

**REPORT PREPARED FOR THE  
FLORIDA HURRICANE CATASTROPHE FUND**



**CLAIMS-PAYING CAPACITY ESTIMATES**

**MAY 19, 2020**

***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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## I. 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. Its sole purpose is to stabilize the State’s property insurance markets 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.

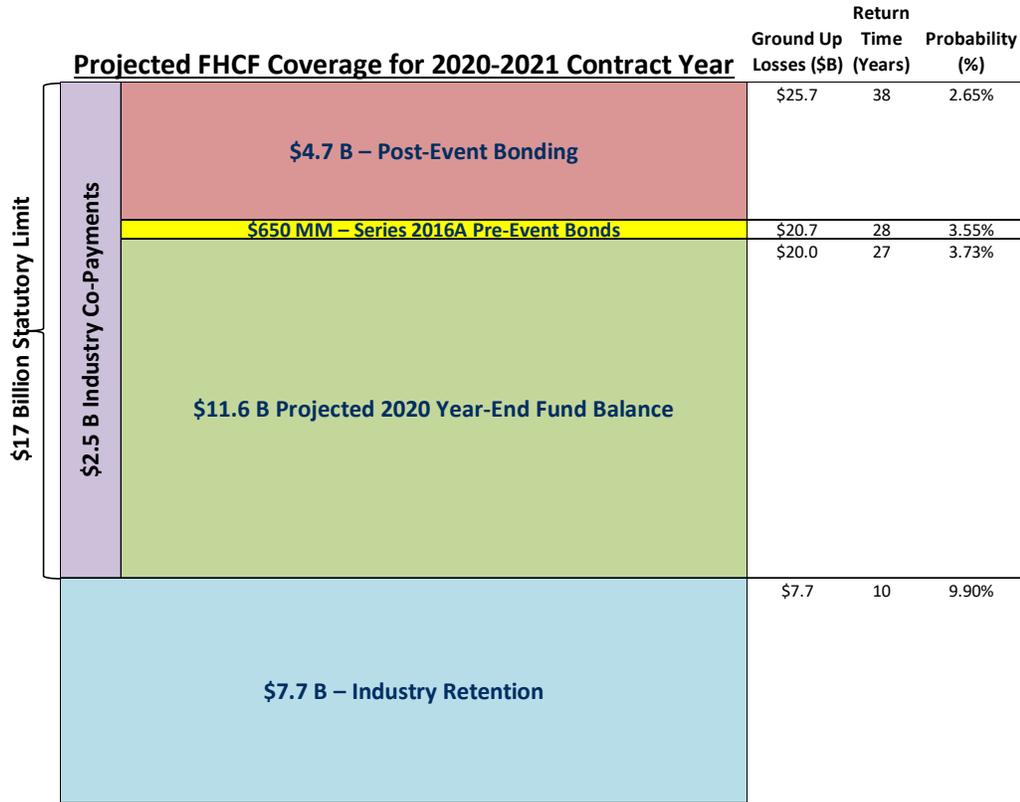
The FHCF may obtain funds to pay its contractual reimbursement obligations from the following available potential sources:

- (1) *Accumulated 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 issued under Section 215.555(6), Florida Statutes, and secured by emergency assessments, if needed*
- (5) *Emergency assessments under Section 215.555(6)(b), Florida Statutes, if needed*
- (6) *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, 2020 – May 31, 2021, the maximum potential liability of the FHCF is \$17 billion, with projected available total liquid resources of \$12.3 billion, which is approximately \$4.7 billion below the maximum potential liability and therefore would require \$4.7 billion of post-event borrowing. 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. The following chart summarizes the FHCF’s projected coverage for the 2020-2021 contract year based on assumptions prepared by Paragon Strategic Solutions, the FHCF’s consulting actuary.



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

Ground-up losses exclude 10% of loss adjustment expenses (“LAE”) on the industry co-payments.

*In this chart the relevant data are aggregated for FHCF participating insurers. The references to probabilities, probable maximum losses, and cash exhaustion are shown for illustrative purposes only. The probabilities in this chart are presented as if all of the participating insurers had uniform exposures and loss experiences. In actual practice, each participating insurer has its own retention and coverage limits based upon its actual exposures, and therefore each participating insurer has its own unique probability 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 2020 season in order to assist the FHCF’s participating insurers in determining their reimbursements.

Providing estimates at these particular times of the year is useful from the perspective that some insurers operate in multiple states and tend to purchase their private reinsurance effective January, 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.



## II. The Process

As in prior years, in order to estimate the FHCF's borrowing capacity for the 2020 and 2021 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 \$9 billion in market capitalization (NYSE:RJF, [www.raymondjames.com](http://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 advisor to numerous other governmental catastrophe insurance entities across the country and our experience includes the evaluation and placement of risk transfer programs in the traditional and capital markets, the issuance of pre-event bonds and other liquidity mechanisms, the issuance of post-event bonds, 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 advisor or underwriter on the issuance of over \$40 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 over \$774 billion of assets under management.
- (2) Solicited formal written feedback from the five current senior managing underwriters of the FHCF's financial services team. These firms – Bank of America, Citi, J.P. Morgan, Morgan Stanley and Wells Fargo – are among the largest financial services firms 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 Series 2013A and Series 2016A pre-event financings. In the solicitation for the preparation of this report, we asked them to provide their estimates, given certain assumptions, of the FHCF's bonding capacity. 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.



**III. Analytical Considerations**

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 \$53.2 billion<sup>1</sup>. The strength of this pledged revenue stream is the primary reason the three major rating agencies – Moody's, Standard & Poor's, and Fitch – rate the FHCF's debt 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.

**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**

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 \$53.2 billion mean the FHCF could levy annual assessments of as much as \$3.19 billion for losses from hurricanes occurring in one contract year and as much as \$5.32 billion for losses from hurricanes occurring over multiple contract years. These annual amounts, in conjunction with the other available resources of the FHCF, are estimated to be more than sufficient to support enough bonds to enable the FHCF to meet its maximum initial season obligation and subsequent season coverage as well, assuming that the fixed income markets continue to function in a normal manner and the FHCF has market access to issue such bonds at the current market rate for the initial season, or even at inflated rates of 6%.

Notwithstanding factors related to COVID-19, economic and market conditions have significantly improved over the last ten years with the U.S. and global interest rates at historically low levels and fixed rate issuance is at all-time highs, which enabled the FHCF to successfully execute the \$2 billion Series 2013A and \$1.2 billion Series 2016A taxable pre-event financings in 2013 and 2016, respectively. However, market conditions are very volatile and market access is never guaranteed, especially after an event or multiple events either in Florida or globally, and therefore always carry uncertainty, which is critical to understanding the potential challenges the FHCF may face, especially in the current environment or after a large event. In addition, since 2015 the FHCF has purchased reinsurance each year. For contract year 2019-2020, the FHCF transferred \$920 million of a \$1 billion layer of risk through traditional reinsurance at an attachment point of \$10.5 billion.

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



Under section 215.555(4)(b)2, Florida Statutes, an insurer is prohibited from electing a lower coverage percentage upon renewal of its FHCF reimbursement contract if any post-event revenue bonds are outstanding. However, since the defeasance of all outstanding FHCF post-event revenue bonds in 2014, some participating insurers based on their risk exposure, elected to lower their coverage percentage selections to take advantage of soft global risk transfer markets; the weighted average coverage percentage selection dropped from 89.9% in the 2014-2015 contract year to 73.5% for the 2018-2019 contract year. Subsequently, as a result of hardening pricing conditions in the global reinsurance markets due to significant global insured losses, including losses from Hurricanes Irma, Maria, and Michael, Japanese earthquakes, and California wildfires in 2017 and 2018, the participating insurers increased their FHCF participation coverage to 81.6% for the 2019-2020 contract year and 86.2% for the 2020-2021 contract year. As a result of these changes and the enactment into law of HB 301, which increased the FHCF’s LAE allowance from 5% to 10%, the co-payment amount for a \$17 billion FHCF payout decreased from approximately \$6.0 billion for the 2018-2019 Contract Year to \$3.5 billion for the 2019-2020 Contract Year and \$2.5 billion for the 2020-2021 Contract Year.

As reflected in the table below, for the 2020-2021 Contract Year, the FHCF has approximately \$12.3 billion of liquidity resources, which is approximately \$4.7 billion below its maximum statutory obligation of \$17 billion. After an event and depending on the market conditions and interest rates, the FHCF may be able to either draw on its pre-event bond proceeds and repay the pre-event bonds by issuing post-event bonds, or the FHCF could issue post-event bonds in the amount of \$5.4 billion as its \$650 million of pre-event bond proceeds matures on July 1, 2021. The table below shows the FHCF’s obligations and its projected liquidity resources for the 2020-2021 Contract Year.

<b>FHCF Obligations and Liquidity Resources – 2020-2021 Contract Year</b>	<b>Amount (\$B)</b>
<b>Total Potential FHCF Obligations</b>	<b>\$17.0</b>
<b>Projected 2020 Year-End Fund Balance</b>	<b>\$11.6</b>
<b>Risk Transfer</b>	<b>\$0.0</b>
<b>Series 2013A and Series 2016A Pre-Event Bonds Balance</b>	<b>\$0.7</b>
<b>Total Liquidity Resources</b>	<b>\$12.3</b>
<b>Total Liquidity Resources Below Potential Obligations</b>	<b>\$4.7</b>

*Numbers may not add due to rounding*

If the FHCF were to leave all its Series 2016A pre-event bond proceeds as they mature on July 1, 2021, the potential maximum amount of post-event bonding needed is projected to be approximately \$5.4 billion for the 2020-2021 contract year. The FHCF could execute this size of transaction in one or multiple series over a 12-month period – this issuance amount is standard in the taxable and tax-exempt markets. For example, annual par amount issued over a calendar year by a single municipal issuer has exceeded \$5.4 billion 14 times since 2016.



The FHCF’s 2020-2021 Contract Year liquidity resources reflect paid losses and loss reserves in the total amount of \$7.45 billion from Hurricanes Irma and Michael. At this time, the FHCF’s projected ultimate losses and loss reserves estimated by Paragon Strategic Solutions Inc., the FHCF’s consulting actuary, are \$6.00 billion from Hurricane Irma and \$1.45 billion from Hurricane Michael.

