempt and taxable FHCF capacity estimates at rates that are at or above the current "market" scale, as needed. We believe that sufficient demand exists at these capacity levels to complete a transaction of the sizes provided below. In the current market, we have observed an increase in crossover participation and the likelihood of some cannibalization between tax-exempt/taxable capacity.

FLORIDA HURRICANE CATASTROPHE FUND POST-EVENT MARKET CAPACITY (\$ BILLION)								
Time Period	Time Period Tax-Exempt Taxable Total							
0-12 Months	\$1.5-2.0	\$3.0-5.0	\$4.5-7.0					
12-24 Months	\$2.0-3.0	\$3.0-5.0	\$5.0-8.0					
0-24 Months	\$3.5-5.0	\$6.0-10.0	\$9.5-15.0					

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#### Memorandum



To: Florida Hurricane Catastrophe Fund

From: Citigroup Global Markets Inc. ("Citi")

Date: April 24, 2023

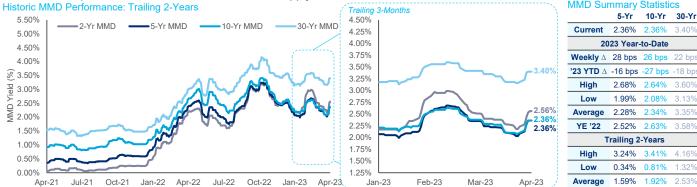
Re: FHCF April 2023 Capacity Analysis

Citigroup is pleased to provide the Florida Hurricane Catastrophe Fund (the "FHCF") with updated estimates and analysis of the FHCF's post-event bonding capacity.

In the wake of Hurricane Ian and with escalating reinsurance costs, the FHCF may benefit from issuing pre-event bonds to reduce potential post-event market exposure and boost available liquidity. Our scale and capacity estimates reflect the fundamental strengths of the FHCF credit, which include a strong current capital position and claims paying capacity, a broad assessment base and an experienced leadership team. We maintain our view that the FHCF would continue to have tremendous market access based on a positive historical repayment for bond holders.

Municipal Market Update. As was the case in 2022, the 2023 market environment to date has been characterized by financial market volatility, inflation and rising rates. Recent municipal market developments include a ninth consecutive rate hike by the Federal Open Market Committee ("FOMC") to curb heightened inflation despite recent bank failures, light new issue supply, mixed mutual fund flows with a flight to quality, and municipals and treasuries generally moving lower in yield in 2023. Throughout 2023, the Treasury yield curve continues to be inverted, while the municipal yield curve has observed flattening, with some inversion on the short end of the curve. For the week of April 17, 2023, rich ratios, along with steady fund outflows, and a Treasury selloff drove MMD higher across the curve. Still the 10-, 20- and 30-year MMD rates are down -27bps, -19bps, and -18bps, respectively, year-to-date and yields remain relatively attractive on the intermediate to long-end from a historical context despite volatility and weakening coming out of 2022. The broader decline in interest rates across the curve has allowed longer maturities to outperform shorter maturities during the first quarter of 2023. Outflows set all-time records in 2022, with recorded outflows of \$121.6 billion for all funds. For 2023, municipal mutual fund flows have been mixed with high yield funds benefitting from inflows while buyers are still cautious following historic outflows in 2022. While fund flows observed inflows in January, weekly reporting municipal funds recorded outflows of \$2.9 billion for the week ending April 19, 2023, with 2023 year-to-date weekly and monthly reporting outflows totaling \$5.8 billion.

MMD Has Responded to Rich UST Relative Value, Supply, Fund / Reinvest Flows, Bid Lists, Economic Data and Fed Guidance



**Yield Curve Environment.** The FOMC has increased the federal funds rate from nearly zero in March 2022 to a range of 4.75% to 5%. Although at its most recent March 2023 meeting the FOMC announced a rate hike of another 25 bps, the failures of SVB have changed the market's perception of how much the Fed will continue to hike rates to combat inflation. The futures market is pricing in a 51% chance that the Fed will cut rates at least 50 bps before year-end. In contrast, the FOMC "Dot-Plot" is projecting one more rate hike and remaining at the 5.00% - 5.25% range to end of year. This creates for a 75-100 bps difference in the Fed's year-end target range compared to market expectations. It will be important to monitor what will have to unfold for this gap to tighten.

US Treasury Yield Curve

The treasury curve has flattened significantly in recent months amic





1. Please provide a 30-year tax-exempt scale for the FHCF using the MMD at the close of business Monday, April 17th. This scale should be the one that you believe reflects a "market" scale given the FHCF's strong credit with no capacity constraints. Please use serial bonds and 15, 20, 25, and/or 30-year term bonds, as needed, over a 30-year amortization period (7/1/24 - 7/1/53) with premium coupons throughout when writing the scale. Base your scale on an uninsured financing given the FHCF's strong current underlying ratings of Aa3/AA/AA (Moody's / S&P / Fitch).

Tax-Exempt Scale								
	04/17/2023	MMD		Base				
Year	MMD	Spread	Coupon	Yield				
2024	2.44%	15	5.00%	2.59%				
2025	2.28%	20	5.00%	2.48%				
2026	2.17%	25	5.00%	2.42%				
2027	2.13%	30	5.00%	2.43%				
2028	2.13%	35	5.00%	2.48%				
2029	2.10%	40	5.00%	2.50%				
2030	2.07%	45	5.00%	2.52%				
2031	2.10%	50	5.00%	2.60%				
2032	2.13%	55	5.00%	2.68%				
2033	2.16%	60	5.00%	2.76%				
2034	2.24%	70	5.00%	2.94%				
2035	2.37%	75	5.00%	3.12%				
2036	2.54%	75	5.00%	3.29%				
2037	2.68%	75	5.00%	3.43%				
2038	2.77%	75	5.00%	3.52%				
2039	2.81%	75	5.00%	3.56%				
2040	2.90%	75	5.00%	3.65%				
2041	2.93%	75	5.00%	3.68%				
2042	2.96%	75	5.00%	3.71%				
2043	3.01%	75	5.00%	3.76%				
2044	3.05%							
2045	3.07%							
2046	3.12%							
2047	3.15%							
2048	3.18%	80	5.00%	3.98%				
2049	3.19%							
2050	3.20%							
2051	3.21%							
2052	3.22%							
2053	3.23%	80	5.00%	4.03%				

<sup>1.</sup> July Interpolated MMD.