Largest 25 Taxable Municipal Issuances By Par Amount Since 2016					
Rank	Issuer Name	State	Year of Sale	Issue Description	Par (\$MM)
1	California	CA	2018	Various GO & Refunding Bonds	\$2,147
2	Regents of the Univ of California	CA	2020	Medical Center Pooled Rev Bonds	\$1,800
3	NYS Dorm Authority	NY	2019	State Personal Inc Tax Rev Bonds	\$1,392
4	San Jose City Successor Redev Agcy	CA	2017	Sr Tax Allocation Refunding Bonds	\$1,333
5	Grand Parkway Transport Corp	NJ	2020	Sub Tier Toll Revenue Ref Bonds	\$1,293
6	California	CA	2017	High-Speed Passenger Train Bonds	\$1,248
<b>7</b>	<b>Florida St Board Admin Fin Corp</b>	<b>FL</b>	<b>2016</b>	<b>Revenue Bonds</b>	<b>\$1,200</b>
8	Dallas & Fort Worth Cities-Texas	TX	2019	Joint Revenue Refunding Bonds	\$1,167
9	Michigan Finance Authority	MI	2019	Hospital Revenue Refunding Bonds	\$1,091
10	Pennsylvania State University	PA	2020	General Obligation Notes	\$1,061
11	Empire State Development Corp	NY	2017	State Personal Inc Tax Rev Bonds	\$1,035
12	Empire State Development Corp	NY	2017	State Personal Inc Tax Rev Bonds	\$1,018
13	Houston City-Texas	TX	2017	Pension Obligation Bonds	\$1,005
14	Bay Area Toll Authority (BATA)	CA	2019	Revenue Bonds	\$973
15	New Jersey Trans Trust Fund Au	NJ	2019	Transporation System Bonds	\$946
16	New York	NY	2019	GO Refunding Bonds	\$914
17	Foothill/Eastern Transp Corridor Agy	NC	2019	Toll Road Refunding Rev Bonds	\$897
18	Texas PAB Surface Trans Corp	TX	2019	Sr Lien Revenue Ref Bonds	\$871
19	Massachusetts	MA	2019	GO Refunding Bonds	\$858
20	NYS Thruway Authority	NY	2019	General Revenue Bonds	\$858
21	California	CA	2019	Various Purpose GO Bonds	\$843
22	California State Univ Trustees	CA	2020	Systemwide Revenue Bonds	\$829
23	Empire State Development Corp	NY	2019	State Personal Inc Tax Rev Bonds	\$802
24	Chicago City-Illinois	IL	2018	General Airport Sr Ln Rev Bonds	\$800
25	Miami-Dade Co-Florida	FL	2018	Aviation Revenue Refunding Bonds	\$767

Source: Thomson Financial for long-term negotiated taxable issuances from January 1, 2016 to April 30, 2020.



Largest 25 Tax-Exempt Municipal Issuances By Par Amount Since 2016					
Rank	Issuer Name	State	Year of Sale	Issue Description	Par (\$MM)
1	Buckeye Tobacco Settle Fin Au	OH	2020	Tobacco Settle Asset-Backed Bonds	\$4,924
2	Illinois	IL	2017	General Obligation Bonds	\$4,500
3	NJ Tobacco Settlement Fin Corp	NJ	2018	Tobacco Settlement Bonds	\$3,147
4	California	CA	2017	GO Var Purpose & Refunding Bonds	\$2,793
5	New Jersey Trans Trust Fund Au	NJ	2016	Revenue Notes	\$2,741
6	California	CA	2016	GO Various Purpose & Ref Bonds	\$2,653
7	California	CA	2017	GO Various Purpose & Ref Bonds	\$2,538
8	California	CA	2016	Various Purp & Sch Facs & Ref	\$2,357
9	Denver City and Co-Colorado	CO	2018	Subordinate Revenue Bonds	\$2,342
10	California	CA	2019	Various Purpose GO & Ref Bonds	\$2,324
11	New York Transportation Dev Corp	NY	2016	Special Facilities Bonds	\$2,260
12	California	CA	2018	GO & Various Purpose Ref Bonds	\$2,181
13	California Health Facs Fin Auth	CA	2017	Revenue Bonds	\$2,126
14	Hudson Yards Infrastructure Corp	NY	2017	Second Indenture Revenue Bonds	\$2,108
15	California	CA	2020	Various Purp GO & Ref Bonds	\$2,096
16	Colorado Health Facilities Auth	CO	2019	Revenue Bonds	\$2,043
17	California	CA	2019	Various Purpose GO & Ref Bonds	\$2,024
18	Metropolitan Transport Auth (MTA)	NY	2017	Transport Rev Ref Green Bonds	\$2,021
19	NYS Dorm Authority	NY	2019	State Personal Inc Tax Rev Bonds	\$2,013
20	California	CA	2019	GO Var Purpose & Ref Bonds	\$1,792
21	NYS Dorm Authority	NY	2017	State Personal Inc Tax Rev Bonds	\$1,750
22	Florida Development Fin Corp	FL	2019	Surface Transpo Fac Rev Bonds	\$1,750
23	North Texas Tollway Auth (NTTA)	TX	2017	1st Tier System Rev & Ref Bonds	\$1,743
24	NYS Dorm Authority	NY	2018	State Sales Tax Revenue Bonds	\$1,708
25	NYS Thruway Authority	NY	2019	Gen Rev Jr Indebtedness Oblig	\$1,693

Source: Thomson Financial for long-term negotiated tax-exempt issuances from January 1, 2016 to April 30, 2020.

After a hurricane event, the FHCF most likely will not need to do one single large financing. Based on a higher attachment point and the past payout patterns, the FHCF could also meet its 2020-2021 obligations by issuing more than one series of bonds over a period of 12 months or longer, if needed. Accordingly, it is also helpful to evaluate which issuers in the municipal market (both taxable and tax-exempt) have issued the most debt in a 12-month period. The charts on the following page show the largest amount issued every year since 2016 has exceeded \$5.4 billion.



Largest 25 Issuers By Issued Par Amount In 2016		
Rank	Issuer Name	Par (\$MM)
1	California	\$8,921
2	NYS Dorm Authority	\$5,863
3	Metropolitan Transport Auth (MTA)	\$5,192
4	Massachusetts	\$4,826
5	NYC Transitional Finance Auth	\$4,750
6	Massachusetts Dev Finance Agcy	\$4,132
7	New York City-New York	\$3,882
8	Connecticut	\$3,657
9	Chicago City-Illinois	\$3,513
10	Illinois	\$3,362
11	Illinois Finance Authority	\$3,327
12	New York Transportation Dev Corp	\$3,255
13	California Health Facs Fin Auth	\$3,214
14	Pennsylvania	\$2,841
15	New Jersey Trans Trust Fund Au	\$2,741
16	Pennsylvania Turnpike Commission	\$2,713
17	Univ of Texas Sys Bd of Regents	\$2,628
18	Michigan Finance Authority	\$2,567
19	Regents of the Univ of California	\$2,391
20	Wisconsin	\$2,197
21	Indiana Finance Authority	\$2,165
22	Miami-Dade Co-Florida	\$1,957
23	California Statewide CDA (CSCDA)	\$1,950
24	Chicago City BOE	\$1,930
25	Texas Transportation Commission	\$1,894

Largest 25 Issuers By Issued Par Amount 2017		
Rank	Issuer Name	Par (\$MM)
1	California	\$8,869
2	NYS Dorm Authority	\$7,435
3	NYC Transitional Finance Auth	\$6,503
4	Metropolitan Transport Auth (MTA)	\$5,645
5	California Health Facs Fin Auth	\$3,782
6	New York City-New York	\$3,743
7	Wisconsin	\$3,487
8	Massachusetts	\$3,101
9	New Jersey Turnpike Authority	\$3,080
10	Bay Area Toll Authority (BATA)	\$2,813
11	Chicago City-Illinois	\$2,809
12	Illinois Finance Authority	\$2,631
13	Regents of the Univ of California	\$2,621
14	Wisconsin Public Finance Auth	\$2,594
15	Massachusetts Dev Finance Agcy	\$2,572
16	North Texas Tollway Auth (NTTA)	\$2,509
17	Pennsylvania Turnpike Commission	\$2,281
18	New Jersey Economic Dev Auth	\$2,209
19	Hudson Yards Infrastructure Corp	\$2,142
20	Philadelphia City-Pennsylvania	\$2,014
21	Miami-Dade Co-Florida	\$1,957
22	Triborough Bridge & Tunnel Auth	\$1,924
23	Houston City-Texas	\$1,830
24	Texas A&M University System	\$1,786
25	NYS Housing Fin-Mortgage Agcy	\$1,775

Largest 25 Issuers By Issued Par Amount 2018		
Rank	Issuer Name	Par (\$MM)
1	NYS Dorm Authority	\$8,184
2	NYC Transitional Finance Auth	\$6,326
3	California	\$3,997
4	Metropolitan Transport Auth (MTA)	\$3,680
5	New York City-New York	\$3,569
6	Connecticut	\$3,308
7	NJ Tobacco Settlement Fin Corp	\$3,147
8	Texas Water Development Board	\$3,093
9	New Jersey Trans Trust Fund Au	\$2,763
10	Kentucky Pub Energy Au (PEAK)	\$2,731
11	Golden State Tobacco Sec Corp	\$2,496
12	Massachusetts	\$2,423
13	Main Street Natural Gas Inc	\$2,022
14	Illinois	\$1,706
15	Los Angeles Dept of Wtr & Power	\$1,703
16	Southeast Alabama Gas Dt	\$1,692
17	NYC Municipal Water Fin Auth	\$1,692
18	Regents of the Univ of California	\$1,682
19	California Statewide CDA (CSCDA)	\$1,499
20	PA Commonwealth Financing Auth	\$1,487
21	Grand Parkway Transport Corp	\$1,484
22	Pennsylvania	\$1,448
23	Chicago City BOE	\$1,412
24	NYC Housing Dev Corp	\$1,409
25	Ohio	\$1,391

Largest 25 Issuers By Issued Par Amount 2019		
Rank	Issuer Name	Par (\$MM)
1	California	\$9,489
2	NYS Dorm Authority	\$8,915
3	NYC Transitional Finance Auth	\$4,350
4	Metropolitan Transport Auth (MTA)	\$4,246
5	Colorado Health Facilities Auth	\$4,133
6	Massachusetts	\$4,019
7	Michigan Finance Authority	\$3,479
8	New York City-New York	\$3,474
9	New Jersey Trans Trust Fund Au	\$3,316
10	Empire State Development Corp	\$3,217
11	District of Columbia	\$3,157
12	San Francisco City & Co Airport Comm	\$3,078
13	NYC Municipal Water Fin Auth	\$2,938
14	Florida Development Fin Corp	\$2,849
15	Miami-Dade Co-Florida	\$2,711
16	NYS Thruway Authority	\$2,551
17	Connecticut	\$2,414
18	Port Authority of NY & NJ	\$2,401
19	Metro Washington Airports Auth	\$2,176
20	Washington	\$2,135
21	Wisconsin Public Finance Auth	\$2,106
22	Broward Co-Florida	\$2,068
23	Main Street Natural Gas Inc	\$2,003
24	Indiana Finance Authority	\$1,899
25	Texas PAB Surface Trans Corp	\$1,857

Largest 25 Issuers By Issued Par Amount 2020 YTD		
Rank	Issuer Name	Par (\$MM)
1	California	\$13,024
2	NYS Dorm Authority	\$10,826
3	Metropolitan Transport Auth (MTA)	\$6,670
4	New York City-New York	\$6,278
5	Buckeye Tobacco Settle Fin Au	\$5,352
6	Massachusetts	\$4,704
7	District of Columbia	\$4,417
8	NYC Transitional Finance Auth	\$4,350
9	Colorado Health Facilities Auth	\$4,133
10	NYC Municipal Water Fin Auth	\$3,865
11	Michigan Finance Authority	\$3,486
12	Washington	\$3,353
13	New Jersey Trans Trust Fund Au	\$3,316
14	Empire State Development Corp	\$3,217
15	San Francisco City & Co Airport Comm	\$3,078
16	Florida Development Fin Corp	\$3,015
17	NYS Thruway Authority	\$3,001
18	Massachusetts Dev Finance Agcy	\$2,871
19	Miami-Dade Co-Florida	\$2,711
20	Regents of the Univ of California	\$2,602
21	Connecticut	\$2,414
22	Port Authority of NY & NJ	\$2,401
23	Illinois Finance Authority	\$2,399
24	Wisconsin Public Finance Auth	\$2,394
25	NYC Housing Dev Corp	\$2,339

Source: Thomson Financial for long-term issuances from January 1, 2016 to April 30, 2020.

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 seven bond issues totaling \$12.1 billion (three tax-exempt issues totaling \$2.6 billion and four taxable issues totaling \$9.5 billion), of which \$3.2 billion in pre-event debt has been issued since 2012, but with \$650 million outstanding as of July 1, 2020. By comparison, for example, since 2016, the State of California has completed 50 long-term bond issues totaling over \$36 billion, the New York State Dormitory Authority has completed 147 long-term bond issues totaling approximately \$33 billion, the New York City Transitional Finance Authority has completed 74 long-term bond issues totaling over \$23 billion, and the Commonwealth of Massachusetts has completed 69 long-term bond issues totaling over \$16 billion. The FHCF's debt has always been issued with relatively short maturities ranging from 1-7 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 greater than 30 years. While interest rates are at historic lows, credit spreads have widened due to market volatility as a result of COVID-19, but investor demand remains strong across the maturity spectrum and absolute yields remain low even with elevated spreads due to the currently low yield environment.

As a less frequent issuer with relatively less debt outstanding and primarily at the shorter end of the yield curve, the FHCF is not as well covered by investor credit analysts in the primary or secondary markets who invest at the long-end of the yield curve, even though it has very strong credit ratings. This relative lack of long-term exposure and investor familiarity could potentially be a limiting factor in determining the FHCF's potential market access for larger amounts and/or longer maturities in the short run.

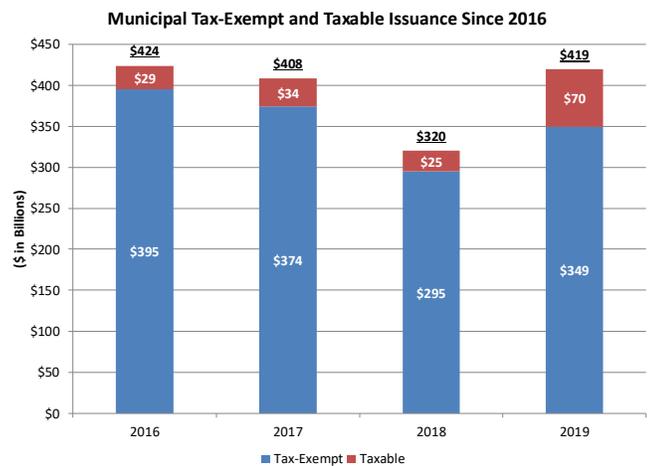
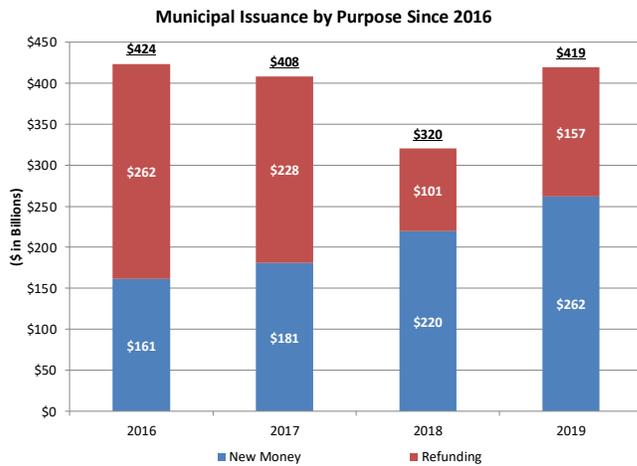
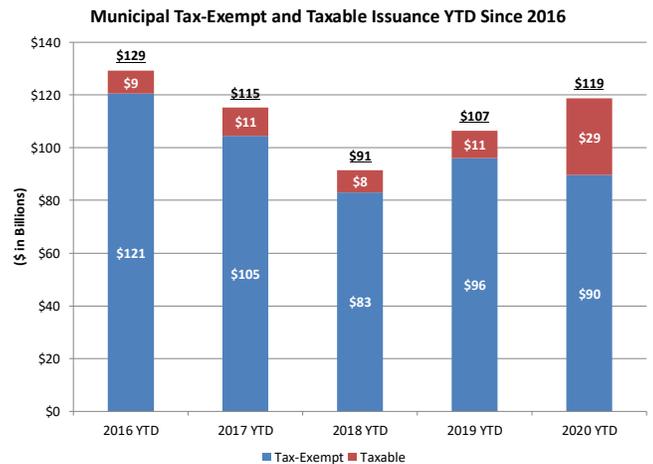
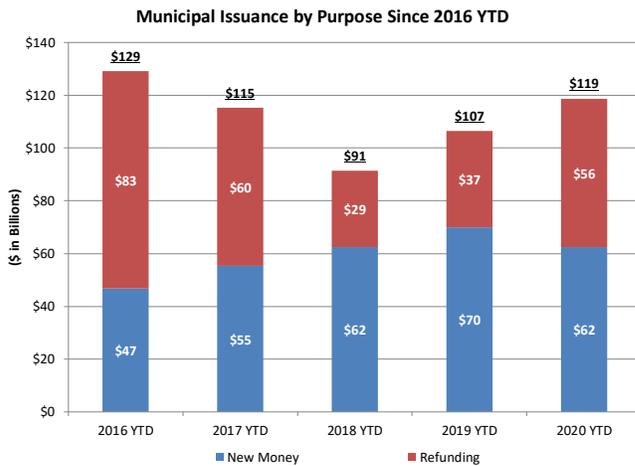
Analysis of potential market acceptance of large amounts of FHCF debt must include not only relevant historical references, but also an evaluation of current market conditions and cash flow needs. In this regard, conditions seem to be excellent in both tax-exempt and taxable municipal markets, as well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

In 2019, corporate issuance of \$1.4 trillion (\$1.1 trillion investment grade, \$278 billion high yield, and \$800 million convertible) is relatively the same as 2018 issuance of \$1.4 trillion (\$1.2 trillion investment grade, \$169 billion high yield, and \$39 billion convertible). Year-to-date 2020, corporate bond issuance is \$835 billion (\$732 billion investment grade, \$102 billion high yield, and \$2 billion convertible), or 69% higher than the \$494 billion issued over the same time period in 2019. The corporate bond market has topped \$1 trillion each year since 2011 as interest rates have been consistently historically low.

While corporate bond issuance has reached record levels since 2011, most issuances are for financial engineering rather than to build manufacturing plants or infrastructure to fund growth – i.e., more issuances are to fund mergers and acquisitions, stock buybacks, and refinance higher yielding debt in the record low interest rate environment. However, most of the recent large issuances have been to build additional reserves, which include Boeing's record-breaking \$25 billion issuance, Disney's \$11 billion issuance, Nike's \$6 billion issuance, and Proctor & Gamble's \$5 billion issuance.



For 2019, municipal long-term issuance was 31% higher compared to 2018 with \$419 billion of issuance. For year-to-date 2020, municipal long-term negotiated issuance is \$119 billion and is up marginally compared to the \$107 billion issued over the same time period in 2019. Prior to the Tax Reform Bill of 2018, a majority of municipal issuance over the past few years has been issued for refundings to capitalize on low interest rates, but as rates have reached historic lows new money issuance has grown, which is evidenced by the amount of new money issuance for 2019 – \$262 billion, or 62% of the total \$419 billion of long-term issuance. As part of the Tax Reform Bill of 2018, the tax-exempt provision for advance refundings was eliminated, which has affected the volume of refundings – 31% and 38% of municipal issuance was for refundings in 2018 and 2019, respectively.



Source: Thomson Financial for municipal long-term issuances from January 1, 2016 to April 30, 2020.

There is strong investor demand in both the tax-exempt and taxable markets as evidenced by the record issuance in March and April with \$525 billion in issuance of corporate bonds; however, global market conditions are volatile as a result of COVID-19. Nonetheless, the FHCF has multiple factors working in its favor independent of market trends, 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 February 2016, the FHCF successfully priced \$1.2 billion of Series



2016A taxable pre-event bonds with 3 and 5-year maturities at a true interest cost of 2.52%, which re-established the strength of the FHCF credit in the taxable market; (3) strong demand in the current market environment for taxable issuances and (4) 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 hurricanes of various sizes, and an evaluation of the many subjective and substantive considerations surrounding these estimates and the uses thereof. Certainty 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 can be highly volatile and uncertain at various times. Such uncertainty may create an additional risk for participating insurers who rely on the FHCF for reimbursements. Although financial market conditions are currently volatile due to COVID-19, they are conducive to favorable debt issuance due to low interest rates, but with higher spreads. While market conditions are favorable for FHCF, it is not 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. As such, participating insurers should recognize the potential impact that financial markets can have on the FHCF's claims-paying ability for subsequent and future seasons. The following pages provide current bonding and claims-paying capacity estimates.



#### IV. 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. The specific wording of the capacity question we asked the FHCF's senior managing underwriters was as follows:

**The preliminary estimated bonding capacity of the FHCF for the current contract year is \$7.2 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 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 Strategic Solutions Inc., the FHCF's consulting actuary, 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.