<sup>2.</sup> Assumes a 10-year par call.



2. Please provide a 30-year taxable scale using the Treasury curve at the close of business Monday, April 17th. This scale should be the one that you believe reflects a "market" scale given the FHCF's strong credit with no capacity constraints. Please use serial bonds and 15, 20, 25, and/or 30-year term bonds, as needed, over a 30-year amortization period (7/1/24 - 7/1/53) with par-ish coupons throughout when writing the scale. Again, base the scale on an uninsured financing given again the FHCF's current underlying ratings of Aa3/AA/AA (Moody's / S&P / Fitch).

Taxable Scale							
		04/17/2023					
Year	TSY	TSY	Spread	Coupon	Yield		
2023	2 Yr	4.18%	40	4.58%	4.58%		
2024	2 Yr	4.18%	45	4.63%	4.63%		
2025	3 Yr	3.92%	75	4.67%	4.67%		
2026	5 Yr	3.69%	105	4.74%	4.74%		
2027	5 Yr	3.69%	110	4.79%	4.79%		
2028	7 Yr	3.64%	120	4.84%	4.84%		
2029	7 Yr	3.64%	125	4.89%	4.89%		
2030	10 Yr	3.60%	135	4.95%	4.95%		
2031	10 Yr	3.60%	140	5.00%	5.00%		
2032	10 Yr	3.60%	145	5.05%	5.05%		
2033							
2034							
2035							
2036							
2037	10 Yr	3.60%	190	5.50%	5.50%		
2038							
2039							
2040							
2041							
2042	30 Yr	3.81%	180	5.61%	5.61%		
2043							
2044							
2045							
2046							
2047							
2048							
2049							
2050							
2051							
2052	30 Yr	3.81%	185	5.66%	5.66%		

<sup>1.</sup> Assumes a make-whole call.



3. Please provide us with your firm's opinion on the potential tax-exempt and/or taxable post-event market capacity over the next 0-12 and 12-24 months at rates that are at or above the current "market" scale, as needed. In addition, please include and describe briefly in your response if there is any overlap in tax-exempt / taxable capacity.

**FHCF Post-Event Market Capacity (\$B)** 

			<u>·                                      </u>
<b>Time Period</b>	Tax-Exempt	Taxable	Total
0-12 Months	\$2.0-\$3.5	\$4.0-\$5.5	\$6.0-\$9.0
12-24 Months	\$2.5-\$4.0	\$4.0-\$5.5	\$6.5-\$9.5
Total	\$4.5-\$7.5	\$8.0-\$11.0	\$12.5-\$18.5

Our capacity numbers assume no overlap between the tax-exempt and taxable sectors.



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To: Florida Hurricane Catastrophe Fund

From: J.P. Morgan Date: May 24, 2023

Subject: FHCF Estimated Bonding Capacity and Pricing

Please find below J.P. Morgan's estimate of the Florida Hurricane Catastrophe Fund's ("FHCF") potential bonding capacity over the next 0-12 and 12-24 months, based on current market conditions. In addition, we have provided indicative pricing for tax-exempt and taxable offerings, as requested.

#### **Market Update**

- Last week's market correction was not a complete surprise as munis entered the week extremely rich, expecting the highest tax-exempt supply since mid-November 2021, coupled with the pending SVB/Signature Bank portfolio sales, and muni fund outflows. 2-5-10-30yr AAA muni rates rose by 33-28-26-22bps, lagging taxable fixed-income by 18-24bps across the curve.
- After a very difficult start to the week, by Thursday, tax-exempt customer purchases picked up as bargain hunters drove a
  17% increase in buying in 5-10yrs and cheaper 20yr+ areas of the curve. Buying in 0-5yrs and still rich 10-20yr portions of
  the curve was still lower on Thursday, however, at 1-6% below the same day average.
- Despite the late week pickup in aggregate volume, overall going away business was down 15% and showed the largest drops of 25% and 17% in 10–20yrs and 20yrs+, respectively. Week to date bidwanted volume was only slightly (+6%) higher in aggregate, but with a 19% jump in the richest 0-5yr portion of the curve, while down by 11% in the cheapest 20yr+ portion of the market.
- Economic data was mixed last week, including confounding manufacturing prints (Empire State survey surprised significantly to the upside, while the Philadelphia Fed headline fell more than expected). Several data prints pointed to further signs of stabilization in the housing market. Initial claims increased but the labor market still appears strong.
- Our rates team maintains 10-30s steepeners, sees near-term risks to higher rates, but remains neutral. Their current projections put the x-date for the debt ceiling agreement around mid-August, although, risks skew earlier.
- We expect this week's muni supply to total \$9.3bn, close to the 5yr equiv avg. We anticipate tax-exempt supply of \$8.4bn (105% of the avg, 3rd highest of year) and taxable/corp cusip supply of \$868mn (64% of the avg).
- Lipper reported combined weekly and monthly outflows of \$2.9bn for the period ending April 19, driving YTD outflows to \$5.8bn. We find weekly outflows to be \$1.1bn after removing reporting errors for the week.

#### **Potential Market Capacity**

Based on market conditions as of close of business April 17, 2023, J.P. Morgan estimates that FHCF could sell \$5-6 billion of tax-exempt bonds and \$6-7 billion of taxable bonds over the next 0-12 months at the market rate assumptions provided. Over the following 12-24 month

Indicative Post-Event Market Capacity as of April 17, 2023							
Time Period	Tax-Exempt	Taxable	Total				
0-12 Months	\$5-6 billion	\$6-7 billion	\$11-13 billion				
12-24 Months	\$5-6 billion	\$6-7 billion	\$11-13 billion				
Total	\$10-12 billion	\$12-14 billion	\$22-26 billion				

period, FHCF could sell an additional \$5-6 billion of tax-exempt bonds and \$6-7 billion of taxable bonds. This would provide FHCF a total post-event market capacity of \$10-12 billion tax-exempt and \$12-14 billion taxable, for a total of \$22-26 billion.