In general, it would take a hurricane event resulting in ground-up losses exceeding approximately \$20.7 billion to exhaust the FHCF's projected liquid resources of approximately \$12.3 billion, which is \$4.7 billion below its potential maximum obligation of \$17.0 billion. The amount of debt that the FHCF can raise within the first twelve months is helpful for the FHCF and participating insurers in protecting their financial solvency as well as any remaining pre-event bond proceeds. With the remaining \$650 million in pre-event bonds maturing on July 1, 2021, it will not be available for the 2021-2022 contract year.

We are also comfortable including estimates that contained some above-market interest rate capacity estimates in recognition of the fact that the FHCF has ample assessment capability within its statutory limits to issue bonds, 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 if the FHCF post-event bonds carry interest rates at an "above market" interest rate of 6% due to market volatility as a result of COVID-19. 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:

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



FHCF Post-Event Estimated Bonding Capacity						
	Bank of America	Citi	J.P. Morgan	Morgan Stanley	Wells Fargo	Average <sup>1</sup>
<b>Bonding Estimates</b>						
<b>Tax-Exempt:</b>						
0-12 Months	\$1.5-\$2.5B	\$2-\$2.5B	\$3-\$4B	\$1-\$3B	\$5-\$7B	\$3.2B
12-24 Months	\$1.5-\$2.5B	\$2-\$2.5B	\$2-\$3B	\$4-\$5B	\$3-\$5B	\$3.1B
<i>Total tax-exempt</i>	<i>\$3-\$5B</i>	<i>\$4-\$5B</i>	<i>\$5-\$7B</i>	<i>\$5-\$8B</i>	<i>\$8-\$12B</i>	<i>\$6.3B</i>
<b>Taxable:</b>						
0-12 Months	\$3.5-\$5.5B	\$2-\$3B	\$3-\$4B	\$5-\$7B	\$3-\$4B	\$4.0B
12-24 Months	\$3.5-\$5.5B	\$3-\$4B	\$2-\$3B	\$7-\$12B	\$2-\$3B	\$4.5B
<i>Total taxable</i>	<i>\$7-\$11B</i>	<i>\$5-\$7B</i>	<i>\$5-\$7B</i>	<i>\$12-\$19B</i>	<i>\$5-\$7B</i>	<i>\$8.5B</i>
<b>Tax-Exempt and Taxable</b>						
<b>0-12 Months Total</b>	<b>\$5-\$8B</b>	<b>\$4-\$5.5B</b>	<b>\$6-\$8B</b>	<b>\$6-\$10B</b>	<b>\$8-\$11B</b>	<b>\$7.2B</b>
<b>12-24 Months Total</b>	<b>\$5-\$8B</b>	<b>\$5-\$6.5B</b>	<b>\$4-\$6B</b>	<b>\$11-\$17B</b>	<b>\$5-\$8B</b>	<b>\$7.6B</b>
<b>0-24 Months Total</b>	<b>\$10-\$16B</b>	<b>\$9-\$12B</b>	<b>\$10-\$14B</b>	<b>\$17-\$24B*</b>	<b>\$13-\$19B</b>	<b>\$14.8B</b>

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

\* Reflects overlap in capacity between tax-exempt and taxable markets in the amount of \$3 billion

As discussed earlier, we 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 \$7.2 billion and this capacity is significantly above what would be needed to meet the FHCF’s potential obligations for the initial season if it were to leave its already issued pre-event bond proceeds outstanding, even if one conservatively expects that the FHCF payout after an event will need to occur within the first twelve months. However, when considering the larger picture of the FHCF’s ability to pay additional claims for a subsequent season, the FHCF’s bonding capacity beyond 0-12 months is also an 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 2021-2022 contract year or subsequent season losses, 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 financing resources available, and the estimated bonding capacity. The FHCF projects that its year-end fund balance for the 2020-2021 contract year is \$11.6 billion and it has an estimated bonding capacity of \$7.2 billion (which includes repayment of pre-event bond proceeds in the amount of \$650 million), which equals a total estimated claims-paying capacity of \$18.8 billion, or \$1.8 billion above its statutory limit of \$17.0 billion.

The subsequent season may have some remaining unused bonding capacity from the initial season, but for purposes of this analysis we assume the available initial season bonding capacity in the amount of \$7.2 billion is also available for the subsequent or 2021-2022 contract year. For any remaining losses

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



beyond the FHCF’s estimated claims-paying capacity for the 2021-2022 contract year, the FHCF may have additional 12-24 month bonding capacity of up to \$7.6 billion available.

Under this scenario, if an event happens, we assume that the FHCF would leave its pre-event bond proceeds outstanding and issue \$5.4 billion of post-event bonds to fund its maximum potential obligation for the 2020-2021 contract year. For the 2021-2022 contract year, the FHCF can then use its estimated bonding capacity of \$7.2 billion and the \$1.2 billion of reimbursement premiums projected to be accumulated during the subsequent season for total funding sources of \$8.4 billion, or approximately 49% of its potential maximum statutory obligation of \$17 billion for the 2021-2022 contract year. The FHCF would need an additional \$8.6 billion in funding sources in order to reach its maximum statutory obligation of \$17 billion for the 2021-2022 contract year.

(\$ in Billions, Totals may not add due to rounding)		2020-2021 Contract Year	2021-2022 Contract Year
<b>FHCF Potential Coverage Obligation</b>			
<b>FHCF Coverage Obligation</b>	<b>(A)</b>	<b>\$17.0</b>	<b>\$17.0</b>
<b>FHCF Estimated Funding Sources Available</b>			
Projected FHCF Year-End Fund Balance	(B)	\$11.6	\$1.2
Risk Transfer	(C)	\$0.0	\$0.0
2016A Pre-Event Bond Proceeds Available <sup>1</sup>	(D)	\$0.7	\$0.0
<b>Total Liquid Resources Available</b>	<b>(B + C + D) = (E)</b>	<b>\$12.3</b>	<b>\$1.2</b>
<b>Additional Funds / Potential Borrowing Need</b>	<b>(E - A) = (F)</b>	<b>(\$4.7)</b>	<b>(\$15.8)</b>
<b>FHCF Claims-Paying Capacity</b>			
Projected FHCF Year-End Fund Balance	(B)	\$11.6	\$1.2
Risk Transfer	(C)	\$0.0	\$0.0
Estimated FHCF Borrowing Capacity <sup>1</sup>	(G)	\$7.2	\$7.2
<b>Total Estimated Claims-Paying Capacity</b>	<b>(B + C + G) = (H)</b>	<b>\$18.8</b>	<b>\$8.4</b>
<b>Total Estimated Claims-Paying Capacity as a % of FHCF Coverage Obligation</b>			
<b>(H / A) = (I)</b>		<b>111%</b>	<b>49%</b>
<b>Amount Above / (Below) Coverage Obligation</b>			
<b>(H - A) = (J)</b>		<b>\$1.8</b>	<b>(\$8.6)</b>

Totals may not add due to rounding.

<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 2020-2021 contract year in the amount of \$650 million, but we are assuming no pre-event bonds will be used to pay claims for the 2020-2021 contract year as the \$650 million matures on July 1, 2021.

Under this scenario, 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 on the following page based on an “above market” interest rate of 6% over a 30-year period, for informational purposes only. As seen in the table on the following page, even with an “above market” rate of 6%, the FHCF has significant remaining assessment capabilities within its 6% statutory cap.

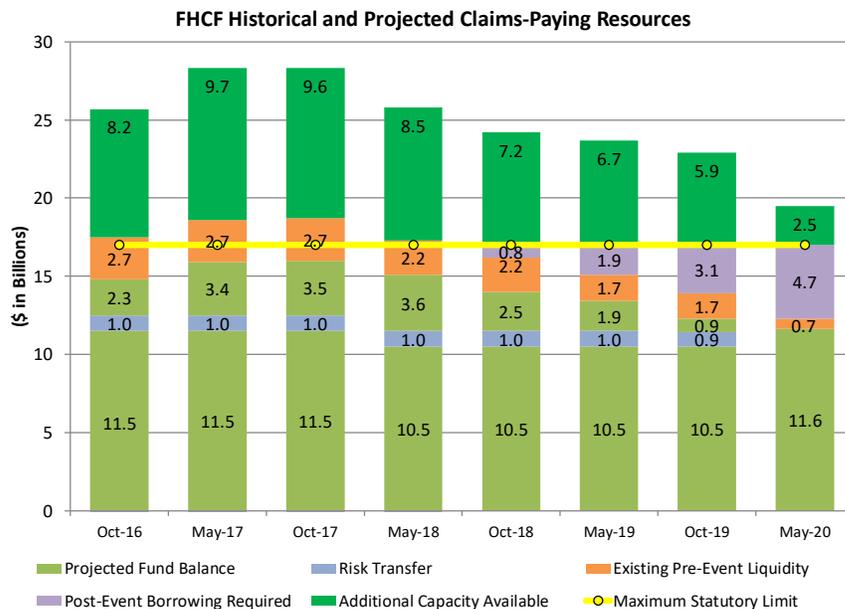


(\$ in Billions)	2020-2021 Contract Year	2021-2022 Contract Year
Total Potential Borrowing	\$5.4	\$7.2
Assessment % if Financed at "Above Market" Rate of 6%	0.73%	0.97%

### 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, the estimated \$6.00 billion of Hurricane Irma losses and \$1.45 billion of Hurricane Michael losses reduced the estimated FHCF’s projected fund balance, which is approximately \$11.6 billion for the 2020-2021 Contract Year. During this time, the senior managers’ estimates of the FHCF’s bonding capacity have stabilized, but have significantly varied during other time periods, 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 current average estimate for 0-12 months of \$7.2 billion is \$1.8 billion lower than it was in October 2019 and reflects current market volatility as a result of COVID-19.

The chart below shows the total estimated initial season claims-paying resources of the FHCF since October 2016 with projected fund balance (light green), existing pre-event liquidity (orange), risk transfer (blue), post-event borrowing required (purple), if needed, and maximum statutory limit (yellow) with additional capacity available above (dark green) the maximum statutory limit.



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.



The chart on the previous page reflects the history of the FHCF’s claims-paying resources. The outstanding pre-event notes, 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 though the range has narrowed and stabilized, 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 2016.

Post-Event Estimated Bonding Capacity Over 12 Months (Senior Managers' Range)									
(\$ in Billions)	Oct-16	May-17	Oct-17	May-18	Oct-18	May-19	Oct-19	May-20	May 2020 - Oct. 2019 Change
Overall Range	\$5.5-\$12	\$5-\$12	\$6-\$12	\$6.5-\$12	\$5.5-\$12	\$6-\$12	\$5.5-\$12	\$4-\$11	↓

The range of estimates shown in the table reflects the fundamental underlying volatility and uncertainty of the markets and the bonding capacity estimating process for the FHCF. 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. While the FHCF has liquid resources that are \$4.7 billion below fully funding the initial season, the projected 0-12 month bonding capacity of \$7.2 billion allows for the FHCF to reach its maximum statutory obligation of \$17 billion with additional bonding capacity of \$1.8 billion. Additionally, the FHCF has additional capacity available after an event for the subsequent season. This additional capacity still does not provide a guaranteed source of liquidity or claims-paying capacity for subsequent seasons, and the actual bonding results achieved by the FHCF after a hurricane could vary substantially from this estimate for subsequent seasons. The FHCF has \$12.3 billion of liquidity, \$4.7 billion below its potential maximum statutory obligation of \$17 billion for the 2020-2021 contract year. For the subsequent season, the FHCF has a projected potential claims-paying capacity of \$8.4 billion, or up to approximately 49% of its maximum statutory obligation of \$17 billion for the 2021-2022 contract year.



## Appendix A – Bonding Capacity Solicitation & Senior Manager Responses

## Sasha Stipanovich

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**From:** Sasha Stipanovich  
**Sent:** Monday, May 4, 2020 11:47 AM  
**Cc:** Kapil Bhatia  
**Subject:** FHCF Bonding Capacity Analysis

FHCF Senior Manager Team:

As always, we need your input in preparation for presenting the FHCF's statutorily required semiannual bonding capacity estimate at the FHCF Advisory Council Meeting scheduled for May 19<sup>th</sup>.

***For the bonding capacity analysis, we would like to know your opinion of the FHCF's tax-exempt and taxable bonding capacity over a 0-12 month and 12-24 month period. Based on the significant increase in the amount of volatility in the marketplace, we are still comfortable including estimates that contain above-market interest rate capacity estimates in recognition of the fact that the FHCF has ample assessment capability within its statutory limits to issue bonds, even at above market rates, if needed.***

We recognize that the market is currently experiencing significant dislocation as a result of COVID-19. While interest rates are near historical lows, credit spreads have widened significantly. At the same time that volatility in the marketplace has dampened municipal issuance, corporate issuance has been strong with over \$525 billion of issuance in the months of March and April. In light of this, please consider the potential use of a benchmark size for all term bonds and corporate CUSIP for each maturity to potentially increase liquidity and demand for the taxable issuance.

In order to prepare the FHCF Bonding Capacity Report for May 2020, we need the following data elements from you by Monday, May 11<sup>th</sup>:

1. Please provide a 30-year tax-exempt scale for the FHCF using the MMD at the close of business Wednesday, May 6<sup>th</sup>. 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 (7/1/21 - 7/1/50) with 5.0% 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).
2. Please provide a 30-year taxable scale using the Treasury curve at the close of business Wednesday, May 6<sup>th</sup>. 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 (7/1/21 - 7/1/50) 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).
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			
Time Period	Tax-Exempt	Taxable	Total
0-12 Months			
12-24 Months			

**We would like to have to your responses back by close of business Monday, May 11<sup>th</sup>.** Additionally, we would like a representative from your firm (banker and/or underwriter) to dial-in during the meeting to answer any questions. If you have any questions or comments, please call or e-mail Kapil Bhatia (727-415-3267, [kapil.bhatia@raymondjames.com](mailto:kapil.bhatia@raymondjames.com)) or Sasha Stipanovich (850-544-1117, [sasha.stipanovich@raymondjames.com](mailto:sasha.stipanovich@raymondjames.com)).

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**RAYMOND JAMES®**

# Memorandum

**To:** Florida Hurricane Catastrophe Fund  
**From:** BofA Securities, Inc.  
**Date:** May 11, 2020  
**Subject:** Florida Hurricane Catastrophe Fund – May 2020 Bonding Capacity Analysis

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

## Market Commentary

The global COVID-19 pandemic has significantly impacted the financial markets around the world. Policymakers have rushed to contain the economic fallout through stimulus and increased market liquidity. The domestic and global economic outlook continue to look grim as the pandemic rages on and fundamental economic measures begin to reflect the measures that policymakers have had to impose to stem the health pandemic. Since our last update to the FHCF, the Federal Reserve has taken a number of measures to maintain market liquidity during the pandemic. In addition to cutting the benchmark rate to 0.0%, the Fed restarted its quantitative easing program and put in place a number of extraordinary facilities meant to support secondary market trading in the mortgage market, corporate market, commercial paper markets, and municipal markets. The U.S. Congress passed and President Trump approved the CARES Act, meant to provide additional economic supports to the US economy through forgivable small business loans, economic stimulus payments, enhanced unemployment support and additional supports for impacted parts of the economy. Despite the extraordinary measures taken by various policymakers, domestic unemployment has been in freefall over the past month and a half with the current unemployment rate at 14.7%. The extraordinary measures the Fed has taken after credit markets seized and liquidity dried up in early to mid-March has helped the corporate market find its footing, settling in with higher credit spreads and issuers finding strong reception primarily due to the various liquidity backstops. On the other hand, the municipal market has still struggled to find its footing with higher credit spreads and lower rated transactions still struggling to access the capital markets.

Municipal bond funds have seen net outflows of approximately \$31.0 billion year to date that has contributed greatly to struggles in the market. Since our last bonding capacity analysis presented at the October 2019 meeting, the municipal yield curve has steepened significantly due to significant reductions in shorter term rates due to investors shifting demand to the shorter end of the yield curve because of economic uncertainty. On the longer end of the tax-exempt MMD curve (13+ years), yields have increased an average of 6 basis points and within 12 years, rates have fallen an average of 23 basis points. Yields in the municipal market have still struggled to find their longer term footing as the pandemic rages and the fallout for issuers has not yet been fully realized. On the other hand, the US Treasury market has faced historically low rates due to a flight to quality with the Treasury yield curve sitting below the MMD yield curve for the past two months and muni-treasury ratios ranging from 145-469% across the curve. In the taxable market, the Treasury curve has also steepened further since our last meeting with the spread between the 1 year and 30 year increasing from 35 bps to 125 bps. Since that time, rates across the UST curve have also decreased between 67 and 157 basis points. New issue supply in the municipal market thus far in 2020 has averaged approximately \$6.2 billion per week, with taxable issuance representing 10.6% of all muni bonds issued this year.

As we have stated in the past, and especially true in this market, despite the market dynamics in play in the current environment, a transaction or series of transactions by the FHCF and possibly other insurance-related entities in the State of Florida (Citizens, FIGA) after a hurricane event has 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.

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1. Please provide a 30-year tax-exempt scale for the FHCF using the MMD at the close of business Wednesday, May 6<sup>th</sup>. 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 (7/1/21 - 7/1/50) with 5.0% 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					
Term	Maturity (July 1)	Coupon	MMD	Spread	Yield
1	2021	5.00%	1.24%	40	1.64%
2	2022	5.00%	1.20%	45	1.65%
3	2023	5.00%	1.20%	48	1.68%
4	2024	5.00%	1.20%	52	1.72%
5	2025	5.00%	1.20%	56	1.76%
6	2026	5.00%	1.21%	60	1.81%
7	2027	5.00%	1.24%	63	1.87%
8	2028	5.00%	1.28%	65	1.93%
9	2029	5.00%	1.33%	68	2.01%
10	2030	5.00%	1.38%	70	2.08%
11	2031	5.00%	1.43%	75	2.18%
12	2032	5.00%	1.47%	75	2.22%
13	2033	5.00%	1.51%	75	2.26%
14	2034	5.00%	1.55%	75	2.30%
15	2035	5.00%	1.59%	75	2.34%
16	2036	5.00%	1.63%	75	2.38%
17	2037	5.00%	1.67%	75	2.42%
18	2038	5.00%	1.71%	75	2.46%
19	2039	5.00%	1.75%	75	2.50%
20	2040	5.00%	1.79%	75	2.54%
21	2041	-	1.82%	-	-
22	2042	-	1.85%	-	-
23	2043	-	1.88%	-	-
24	2044	-	1.91%	-	-
25	2045	5.00%	1.92%	77	2.69%
26	2046	-	1.93%	-	-
27	2047	-	1.94%	-	-
28	2048	-	1.95%	-	-
29	2049	-	1.96%	-	-
30	2050	5.00%	1.97%	78	2.75%

2. Please provide a 30-year taxable scale using the Treasury curve at the close of business Wednesday, May 6<sup>th</sup>. 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 (7/1/21 - 7/1/50) 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	2021	-	-	-	-
2	2022	-	-	-	-
3	2023	-	-	-	-
4	2024	-	-	-	-
5	2025	2.50%	0.37%	213	2.50%
6	2026	-	-	-	-
7	2027	-	-	-	-
8	2028	-	-	-	-
9	2029	-	-	-	-
10	2030	2.97%	0.72%	225	2.97%
11	2031	-	-	-	-
12	2032	-	-	-	-
13	2033	-	-	-	-
14	2034	-	-	-	-
15	2035	-	-	-	-
16	2036	-	-	-	-
17	2037	-	-	-	-
18	2038	-	-	-	-
19	2039	-	-	-	-
20	2040	-	-	-	-
21	2041	-	-	-	-
22	2042	-	-	-	-
23	2043	-	-	-	-
24	2044	-	-	-	-
25	2045	-	-	-	-
26	2046	-	-	-	-
27	2047	-	-	-	-
28	2048	-	-	-	-
29	2049	-	-	-	-
30	2050	3.91%	1.41%	250	3.91%

- 
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.
- 

In the table below, we have provided our current tax-exempt and taxable “unconstrained” FHCF capacity estimates. We believe that sufficient demand exists at these capacity levels to complete a transaction of the sizes provided below and the risk of cross-market cannibalization is low.

<b>FLORIDA HURRICANE CATASTROPHE FUND POST-EVENT MARKET CAPACITY (\$ BILLION)</b>			
<b>Time Period</b>	<b>Tax-Exempt</b>	<b>Taxable</b>	<b>Total</b>
0-12 Months	\$1.5-2.5	\$3.5-5.5	\$5.0-8.0
12-24 Months	\$1.5-2.5	\$3.5-5.5	\$5.0-8.0
<b>0-24 Months</b>	<b>\$3.0-5.0</b>	<b>\$7.0-11.0</b>	<b>\$10.0-16.0</b>

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# Memorandum

To: Florida Hurricane Catastrophe Fund  
 From: Citigroup Global Markets Inc. ("Citi")  
 Date: May 11, 2020  
 Re: FHCF May 2020 Capacity Analysis

Citigroup is pleased to provide the Florida Hurricane Catastrophe Fund (the "FHCF") with an updated estimated post-event bond capacity analysis.