In order to accomplish an issuance of maximum size, FHCF would likely want to access both the tax-exempt and taxable markets across one or more offerings. Although the post-event bonds would qualify for tax-exemption, the taxable markets may provide additional depth of institutional buyers. By issuing taxable bonds in addition to tax-exempt bonds, FHCF would access certain investors that do not typically participate in tax-exempt offerings, and are not able to use the tax-exemption of municipal bonds. FHCF would likely see a significant increase in capacity by offering both a tax-exempt and taxable series as part of the same issuance, with the ultimate goal being to maximize the tax-exempt issuance. The capacity estimates above do consider the capacity overlap from investors that participate in both the tax-exempt and taxable markets, while prioritizing tax-exempt capacity over taxable.

On the following pages, please find J.P. Morgan's estimated 30-year tax-exempt and taxable scales assuming market conditions as of the close of business April 17, 2023. The scales assume FHCF's current underlying ratings of Aa3/AA/AA and \$3 billion transaction size.

Florida Hu	urricane Cata	astrophe Fund	- Tax-Exemp	t Scale		
Year	Maturity	Sinker/Term	Int. MMD	Spread	Coupon	Stated Yield
1	7/1/2024		2.44%	25	5.00%	2.69%
2	7/1/2025		2.28%	30	5.00%	2.58%
3	7/1/2026		2.17%	34	5.00%	2.51%
4	7/1/2027		2.13%	37	5.00%	2.50%
5	7/1/2028		2.13%	40	5.00%	2.53%
6	7/1/2029		2.10%	44	5.00%	2.54%
7	7/1/2030		2.07%	47	5.00%	2.54%
8	7/1/2031		2.10%	50	5.00%	2.60%
9	7/1/2032		2.13%	53	5.00%	2.66%
10	7/1/2033		2.16%	55	5.00%	2.71%
11	7/1/2034		2.24%	58	5.00%	2.82%
12	7/1/2035		2.37%	60	5.00%	2.97%
13	7/1/2036		2.54%	63	5.00%	3.17%
14	7/1/2037		2.68%	65	5.00%	3.33%
15	7/1/2038		2.77%	68	5.00%	3.45%
16	7/1/2039		2.81%	70	5.00%	3.51%
17	7/1/2040		2.90%	70	5.00%	3.60%
18	7/1/2041		2.93%	70	5.00%	3.63%
19	7/1/2042		2.96%	70	5.00%	3.66%
20	7/1/2043		3.01%	70	5.00%	3.71%
21	7/1/2044	*				
22	7/1/2045	*				
23	7/1/2046	*				
24	7/1/2047	*				
25	7/1/2048	Т	3.18%	75	5.00%	3.93%
26	7/1/2049	*				
27	7/1/2050	*				
28	7/1/2051	*				
29	7/1/2052	*				
30	7/1/2053	Т	3.23%	80	5.00%	4.03%

Assumes MMD as of close of business April 17, 2023, an optional redemption date of 7/1/2033 at par and \$3 billion transaction size.

Florida Hu	urricane Cata	astrophe Fund -	Taxable So	cale		
Year	Maturity	Sinker/Term	UST	Spread	Coupon	Stated Yield
1	7/1/2024		4.19%	75	4.94%	4.94%
2	7/1/2025		4.19%	65	4.84%	4.84%
3	7/1/2026		3.91%	80	4.71%	4.71%
4	7/1/2027		3.69%	100	4.69%	4.69%
5	7/1/2028		3.69%	105	4.74%	4.74%
6	7/1/2029		3.64%	115	4.79%	4.79%
7	7/1/2030		3.64%	120	4.84%	4.84%
8	7/1/2031		3.59%	130	4.89%	4.89%
9	7/1/2032		3.59%	135	4.94%	4.94%
10	7/1/2033		3.59%	140	4.99%	4.99%
11	7/1/2034		3.59%	145	5.04%	5.04%
12	7/1/2035		3.59%	150	5.09%	5.09%
13	7/1/2036		3.59%	155	5.14%	5.14%
14	7/1/2037		3.59%	160	5.19%	5.19%
15	7/1/2038		3.59%	165	5.24%	5.24%
16	7/1/2039	*				
17	7/1/2040	*				
18	7/1/2041	*				
19	7/1/2042	*				
20	7/1/2043	Т	3.92%	145	5.37%	5.37%
21	7/1/2044	*				
22	7/1/2045	*				
23	7/1/2046	*				
24	7/1/2047	*				
25	7/1/2048	*				
26	7/1/2049	*				
27	7/1/2050	*				
28	7/1/2051	*				
29	7/1/2052	*				
30	7/1/2053	Т	3.80%	165	5.45%	5.45%

Assumes UST as of close of business April 17, 2023, a make-whole call and \$3 billion transaction size.

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### Memorandum

To: Florida Hurricane Catastrophe Fund Date: April 24, 2023

From: Morgan Stanley

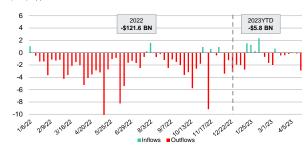
Subject: FHCF May 2023 Semi-Annual Bonding Capacity Analysis

Morgan Stanley is pleased to provide the Florida Hurricane Catastrophe Fund ("FHCF") with our Firm's Semi-Annual Bonding Capacity Analysis.

**Current Macroeconomic Themes.** Key economic data points show signs of moderating inflation, which has led to improving market sentiment. March CPI came in a tick below expectations the week ending April 14th, as headline inflation declined to 5.0% year-over-year, down from last month's 6.0% number. PPI also came in weaker than expected (up 0.1% on the month) and U.S. retail sales for March fell for the second month in a row (down 1%). Fed speakers have diverged on the central bank's next move, with conflicting language from various Fed presidents. Both the S&P manufacturing and services PMI indices saw sharp recoveries this month, with composite levels climbing to nearly oneyear highs - manufacturing activity expanded for the first time since October, coming at 50.4 (vs. est. 49) while the services PMI jumped to an annual high of 53.7 (vs. est. 51.7). Market reactions on Friday were relatively muted despite the strong economic data, however markets are now pricing in a ~90% of a May rate hike vs. ~80% the week prior. Morgan Stanley currently expects the Fed to deliver a 25bps hike at the May FOMC meeting raising the fed rate to a peak rate of 5.00%- 5.25% with the next cut expected in 1Q24. Previous fears of a banking crisis contagion sparked by the failure of Silicon Valley Bank and the acquisition of Credit Suisse have subsided on reports that the drain of deposits from smaller banks into larger financial institutions have slowed and the Biden administration's proposal to strengthen oversight and regulation for banks with assets in the \$100-\$250 billion range.