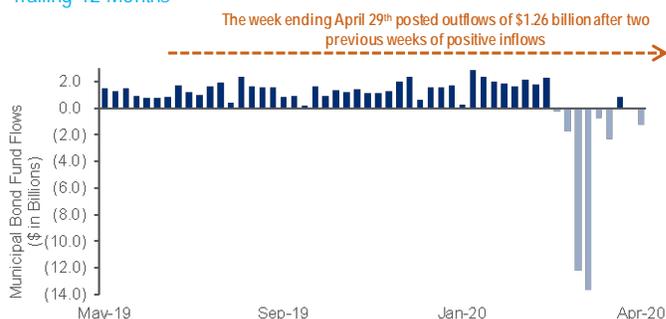
The municipal market at the beginning of 2020 was characterized by absolute rates near or at all-time lows, tighter credit spreads, and record municipal fund inflows. However, we began to see a shift in early March of 2020 as investors began to sell off U.S. equities and municipals in a flight-to-quality response to the spreading of the COVID-19 pandemic coupled with the dislocation of the oil market. From a monetary policy perspective, the Federal Reserve enacted a series of rates cuts, including two emergency rate cuts bringing the fed funds rate target range to 0.00 - 0.25%. Other initiatives have included restoring the commercial paper funding facility, re-launch of the Primary Dealer Credit Facility, and establishing the Money Market Mutual Fund Liquidity Facility with \$10 billion of Treasury credit protection to enhance market liquidity. From a fiscal policy perspective, the federal government has enacted several phases of the stimulus plan with Phases 1-3.5 providing \$2.6 trillion in federal government support. Phases 4 and 5 of the federal government's response should provide additional stability, though scope and tenor is uncertain.

Most recently in the municipal market, the theme has been caution and liquidity. Bond fund flows were moderately negative last week at -\$1.26 billion. The \$6.7 billion primary market supply was digested, although requiring greater new issue concessions and spread to price transactions as overall liquidity remained challenged. Recent transactions have come as "dual-tracked" and have been generally priced to sell, with some downsized to fit interest and others that have elected to go "day-to-day" and wait for a more positive tone.

**Expectations of Fed Change in Interest Rates (Market View)**  
 The market is pricing in slightly lower rates throughout the next year



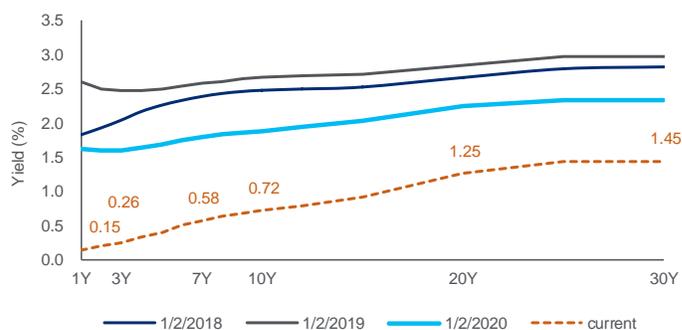
**Weekly Mutual Fund Flows**  
 Trailing 12 Months



**Yield Curve Environment.** Market dynamics have continued to pressure interest rates. Dovish global central bank policies amid COVID-19 uncertainty and heightened volatility have contributed to a rally in Treasuries. Notably, the 30-Year Treasury recently hit a historic low on March 9, 2020. As of May 11, 2020, the 30-Year Treasury has decreased by 89 basis points YTD to 1.45%, leading to a steeper Treasury yield curve with 130 basis points of spread between the 1-Year and 30-Year Treasury Rates.

**US Treasury Yield Curve**

The yield curve has fallen significantly as the coronavirus outbreak has prompted the Federal Reserve to cut interest rates as investors put on a flight-to-quality trade



1. Please provide a 30-year tax-exempt scale for the FHCF using the MMD at the close of business Wednesday, May 6th. 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 (7/1/21 - 7/1/50) with 5.0% 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				
Year	May 6 MMD <sup>1</sup>	MMD Spread <sup>2</sup>	Coupon	Base Yield
2021	0.75%	50	5.00%	1.25%
2022	0.80%	55	5.00%	1.35%
2023	0.84%	60	5.00%	1.44%
2024	0.90%	65	5.00%	1.55%
2025	0.96%	70	5.00%	1.66%
2026	1.01%	75	5.00%	1.76%
2027	1.06%	80	5.00%	1.86%
2028	1.12%	85	5.00%	1.97%
2029	1.17%	90	5.00%	2.07%
2030	1.24%	95	5.00%	2.19%
2031	1.34%	100	5.00%	2.34%
2032	1.44%	100	5.00%	2.44%
2033	1.54%	100	5.00%	2.54%
2034	1.58%	100	5.00%	2.58%
2035	1.63%	100	5.00%	2.63%
2036	1.67%	100	5.00%	2.67%
2037	1.72%	100	5.00%	2.72%
2038	1.76%	100	5.00%	2.76%
2039	1.80%	100	5.00%	2.80%
2040	1.84%	100	5.00%	2.84%
2041	1.88%			
2042	1.92%			
2043	1.95%			
2044	1.98%			
2045	2.00%	100	5.00%	3.00%
2046	2.01%			
2047	2.02%			
2048	2.03%			
2049	2.04%			
2050	2.05%	100	5.00%	3.05%

1. July Interpolated MMD.  
 2. Assumes a 10-year par call.

2. Please provide a 30-year taxable scale using the Treasury curve at the close of business Wednesday, May 6th. 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 (7/1/21 - 7/1/50) 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					
Year	TSY	May 6 TSY	TSY Spread <sup>1</sup>	Coupon	Yield
2021	2 Yr	0.20%	145	1.65%	1.65%
2022	2 Yr	0.20%	150	1.70%	1.70%
2023	3 Yr	0.26%	160	1.86%	1.86%
2024	5 Yr	0.40%	165	2.05%	2.05%
2025	5 Yr	0.40%	170	2.10%	2.10%
2026	7 Yr	0.58%	175	2.33%	2.33%
2027	7 Yr	0.58%	185	2.43%	2.43%
2028	10 Yr	0.72%	190	2.62%	2.62%
2029	10 Yr	0.72%	195	2.67%	2.67%
2030	10 Yr	0.72%	200	2.72%	2.72%
2031	10 Yr	0.72%	205	2.77%	2.77%
2032	10 Yr	0.72%	210	2.82%	2.82%
2033	10 Yr	0.72%	215	2.87%	2.87%
2034	10 Yr	0.72%	220	2.92%	2.92%
2035	10 Yr	0.72%	225	2.97%	2.97%
2036					
2037					
2038					
2039					
2040	30 Yr	1.45%	215	3.60%	3.60%
2041					
2042					
2043					
2044					
2045					
2046					
2047					
2048					
2049					
2050	30 Yr	1.45%	235	3.80%	3.80%

1. Assumes a make-whole call.

In the current market environment, Citi estimates that index-eligibility and/or issuing with a corporate CUSIP can provide a spread benefit of approximately 10 basis points.

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.

Time Period	Tax-Exempt	Taxable	Total
0-12 Months	\$2.0-2.5bn	\$2.0-3.0bn	\$4.0-5.5bn
12-24 Months	\$2.0-2.5bn	\$3.0-4.0bn	\$5.0-6.5bn
<b>Total</b>	<b>\$4.0-5.0bn</b>	<b>\$5.0-7.0bn</b>	<b>\$9.0-12.0bn</b>

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

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# J.P.Morgan

To: Florida Hurricane Catastrophe Fund  
From: J.P. Morgan  
Date: May 11, 2020  
Subject: FHCF Estimated Bonding Capacity and Pricing

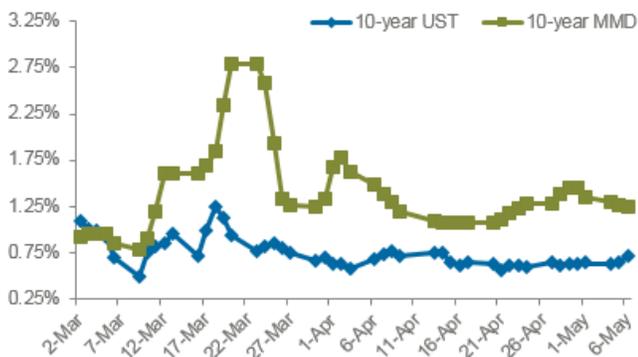
Please find below J.P. Morgan's estimate of the Florida Hurricane Catastrophe Fund's ("FHCF") potential bonding capacity over the next 0-12 and 12-24 months, based on current market conditions. In addition, we have provided indicative pricing for tax-exempt and taxable offerings, as requested.

## Market Update and Recent Developments<sup>1</sup>

Since the outbreak of COVID-19 in the U.S. in early March, the capital markets have experienced unprecedented volatility. The municipal market has seen the largest outflows in history, with cumulative outflows of \$20.5 billion YTD. The MMD index sold-off sharply, increasing 196 - 207bps across the yield curve during the middle of March, before peaking on March 24th, effectively halting new issue in both municipal and corporate markets. Following a 100bps rate cut on March 15th, the Fed ramped up efforts to stabilize markets and announced over \$2 trillion worth of aid programs and continues to act with the reintroduction of financing vehicles not seen since the financial crisis of 2008-2009. Despite MMD rallying approximately 150 basis points or more, depending on maturity, from the March peak, the municipal market remains dislocated from the Treasury market as MMD/UST ratios remain near 150% at the long-end of the curve, and over 400% at the short-end of the curve. Credit spreads have also increased and remain elevated above pre-COVID levels (which were at their all-time lows) as issuers begin to test the market over the last several weeks as municipal primary issuance is beginning a path back to normalization. Additional themes seen in the market include:

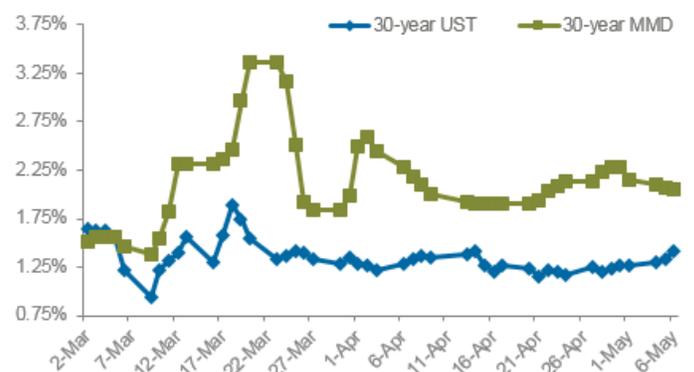
- Both tax-exempt and taxable fixed rates, particularly on the long-end of the yield curve, remain historically attractive – from both a benchmark and credit spread perspective
  - 30-year UST was 1.39% as of May 6th, only 45 bps above its all-time lows, while 30-year MMD is currently 2.09% having been higher more than 99% of the time over the last 20 years
- Strong relative value of long-dated fixed rate debt, particularly taxable, as both yield curves are historically flat – indicates favorable environment to extend duration of fixed rate debt
  - The difference between 30-year and 2-year UST is currently 121 bps compared to a 126 bps 5-year average, while the 30-year vs. 2-year MMD exhibits 126 bps of steepness compared to a 160 bps 5-year average
- Both tax-exempt and taxable municipal supply has been limited given market volatility; however, recent technicals are supportive of issuing amid positive municipal bond fund inflows; as a result the primary issuance calendar is starting to build
  - \$513 million of inflows for the period ending April 15, and \$74 million of inflows for the period ending April 22 halted the 5 week record breaking outflows

10Y MMD and UST yields



Source: Thomson Reuters Municipal Market Data, J.P. Morgan; as of 5/6/2020

30Y MMD and UST yields



<sup>1</sup> J.P. Morgan, Thomson Reuters, Bloomberg

# J.P.Morgan

## Potential Market Capacity

Based on market conditions as of close of business Wednesday, May 6<sup>th</sup>, J.P. Morgan estimates that FHCF could sell \$3-4 billion of tax-exempt bonds and \$3-4 billion of taxable bonds over the next 0-12 months at the market rate assumptions provided.