# MMD and UST Movement 2023YTD Bps; January 3, 2023- April 17, 2023 0 -5 -10 -15 -20 -25 -30 -35 -40 5Y 10Y 30Y

Muni Mutual Funds Experience \$5.8BN Of Outflows YTD (\$BN) Lipper Fund Flows 2022-2023YTD



Muni Exchange Traded Funds Have Seen \$520MM of Inflows YTD



Municipal Market Dynamics. Market conditions this year

continue to be marked by gradual declines in both benchmark AAA MMD and Treasury rates with 10-year MMD and 10-year US treasury rates declining by 24 bps and 22bps on the year, respectively as market participants continue to react to economic releases which suggest the slowing and cooling of the economy. However, the market has changed course over the last two weeks as both Treasuries and Muni rates have sold off 20-30 bps after nearing year-to-date lows. Fund flows in the muni market remain somewhat challenged, with year-to-date mutual fund outflows totaling \$5.8 billion and muni ETF inflows of \$520 million year-to-date. However, this is balanced by overall issuance volume, which is down 21% year-over-year at \$102 billion. Specific to the taxable market, muni taxable issuance is at \$13 billion year-to-date which is down 38% versus 2022 and 64% versus 2021 as taxable advance refundings remain out of the money. While issuance has been moderate at best, there have been large weeks of issuance (topping out at \$13.2 billion the week of March 10<sup>th</sup>) that have been digested well by the market.

**Pricing Views.** On the following pages, we have provided our estimate of current pricing levels and bonding capacity over a 0-12 month and 12-24 month period.

1. Please provide a 30-year tax-exempt scale for the FHCF using the MMD at the close of business Monday, April 17th. This scale should be the one that you believe reflects a "market" scale given the FHCF's strong credit with no capacity constraints. Please use serial bonds and 15, 20, 25, and/or 30-year term bonds, as needed, over a 30-year amortization period (7/1/24 - 7/1/53) with premium coupons throughout when writing the scale. Base your scale on an uninsured financing given the FHCF's strong current underlying ratings of Aa3/AA/AA (Moody's / S&P / Fitch).

FHCF Pricing Views: 30-Year Tax-Exempt Scale <sup>1</sup>						
Year	Maturity	MMD (4/17/2023)	Spread (bps) <sup>1</sup>	Coupon	Yield	
1	2024	2.44%	22	5.00%	2.66%	
2	2025	2.28%	25	5.00%	2.53%	
3	2026	2.17%	27	5.00%	2.44%	
4	2027	2.13%	30	5.00%	2.43%	
5	2028	2.13%	32	5.00%	2.45%	
6	2029	2.10%	35	5.00%	2.45%	
7	2030	2.07%	38	5.00%	2.45%	
8	2031	2.10%	40	5.00%	2.50%	
9	2032	2.13%	42	5.00%	2.55%	
10	2033	2.16%	45	5.00%	2.61%	
11	2034	2.24%	48	5.00%	2.72%	
12	2035	2.37%	50	5.00%	2.87%	
13	2036	2.54%	52	5.00%	3.06%	
14	2037	2.68%	55	5.00%	3.23%	
15	2038	2.77%	60	5.00%	3.37%	
16	2039	2.81%	65	5.00%	3.46%	
17	2040	2.90%	65	5.00%	3.55%	
18	2041	2.93%	65	5.00%	3.58%	
19	2042	2.96%	65	5.00%	3.61%	
20	2043	3.01%	65	5.00%	3.66%	
21	2044					
22	2045					
23	2046					
24	2047					
25	2048	3.18%	70	5.00%	3.88%	
26	2049					
27	2050					
28	2051					
29	2052					
30	2053	3.23%	75	5.00%	3.98%	

Notes:

<sup>(1)</sup> Assumes 10-year par call on 7/1/2033

<sup>(2)</sup> Based on July Interpolated MMD on 4/17/2023

2. Please provide a 30-year taxable scale using the Treasury curve at the close of business Monday, April 17th. This scale should be the one that you believe reflects a "market" scale given the FHCF's strong credit with no capacity constraints. Please use serial bonds and 15, 20, 25, and/or 30-year term bonds, as needed, over a 30-year amortization period (7/1/24 - 7/1/53) with par-ish coupons throughout when writing the scale. Again, base the scale on an uninsured financing given again the FHCF's current underlying ratings of Aa3/AA/AA (Moody's / S&P / Fitch).

FHCF Pricing Views: 30-Year Taxable Scale <sup>1</sup>							
Year	Maturity	UST (4/17/2023)	Spread (bps)	Coupon	Yield		
1	2024	4.19%	40	4.59%	4.59%		
2	2025	4.19%	50	4.69%	4.69%		
3	2026	3.91%	75	4.66%	4.66%		
4	2027	3.69%	90	4.59%	4.59%		
5	2028	3.69%	100	4.69%	4.69%		
6	2029	3.64%	105	4.69%	4.69%		
7	2030	3.64%	115	4.79%	4.79%		
8	2031	3.59%	120	4.79%	4.79%		
9	2032	3.59%	125	4.84%	4.84%		
10	2033	3.59%	130	4.89%	4.89%		
11	2034	3.59%	140	4.99%	4.99%		
12	2035	3.59%	150	5.09%	5.09%		
13	2036	3.59%	155	5.14%	5.14%		
14	2037	3.59%	160	5.19%	5.19%		
15	2038	3.59%	165	5.24%	5.24%		
16	2039		•	-			
17	2040		•	-			
18	2041						
19	2042		•	-			
20	2043	3.80%	145	5.25%	5.25%		
21	2044						
22	2045		•	-			
23	2046						
24	2047						
25	2048		-	·			
26	2049						
27	2050						
28	2051		•				
29	2052		•				
30	2053	3.80%	155	5.35%	5.35%		

Notes:

(1) Assumes Make-Whole Call

3. Please provide us with your firm's opinion on the potential tax-exempt and/or taxable post-event market capacity over the next 0-12 and 12-24 months at rates that are at or above the current "market" scale, as needed. In addition, please include and describe briefly in your response if there is any overlap in tax-exempt / taxable capacity.