Over the following 12-24 month period, FHCF could sell an additional \$2-3 billion of tax-exempt bonds and \$2-3 billion of taxable bonds. This would provide FHCF a total post-event market capacity of \$5-7 billion tax-exempt and \$5-7 billion taxable, for a total of \$10-14 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 Wednesday, May 6<sup>th</sup>. The scales assume FHCF's current underlying ratings of Aa3/AA/AA.

Indicative Post-Event Market Capacity as of May 6, 2020			
Time Period	Tax-exempt	Taxable	Total
0 - 12 Months	\$3-4 billion	\$3-4 billion	\$6-8 billion
12 - 24 Months	\$2-3 billion	\$2-3 billion	\$4-6 billion
<b>Total</b>	<b>\$5-7 billion</b>	<b>\$5-7 billion</b>	<b>\$10-14 billion</b>

# J.P.Morgan

## Florida Hurricane Catastrophe Fund - Tax-exempt Scale

Year	Maturity	Sinker/Term	Int. MMD	Spread	Coupon	Stated Yield
1	7/1/2021		0.75%	50	3.00%	1.25%
2	7/1/2022		0.80%	55	4.00%	1.35%
3	7/1/2023		0.84%	60	5.00%	1.44%
4	7/1/2024		0.90%	65	5.00%	1.55%
5	7/1/2025		0.96%	67	5.00%	1.63%
6	7/1/2026		1.01%	70	5.00%	1.71%
7	7/1/2027		1.06%	73	5.00%	1.79%
8	7/1/2028		1.12%	75	5.00%	1.87%
9	7/1/2029		1.17%	77	5.00%	1.94%
10	7/1/2030		1.24%	80	5.00%	2.04%
11	7/1/2031		1.34%	83	5.00%	2.17%
12	7/1/2032		1.44%	85	5.00%	2.29%
13	7/1/2033		1.54%	85	5.00%	2.39%
14	7/1/2034		1.58%	85	5.00%	2.43%
15	7/1/2035		1.63%	85	5.00%	2.48%
16	7/1/2036		1.67%	85	5.00%	2.52%
17	7/1/2037		1.72%	85	5.00%	2.57%
18	7/1/2038		1.76%	85	5.00%	2.61%
19	7/1/2039		1.80%	85	5.00%	2.65%
20	7/1/2040		1.84%	85	5.00%	2.69%
21	7/1/2041	*	1.88%			
22	7/1/2042	*	1.92%			
23	7/1/2043	*	1.95%			
24	7/1/2044	*	1.98%			
25	7/1/2045	T	2.00%	85	5.00%	2.85%
26	7/1/2046	*	2.01%			
27	7/1/2047	*	2.02%			
28	7/1/2048	*	2.03%			
29	7/1/2049	*	2.04%			
30	7/1/2050	T	2.05%	85	5.00%	2.90%

Assumes MMD as of close of business May 6, 2020 and an optional redemption date of 7/1/2030 at par.

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## Florida Hurricane Catastrophe Fund - Taxable Scale

Year	Maturity	Sinker/Term	UST	Spread	Coupon	Stated Yield
1	7/1/2021		0.15%	120	1.35%	1.35%
2	7/1/2022		0.18%	130	1.48%	1.48%
3	7/1/2023		0.25%	140	1.65%	1.65%
4	7/1/2024		0.38%	150	1.88%	1.88%
5	7/1/2025		0.38%	160	1.98%	1.98%
6	7/1/2026		0.57%	165	2.22%	2.22%
7	7/1/2027		0.57%	175	2.32%	2.32%
8	7/1/2028		0.71%	175	2.46%	2.46%
9	7/1/2029		0.71%	185	2.56%	2.56%
10	7/1/2030		0.71%	190	2.61%	2.61%
11	7/1/2031		0.71%	195	2.66%	2.66%
12	7/1/2032		0.71%	200	2.71%	2.71%
13	7/1/2033		0.71%	205	2.76%	2.76%
14	7/1/2034		0.71%	210	2.81%	2.81%
15	7/1/2035		0.71%	215	2.86%	2.86%
16	7/1/2036	*	1.41%			
17	7/1/2037	*	1.41%			
18	7/1/2038	*	1.41%			
19	7/1/2039	*	1.41%			
20	7/1/2040	T	1.41%	185	3.26%	3.26%
21	7/1/2041	*	1.41%			
22	7/1/2042	*	1.41%			
23	7/1/2043	*	1.41%			
24	7/1/2044	*	1.41%			
25	7/1/2045	*	1.41%			
26	7/1/2046	*	1.41%			
27	7/1/2047	*	1.41%			
28	7/1/2048	*	1.41%			
29	7/1/2049	*	1.41%			
30	7/1/2050	T	1.41%	190	3.31%	3.31%

*Assumes UST rates as of close of business May 6, 2020, and a make-whole call.*

These levels are based on a municipal structure. Index eligible, corporate CUSIP maturities are expected to price with approximately 10 bps of spread benefit compared to the scale above.

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To: Florida Hurricane Catastrophe Fund

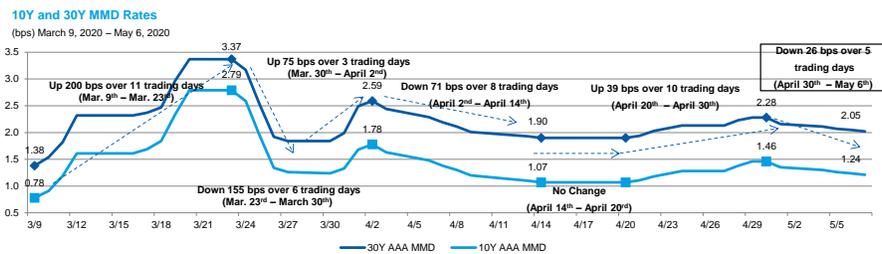
Date: May 11, 2020

From: Morgan Stanley

Subject: Semi-Annual Bonding Capacity Analysis – May 2020 Semi-Annual Bonding Capacity

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

**MUNICIPAL MARKET OVERVIEW.** As the FHCF is aware, the municipal market has been extremely volatile since March due to economic concerns surrounding the Coronavirus pandemic. As shown in the chart to the right, MMD intraday rate movements



have been as large as 50 basis points. Moreover, tax-exempt rates significantly and rapidly dislocated from Treasury rates, hitting historically high MMD/UST ratios. This was driven by a dramatic reversal in fund flows after more than a year of inflows into municipal funds. Beginning around March 9th, large negative outflows forced bond funds to liquidate their municipal positions to meet redemptions. These large outflows peaked on March 19th at \$4.5 billion. During this period, the municipal primary market effectively shuttered for two weeks. Morgan Stanley re-opened the new issue market the week of March 23rd by leading six of the eight senior managed transactions that week.

Today, the municipal new issue market is currently “open” and rates have substantially normalized due to a number of factors, including participation by retail buyers and cross-over accounts; the passage of Federal stimulus; and actions by the Federal Reserve including the announcement of the Municipal Liquidity Facility to shore up the market. That said, supply remains muted and the market is most hospitable for high-grade issuers. As of May 6<sup>th</sup>, the municipal market remains sensitive but has a more positive tone, with UST rates having declined 100-132 basis points across the curve year-to-date, while 10Y and 30Y MMD/UST ratios are at 179% and 149%, respectively. We have also seen growing bid activity on competitive issues. Spreads remain somewhat elevated vs. levels typically observed in more stable markets.

**IMPACT OF THE CORONAVIRUS ON CREDIT VIEWS/APPETITE.** The outbreak of the Coronavirus in the U.S. and the measures undertaken to prevent the spread of the virus have had a drastic negative impact nationally. As mentioned above, the municipal bond market has reopened to primary issuance with most of the offerings coming from well-known borrowers, utilities, and generally double-A level or better credits. These credits generally have seen wider credit spreads relative to conditions prior to March 2020. The high yield municipal bond market remains closed to new issues. Since the reopening of the high grade market, it is evident that while deals can be successfully completed, pricing spreads may be wider today.

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**PRICING VIEWS.** Current 30-year UST yields are 70 basis points lower than where they were at the time of our last bonding capacity analysis in October 2019. Similar to UST yields, current 30-year MMD yields have declined 58 basis points since the October 2019. However, taxable and tax-exempt spreads have increased since October 2019. We estimate 30-year tax-exempt and taxable spreads to be 60 and 90 bps wider than in October 2019. Our spreads consider the potential use of a benchmark size for all taxable term bonds and the potential use of corporate CUSIPs to increase liquidity and demand. 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.

# Morgan Stanley

1. Please provide a 30-year tax-exempt scale for the FHCF using the MMD at the close of business Wednesday, May 6th. This scale should be the one that you believe reflects a “market” scale given the FHCF’s credit with no capacity constraints. Please use serial bonds and 20, 25, and/or 30-year term bonds, as needed, over a 30-year amortization period (7/1/21 - 7/1/50) with 5.0% coupons throughout when writing the scale. Base the scale on an uninsured financing given the FHCF’s current underlying ratings of Aa3/AA/AA (Moody’s / S&P / Fitch).