FHCF Post-Event Market Capacity (\$ in Billions)						
Time Period Tax-Exempt Taxable Tota						
0-12 Months	3.5 to 5.0	5.0 to 7.0	8.5 to 12.0			
12-24 Months	2.0 to 4.0	3.0 to 5.0	5.0 to 9.0			

There is no overlap in tax-exempt and taxable capacity.

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To: Florida Hurricane Catastrophe Fund

From: Wells Fargo Corporate and Investment Banking

Date: April 24, 2023

Re: Florida Hurricane Catastrophe Fund Bonding Capacity Estimate for April 2023

Wells Fargo Corporate and Investment Banking ("Wells Fargo") is pleased to provide the Florida Hurricane Catastrophe Fund ("FHCF") with our estimate of FHCF's bonding capacity for April 2023. On the following pages, please find our estimate of current market tax-exempt and taxable scales and spreads along with our estimate of bonding capacity for the 0-12 and 12-24 month periods. Feel free to contact any member of the Wells Fargo team if we can provide additional information or address any questions regarding these estimates.

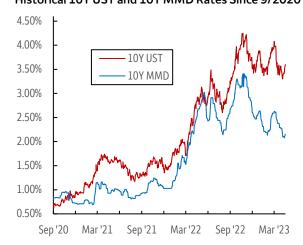
We estimate that FHCF could issue between \$10.0 and \$14.0 billion in combined tax-exempt and taxable bonds over a 24-month time horizon. While we have observed continued market volatility in the municipal and treasury markets, our capacity estimate remains unchanged from our last estimate in October 2022. The scales that we include on the following pages for taxable and tax-exempt FHCF bonds reflect market conditions as of April 17, 2023 and assume a \$3 billion issuance amortized in discrete \$100 million amounts over 30 years. We believe this level of issuance falls well within the market's current capacity for FHCF's debt. Interest rate benchmarks and spreads have decreased since our last bonding capacity estimate.

Wells Fargo appreciates the opportunity to present our estimate of FHCF's current bonding capacity. We will continue to monitor market conditions and keep you apprised of market developments that may impact FHCF's bonding capacity.

Recent Rate Movement Since FHCF's Series 2020A pricing on September 2, 2020, the benchmark 10-year US Treasury has risen 294 basis points, and it currently sits at 3.60%. Tax-exempt rates have increased as well, with 10-year MMD increasing by 132 basis points over the same period; it closed at 2.15% on Monday. As graphically depicted in the table to the right, interest rate benchmarks have increased by a considerable amount since FHCF's last financing.

## Market Looks for Next Fed Indication after Months of Turbulence Since our previous update in October the market has begun to soften as Fed Rate hikes are slowing down and expected to conclude. The fastest pace of policy tightening since the early 1980s is winding down. Wells Fargo's economists anticipate one more quarter-point rate hike at the upcoming FOMC meeting on May 3, after which they suspect the Fed will remain on hold

#### Historical 10Y UST and 10Y MMD Rates Since 9/20201



until the fourth quarter. Without a banking crisis, rate increases might have continued later into the year. However, the recent difficulties in the financial sector have stifled further hikes beyond May, in our view. The implied rate based on fed funds futures trading is hovering near 4.50%. Our own forecast splits the uprights with a year-end target of 4.75% for the fed funds rate. Our view is informed by the expectation of recession in the second half of the year and correlated slowing in the labor market combining with inflation rate decreases leading to a softer policy stance.<sup>2</sup>

Small Municipal Fund Outflow Year to Date Offering insight into investor sentiment regarding the municipal space, municipal funds have seen a small \$1.5 billion net outflow of investor assets year to date compared to the \$120.6 billion of net outflows observed in 2022.<sup>3</sup>

<sup>&</sup>lt;sup>1</sup>Source: US Treasury and Thomson Reuters TM3, from September 2, 2020 to April 17, 2023

<sup>&</sup>lt;sup>2</sup>Wells Fargo & Company report and forecast published 04/21/2023.

<sup>&</sup>lt;sup>3</sup>Lipper, A Thomson Reuters Company, as of 04/19/2023



1. Please provide a 30-year tax-exempt scale for the FHCF using the MMD at the close of business Monday, April 17th. This scale should be the one that you believe reflects a "market" scale given the FHCF's strong credit with no capacity constraints. Please use serial bonds and 15, 20, 25, and/or 30-year term bonds, as needed, over a 30-year amortization period (7/1/24 - 7/1/53) with premium coupons throughout when writing the scale. Base your scale on an uninsured financing given the FHCF's strong current underlying ratings of Aa3/AA/AA (Moody's / S&P / Fitch).

Please note that the tax-exempt scale shown below assumes that the bonds would be issued with a 10-year par call option. Bond prices shown in the table assume a May 24, 2023 delivery date, and term bond maturities in 2048 and 2053.

		Indica	urricane Catastro tive Tax-Exempt tes as of COB Apı	Scale il 17, 2023		
	I-MMD	Spread		Yield-to-		Yield-to-
Maturity	Index	(bps)	Coupon	Worst	Price (\$)	Maturity
7/1/2024	2.44%	+50	5.00%	2.94%	102.216	
7/1/2025	2.28%	+53	5.00%	2.81%	104.438	
7/1/2026	2.17%	+55	5.00%	2.72%	106.737	
7/1/2027	2.13%	+57	5.00%	2.70%	108.873	
7/1/2028	2.13%	+59	5.00%	2.72%	110.791	
7/1/2029	2.10%	+61	5.00%	2.71%	112.798	
7/1/2030	2.07%	+63	5.00%	2.70%	114.772	
7/1/2031	2.10%	+65	5.00%	2.75%	116.240	
7/1/2032	2.13%	+67	5.00%	2.80%	117.567	
7/1/2033	2.16%	+70	5.00%	2.86%	118.659	
7/1/2034	2.24%	+74	5.00%	2.98%	117.507	3.12%
7/1/2035	2.37%	+78	5.00%	3.15%	115.898	3.39%
7/1/2036	2.54%	+80	5.00%	3.34%	114.131	3.63%
7/1/2037	2.68%	+82	5.00%	3.50%	112.668	3.83%
7/1/2038	2.77%	+84	5.00%	3.61%	111.676	3.96%
7/1/2039	2.81%	+86	5.00%	3.67%	111.139	4.05%
7/1/2040	2.90%	+88	5.00%	3.78%	110.162	4.16%
7/1/2041	2.93%	+90	5.00%	3.83%	109.721	4.23%
7/1/2042	2.96%	+90	5.00%	3.86%	109.458	4.27%
7/1/2043	3.01%	+90	5.00%	3.91%	109.021	4.32%
7/1/2044	3.05%				-	
7/1/2045	3.07%				-	
7/1/2046	3.12%				-	
7/1/2047	3.15%				-	
7/1/2048	3.18%	+95	5.00%	4.13%	107.122	4.52%
7/1/2049	3.19%				-	
7/1/2050	3.20%				_	
7/1/2051	3.21%				-	
7/1/2052	3.22%				-	
7/1/2053	3.23%	+95	5.00%	4.18%	108.739	4.70%



2. Please provide a 30-year taxable scale using the Treasury curve at the close of business Monday, April 17th. This scale should be the one that you believe reflects a "market" scale given the FHCF's strong credit with no capacity constraints. Please use serial bonds and 15, 20, 25, and/or 30-year term bonds, as needed, over a 30-year amortization period (7/1/24 - 7/1/53) with par-ish coupons throughout when writing the scale. Again, base the scale on an uninsured financing given again the FHCF's current underlying ratings of Aa3/AA/AA (Moody's / S&P / Fitch).

Please note that the indicative taxable scale shown below assumes that the bonds would be issued with a 10-year par call option. Bond prices shown in the table assume a May 24, 2023 delivery date, and the 2043 and 2053 maturities represent term bonds.

Florida Hurricane Catastrophe Fund Indicative Taxable Scale Market Rates as of COB April 17, 2023						
		Spread				Yield-to-
Maturity	UST	(bps)	Coupon	Yield	Price (\$)	Maturity
7/1/2024	4.18%	+75	4.93%	4.93%	100.000	
7/1/2025	4.18%	+80	4.98%	4.98%	100.000	
7/1/2026	3.92%	+110	5.02%	5.02%	100.000	
7/1/2027	3.69%	+135	5.04%	5.04%	100.000	
7/1/2028	3.69%	+140	5.09%	5.09%	100.000	
7/1/2029	3.64%	+150	5.14%	5.14%	100.000	
7/1/2030	3.64%	+155	5.19%	5.19%	100.000	
7/1/2031	3.60%	+165	5.25%	5.25%	100.000	
7/1/2032	3.60%	+170	5.30%	5.30%	100.000	
7/1/2033	3.60%	+175	5.35%	5.35%	100.000	
7/1/2034	3.60%	+185	5.45%	5.45%	100.000	
7/1/2035	3.60%	+195	5.55%	5.55%	100.000	
7/1/2036	3.60%	+200	5.60%	5.60%	100.000	
7/1/2037	3.60%		-	-		
7/1/2038	3.60%		-	-		
7/1/2039	3.81%		-	-		
7/1/2040	3.81%		-	-		
7/1/2041	3.81%		-	-		
7/1/2042	3.81%		-	-		
7/1/2043	3.81%	+195	5.76%	5.76%	100.000	
7/1/2044	3.81%		-	-		
7/1/2045	3.81%		-	-		
7/1/2046	3.81%		-	-		
7/1/2047	3.81%		-	-		
7/1/2048	3.81%		-	-		
7/1/2049	3.81%		-	-		
7/1/2050	3.81%		-	-		
7/1/2051	3.81%		-	-		
7/1/2052	3.81%		-	-		
7/1/2053	3.81%	+210	5.91%	5.91%	100.000	



3. Please provide us with your firm's opinion on the potential tax-exempt and/or taxable post-event market capacity over the next 0-12 <u>and</u> 12-24 months at rates that are at or above the current "market" scale, as needed. In addition, please include and describe briefly in your response if there is any overlap in tax-exempt / taxable capacity.

The capacity estimates shown in the table below assume FCHF would issue debt at higher interest rates than the current "market" tax-exempt and taxable scales that we have provided in our response to questions 1 and 2.

FHCF Post-Event Market Capacity					
Time Period	Tax-Exempt	Taxable	Total		
0-12 Months	\$3.0 - \$4.0 billion	\$3.0 - \$4.0 billion	\$6.0 - \$8.0 billion		
12-24 Months	\$2.0 - \$3.0 billion	\$2.0 - \$3.0 billion	\$4.0 - \$6.0 billion		



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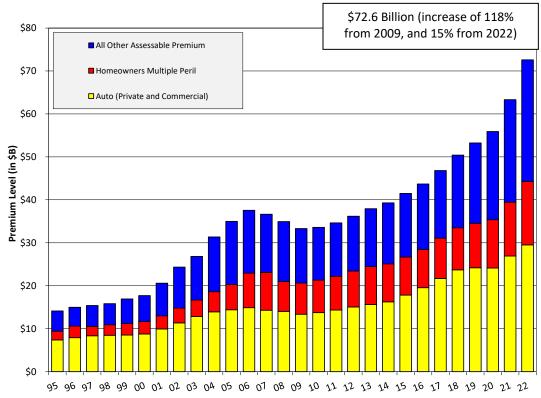
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#### Appendix B – The FHCF's Emergency Assessment Base

According to Section 215.555(6)(b)1., Florida Statutes, "(i)f the board determines that the amount of revenue produced under subsection (5) is insufficient to fund the obligations, costs, and expenses of the fund and the corporation, including repayment of revenue bonds and that portion of the debt service coverage not met by reimbursement premiums, the board shall direct the Office of Insurance Regulation to levy, by order, an emergency assessment on direct premiums for all property and casualty lines of business in this state, including property and casualty business of surplus lines insurers regulated under part VIII of chapter 626, but not including any workers' compensation premiums or medical malpractice premiums. As used in this subsection, the term "property and casualty business" includes all lines of business identified on Form 2, Exhibit of Premiums and Losses, in the annual statement required of authorized insurers by s. 624.424 and any rule adopted under this section, except for those lines identified as accident and health insurance and except for policies written under the National Flood Insurance Program."

In numerical terms, this gives the FHCF an ability to assess against a base which, as of the end of 2022 (the last official measurement date), totaled approximately \$72.6 billion. The chart below and table on the following page show the evolution of the FHCF's assessment base over time, both by type of coverage and admitted market and surplus lines.





#### Historical FHCF Emergency Assessment Base (\$MM)

#### Admitted Market, Surplus Lines, and the dollar value of a 6% emergency assessment

		Surplus Lines			% Premium
		and NIMA	Total	6%	Change
Calendar	Admitted	Clearinghouse	Aggregate	Emergency	from Prior
Year	Lines DWP*	DWP	Premium	Assessment	Year
1995	\$13,783	-	\$13,783	-	
1996	\$14,994	-	\$14,994	-	8.79%
1997	\$15,402	-	\$15,402	-	2.72%
1998	\$15,817	-	\$15,817	-	2.70%
1999	\$16,036	-	\$16,036	-	1.38%
2000	\$16,780	-	\$16,780	-	4.64%
2001	\$19,195	-	\$19,195	-	14.39%
2002	\$22,150	-	\$22,150	-	15.39%
2003	\$24,411	\$2,435	\$26,845	\$1,611	21.20%
2004	\$28,649	\$2,695	\$31,344	\$1,881	16.76%
2005	\$31,714	\$3,275	\$34,989	\$2,099	11.63%
2006	\$33,346	\$4,208	\$37,554	\$2,253	7.33%
2007	\$32,545	\$4,101	\$36,646	\$2,199	-2.42%
2008	\$30,830	\$4,095	\$34,926	\$2,096	-4.69%
2009	\$29,454	\$3,859	\$33,313	\$1,999	-4.62%
2010	\$29,888	\$3,715	\$33,603	\$2,016	0.87%
2011	\$30,943	\$3,696	\$34,640	\$2,078	3.09%
2012	\$32,323	\$3,862	\$36,185	\$2,171	4.46%
2013	\$33,726	\$4,206	\$37,933	\$2,276	4.83%
2014	\$35,085	\$4,216	\$39,302	\$2,358	3.61%
2015	\$36,957	\$4,550	\$41,507	\$2,490	5.61%
2016	\$39,069	\$4,623	\$43,693	\$2,622	5.26%
2017	\$41,844	\$4,973	\$46,817	\$2,809	7.15%
2018	\$44,858	\$5,547	\$50,405	\$3,024	7.66%
2019	\$47,033	\$6,205	\$53,238	\$3,194	5.62%
2020	\$48,827	\$7,066	\$55,892	\$3,354	4.99%
2021	\$54,253	\$9,065	\$63,318	\$3,799	13.29%
2022	\$61,027	\$11,568	\$72,595	\$4,356	14.65%

Source: Office of Insurance Regulation ("OIR") and Florida Surplus Lines Service Office ("FSLSO")

DWP is as of 12/31 and is based on companies reporting to the OIR on behalf of the FHCF and is subject to change as company/agent adjustments are reported. In 2004, the Florida legislature excluded medical malpractice for 3 years and included surplus lines. Medical malpractice has since been permanently exempted.

2011-2016 DWP numbers have been adjusted to reflect unassessable premiums written in assessable lines of business. However, beginning in 2017, this allowed adjustment figure is unavailable. The average reduction to DWP related to these adjustments was approximately 0.90%.

Average direct written premium increase (geometric mean) from 2000-2022 is 6.99%.

## 2022 Admitted Market Lines Premiums (\$MM)

	2022 Total
	Assessable
Line of Business	Premium
Fire	\$856.7
Allied Lines	\$3,000.9
Multiple Peril Crop	\$205.0
Private crop	\$0.6
Farmowners Multiple Peril	\$23.6
Homeowners Multiple Peril	\$13,805.9
Commercial multiple peril (liability portion)	\$794.6
Commercial multiple peril (non-liability portion)	\$1,104.0
Mortgage Guaranty	\$444.5
Ocean Marine	\$544.8
Inland Marine	\$1,994.6
Financial Guaranty	\$7.2
Earthquake	\$7.5
Other liability - occurrence	\$4,899.0
Other liability - claims-made	\$1,104.9
Products Liability	\$134.4
Private Flood	\$131.5
Private passenger auto no-fault (personal injury protection)	\$5 <i>,</i> 300.9
Other Private Passenger Auto Liability	\$12,626.5
Commercial auto no-fault (personal injury protection)	\$142.2
Other Commercial Auto Liability	\$3,955.0
Private Passenger Auto Physical Damage	\$7,394.0
Commercial Auto Physical Damage	\$607.8
Aircraft (All Perils)	\$228.2
Fidelity	\$74.0
Surety	\$552.7
Burglary and Theft	\$22.8
Boiler and Machinery	\$81.4
Credit	\$142.1
Warranty	\$839.6
Aggregate write-ins for other lines of business	\$0.0
Totals	\$61,026.8

Source: Florida Office of Insurance Regulation, Market Research Unit

#### 2022 Surplus Lines Premiums (\$MM)

		2022 Surplus			2022 Surplus
		Lines			Lines
		Premiums			Premiums
Covera	ge Code	(\$MM)	Cover	age Code	(\$MM)
1000	Commercial Property	\$4,192.5	3005	Stevedores Legal Liability	\$51.6
1001	Builders Risk	\$228.9	3006	Personal & Pleasure Boats & Yachts	\$2.0
1002	Business Income	\$0.9	3007	Ocean Marine Builder's Risk	\$0.0
1003	Apartments (Commercial)	\$9.1	3008	Longshoremen (Jones Act)	\$0.0
1004	Boiler and Machinery	\$0.9	3010	Marine Operators Legal Liability - Non Taxable	\$0.0
1005	Commercial Package (Property & Casualty)	\$606.5	3011	Marine Liabilities Package - Non Taxable	\$56.2
1006	Condominium Package (Commercial)	\$100.5	4000	Inland Marine (Commercial)	\$10.5
1007	Crop Hail	\$0.2	4001	Inland Marine (Personal)	\$35.0
1008	Difference In Conditions	\$10.8	4002	Motor Truck Cargo	\$5.7
1009	Earthquake	\$0.9	4003	Jewelers Block	\$0.0
1010	Flood	\$58.2	4004	Furriers Block	\$4.5
1011	Glass (Commercial)	\$0.0	4005	Contractors Equipment	\$1.0
1012	Mortgagee Impairment	\$0.8	4006	Electronic Data Processing	\$1,711.2
1013	Windstorm &/or Hail	\$253.9	5000	Commercial Limbralla Liability	\$161.3
1014 1015	Mold Coverage - Commercial Sinkhole Coverage - Commerical	\$1.4 \$0.0	5001 5002	Commercial Umbrella Liability Directors & Officers Liability (Profit)	\$99.2
1015	Excess Flood - Commercial	\$26.1	5002	Directors & Officers Liability (Profit)  Directors & Officers Liability (Non-Profit)	\$10.3 \$1.6
1010	Collateral Protection	\$32.5	5003	Educator Legal Liability	\$1.0
1017	Fire	\$0.0	5004	Employment Practices Liability	\$846.6
1100	Bankers Blanket Bond	\$2.2	5006	Excess Commercial General Liability (Not Umbrella)	\$15.6
1101	Blanket Crime Policy	\$1.4	5007	Excess Personal Liability (Not Umbrella)	\$10.3
1102	Employee Dishonesty	\$0.0	5008	Liquor Liability	\$8.4
1103	Identity Theft	\$0.0	5009	Owners & Contractors Protective	\$13.1
1104	Deposit Forgery	\$0.0	5010	Personal Umbrella	\$31.1
1105	Miscellaneous Crime	\$2.6	5011	Personal Liability	\$93.2
1200	Accident & Health	\$0.0	5012	Pollution & Environment Liability	\$25.6
1201	Credit Insurance	\$7.9	5013	Product & Completed Operations Liability	\$10.1
1202	Animal Mortality	\$0.1	5014	Public Officials Liability	\$2.3
1203	Mortgage Guaranty	\$0.9	5015	Police Professional Liability	\$2.2
1204	Worker's Compensation-Excess Only	\$0.0	5016	Media Liability	\$8.3
1205	Product Recall	\$10.5	5017	Railroad Protective Liability	\$0.0
1206	Kidnap/Ransom	\$0.1	5018	Asbestos Removal & Abatement	\$0.2
1207	Surety	\$52.5	5019	Guard Service Liability	\$12.3
1208	Weather Insurance	\$0.6	5020	Special Events Liability	\$201.2
1209	Prize Indemnification	\$1.2	5021	Miscellaneous Liability	\$268.1
1210	Travel Accident	\$0.0	5022	Cyber Liability	\$0.0
1211	Terrorism	\$23.1	6001	Miscellaneous Medical Professionals	\$0.0
1212	Fidelity	\$2.3	6002	Nursing Home Professional Liability	\$0.0
1213	Deductible Buyback – Property	\$46.3	6003	Physician/Surgeon	\$0.0
2000	Homeowners-HO-1	\$33.6	7000	Architects & Engineers Liability	\$28.7
2001	Homeowners-HO-2	\$1.1	7001	Insurance Agents & Brokers E&O	\$18.1
2002	Homeowners-HO-3	\$531.8	7002	Lawyers Professional Liability	\$59.3
2003	Tenant Homeowners-HO-4	\$20.6	7003	Miscellaneous E&O Liability	\$269.1
2004	Homeowners-HO-5	\$111.9	7004	Real Estate Agents E&O	\$6.4
2005	Condo Unit-Owners HO-6	\$145.4	7005	Software Design Computer E & S	\$7.2
2006	Homeowners-HO-8	\$47.9	8000	Commercial Auto Liability	\$173.2
2007	Dwelling Builders Risk	\$36.7	8001	Commercial Auto Excess Liability	\$20.9
2008	Dwelling Flood	\$85.6	8002	Commercial Auto Physical Damage	\$53.3
2009	Dwelling Property	\$150.7	8003	Dealers Open Lot	\$30.5
2010	Farmowners Multi-Peril	\$3.2	8004	Garage Koopers Logal	\$52.1 \$1.2
2011 2012	Mobile Homeowners Windstorm	\$38.7 \$54.2	8005 8006	Garage Keepers Legal  Private Passengers Auto-Physical Damage Only	\$1.2 \$0.9
2012	Mold Coverage - Residential	\$54.2	8006	Private Passengers Auto-Physical Damage Only Personal Excess Auto Liability	\$0.9 \$0.7
2013	Sinkhole Coverage - Residential	\$0.0	9000	Commercial Aircraft Hull &/or Liability	\$0.7 \$34.4
2014	Excess Flood - Residential	\$31.1	9000	Airport Liability	\$34.4 \$3.1
3000	Marine Operators Legal Liability - Taxable	\$31.1	9001	Aviation Cargo	\$5.1 \$5.3
3000	Marine Operators Legal Liability - Taxable  Marine Liabilities Package - Taxable	\$2.5	9002	Aviation Cargo  Aviation Product Liability	\$5.3 \$27.1
3001	Ocean Marine-Hull &/or Protection & Indemnity	\$20.6	9003	Hanger Keepers Legal Liability	\$27.1
3002	Ocean Cargo Policy	\$37.5	9004	Personal & Pleasure Aircraft	\$0.1
3004	Ship Repairers Legal Liability	\$0.0	5505	Totals	\$11,568

Source: FSLSO

Based on policies with a submitted (filed) date from 1/1/22 to 12/31/22.

#### Disclaimer

The analysis or information presented herein is based upon projections and have limitations. No representation is made that any results indicated will be achieved. Changes to any prices, levels, or assumptions contained herein may have a material impact on results. Any estimates or assumptions contained herein represent our best judgment as of the date indicated and are subject to change.