FHCF Pricing Views: 30-Year Tax-Exempt Scale					
Year	Maturity	MMD (5/06/2020) <sup>(1)</sup>	Spread (bps)	Coupon	Yield
1	2021	0.75%	50	5.00%	1.25%
2	2022	0.80%	60	5.00%	1.40%
3	2023	0.84%	70	5.00%	1.54%
4	2024	0.90%	75	5.00%	1.65%
5	2025	0.96%	80	5.00%	1.76%
6	2026	1.01%	85	5.00%	1.86%
7	2027	1.06%	90	5.00%	1.96%
8	2028	1.12%	95	5.00%	2.07%
9	2029	1.17%	98	5.00%	2.15%
10	2030	1.24%	100	5.00%	2.24%
11	2031	1.34%	100	5.00%	2.34%
12	2032	1.44%	100	5.00%	2.44%
13	2033	1.54%	100	5.00%	2.54%
14	2034	1.58%	100	5.00%	2.58%
15	2035	1.63%	100	5.00%	2.63%
16	2036	1.67%	100	5.00%	2.67%
17	2037	1.72%	100	5.00%	2.72%
18	2038	1.76%	100	5.00%	2.76%
19	2039	1.80%	100	5.00%	2.80%
20	2040	1.84%	100	5.00%	2.84%
21	2041				
22	2042				
23	2043				
24	2044				
25	2045	2.00%	100	5.00%	3.00%
26	2046				
27	2047				
28	2048				
29	2049				
30	2050	2.05%	100	5.00%	3.05%

**Notes:**

Based on July Interpolated MMD<sup>(1)</sup>

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2. Please provide a 30-year taxable scale using the Treasury curve at the close of business Wednesday, May 6th. This scale should be the one that you believe reflects a “market” scale given the FHCF’s credit with no capacity constraints. Please use serial bonds and 20, 25, and/or 30-year term bonds, as needed, over a 30-year amortization period (7/1/21 - 7/1/50) 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					
Year	Maturity	UST (5/06/2020)	Spread (bps)	Coupon	Yield
1	2021	0.18%	115	1.33%	1.33%
2	2022	0.18%	125	1.43%	1.43%
3	2023	0.25%	135	1.60%	1.60%
4	2024	0.38%	145	1.83%	1.83%
5	2025	0.38%	150	1.88%	1.88%
6	2026	0.57%	165	2.22%	2.22%
7	2027	0.57%	165	2.22%	2.22%
8	2028	0.71%	175	2.46%	2.46%
9	2029	0.71%	175	2.46%	2.46%
10	2030	0.71%	180	2.51%	2.51%
11	2031	0.71%	187.5	2.59%	2.59%
12	2032	0.71%	195	2.66%	2.66%
13	2033	0.71%	205	2.76%	2.76%
14	2034	0.71%	210	2.81%	2.81%
15	2035	0.71%	215	2.86%	2.86%
16	2036				
17	2037				
18	2038				
19	2039				
20	2040	1.41%	195	3.36%	3.36%
21	2041				
22	2042				
23	2043				
24	2044				
25	2045				
26	2046				
27	2047				
28	2048				
29	2049				
30	2050	1.41%	200	3.41%	3.41%

# Morgan Stanley

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.

<b>FHCF Post-Event Market Capacity (\$ in Billions)</b>			
<b>Time Period</b>	<b>Tax-Exempt</b>	<b>Taxable</b>	<b>Total</b>
0-12 Months	1.0 to 3.0	5.0 to 7.0	6.0 to 10.0
12-24 Months	4.0 to 5.0	7.0 to 12.0	11.0 to 17.0
<b>Total</b>	<b>5.0 to 8.0</b>	<b>12.0 to 19.0</b>	<b>17.0 to 24.0<sup>(1)</sup></b>

<sup>(1)</sup>The \$24 billion reflects our estimate that there could be overlap in tax-exempt/taxable capacity of \$3-5 billion.

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**To:** Florida Hurricane Catastrophe Fund  
**From:** Wells Fargo Securities  
**Date:** May 7, 2020  
**Re:** Florida Hurricane Catastrophe Fund Bonding Capacity Analysis for May 2020

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Wells Fargo Securities (“Wells Fargo”) is pleased to provide the Florida Hurricane Catastrophe Fund (“FHCF”) with our estimate of FHCF bonding capacity for May 2020. 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 of the Wells Fargo team if we can provide additional information or address any questions regarding these estimates.

Wells Fargo believes that conditions in the municipal market have begun to stabilize, however, recent turbulence has reduced our current capacity estimates from \$14.0 - \$20.0 billion to \$13.0 billion - \$19.0 billion in combined tax-exempt and taxable bonds over a 24-month time horizon. As in our previous bonding capacity estimates, the scales that we have provided for taxable and tax-exempt FHCF bonds, based on market conditions as of May 6, 2020, both assume a \$3 billion issuance amortized in discrete \$100 million amounts over 30 years. We believe this level of issuance falls within the market’s current capacity for FHCF’s debt.

The landscape of the municipal market changed considerably in March due to COVID-19 with substantial investor outflows that contributed to an increase in interest rates and decline in investor demand. Conditions improved in April but given the unpredictable nature of the pandemic, market conditions can shift dramatically from one week to the next. During the recent challenges, Wells Fargo played a meaningful role supporting the primary and secondary market. In the primary market, WFS was the number #1 ranked underwriter from 3/16 to 4/24 serving as a senior managing underwriter on 16 transactions.<sup>1</sup> In the secondary market, WFS traded \$14.5 billion in par during the month of March which represented over 8% of the total trades completed in March, 2020.<sup>2</sup> **Wells Fargo has executed more than \$1.4 billion of secondary market trades in FHCF bonds since the beginning of 2016 (over \$300 million of trades since 2019)<sup>3</sup>, and our estimates for taxable spreads in this memorandum are informed by our trading activities supporting FHCF’s bonds in the secondary market.**

The new issue market is showing signs of a revival (at least for some) as supply continues to be dominated by AA-rated or better higher education and GO/essential service credits. US Treasury and MMD rates suffered a very turbulent March, however, they have begun to stabilize over the past month. Since the beginning of the year, the benchmark 10-year US Treasury has dropped 116 basis points, with the current rate being 0.72%.<sup>4</sup> Since our last proposal to FHCF on March 11th, our estimated taxable credit spreads for FHCF have widened approximately 60-65 basis points in the 3 to 7-year tenors while the 10-year US Treasury has dropped 10 basis points.<sup>5</sup> Tax-exempt rates have dipped significantly as well: 10-year MMD has dropped 20 basis points since the beginning of the year, with the current rate being 1.24%.<sup>6</sup>

Wells Fargo appreciates the opportunity to present our analysis of FHCF’s current bonding capacity. Although current market conditions are still fluid, we believe FHCF would be able to execute one or more transactions in an aggregate amount equal to or greater than its potential capital market funding needs. We will continue to monitor market conditions on FHCF’s behalf and keep you informed of market developments that may affect FHCF’s future bonding capacity.

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<sup>1</sup>Source: Thomson Reuters SDC, represents all negotiated transactions from March 16, 2020 to April 14, 2020 greater than \$40 million in par amount; inclusive of non-profit healthcare and higher education transactions issued with a corporate CUSIP.

<sup>2</sup>Sources: Bloomberg, EMMA, only reports trades greater than \$1 million.

<sup>3</sup>Source: Wells Fargo Secondary Trading Database.

<sup>4</sup>Source: US Treasury as of May 6, 2020.

<sup>5</sup>Sources: Wells Fargo Underwriting Desk; US Treasury as of May 6, 2020 and March 11, 2020

<sup>6</sup>Source: Thomson Reuters TM3 as of May 6, 2020.



1. Please provide a 30-year tax-exempt scale for the FHCF using the MMD at the close of business Wednesday, May 6th. 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 (7/1/21 - 7/1/50) with 5.0% 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).

Florida Hurricane Catastrophe Fund						
Indicative Tax-Exempt Scale						
Market Rates as of May 6, 2020						
Maturity	MMD	Spread (bps)	Coupon	Yield	Price (\$)	YTM
07/01/2021	0.75%	+50	5.00%	1.25%	103.715	--
07/01/2022	0.80%	+54	5.00%	1.34%	107.199	--
07/01/2023	0.84%	+58	5.00%	1.42%	110.478	--
07/01/2024	0.90%	+62	5.00%	1.52%	113.455	--
07/01/2025	0.96%	+65	5.00%	1.61%	116.223	--
07/01/2026	1.01%	+68	5.00%	1.69%	118.810	--
07/01/2027	1.06%	+71	5.00%	1.77%	121.177	--
07/01/2028	1.12%	+73	5.00%	1.85%	123.323	--
07/01/2029	1.17%	+75	5.00%	1.92%	125.345	--
07/01/2030	1.24%	+75	5.00%	1.99%	127.172	--
07/01/2031	1.34%	+75	5.00%	2.09%	126.137	2.30%
07/01/2032	1.44%	+75	5.00%	2.19%	125.113	2.56%
07/01/2033	1.54%	+75	5.00%	2.29%	124.098	2.78%
07/01/2034	1.58%	+75	5.00%	2.33%	123.695	2.93%
07/01/2035	1.63%	+75	5.00%	2.38%	123.193	3.06%
07/01/2036	1.67%	+75	5.00%	2.42%	122.793	3.17%
07/01/2037	1.72%	+75	5.00%	2.47%	122.296	3.28%
07/01/2038	1.76%	+100	4.00%	2.76%	110.771	3.21%
07/01/2039	1.80%	+100	4.00%	2.80%	110.403	3.26%
07/01/2040	1.84%	+100	4.00%	2.84%	110.036	3.31%
07/01/2041	1.88%	--	--	--	--	--
07/01/2042	1.92%	--	--	--	--	--
07/01/2043	1.95%	--	--	--	--	--
07/01/2044	1.98%	--	--	--	--	--
07/01/2045	2.00%	+75	5.00%	2.75%	119.554	3.78%
07/01/2046	2.01%	--	--	--	--	--
07/01/2047	2.02%	--	--	--	--	--
07/01/2048	2.03%	--	--	--	--	--
07/01/2049	2.04%	--	--	--	--	--
07/01/2050	2.05%	+75	5.00%	2.80%	119.072	3.91%

Please note that the tax-exempt scale shown above assumes that the bonds would be issued with a 10-year par call provision. Bond prices shown in the table assume a July 1, 2020 delivery date, and the 2045 and 2050 maturities represent term bonds.



2. Please provide a 30-year taxable scale using the Treasury curve at the close of business Wednesday, May 6th. 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 (7/1/21 - 7/1/50) 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).

Florida Hurricane Catastrophe Fund Indicative Taxable Scale Market Rates as of May 6, 2020						
Maturity	UST	Spread (bps)	Coupon	Yield	Price (\$)	YTM
07/01/2021	0.17%	+120	1.37%	1.37%	100.000	--
07/01/2022	0.17%	+125	1.42%	1.42%	100.000	--
07/01/2023	0.24%	+130	1.54%	1.54%	100.000	--
07/01/2024	0.37%	+130	1.67%	1.67%	100.000	--
07/01/2025	0.37%	+140	1.77%	1.77%	100.000	--
07/01/2026	0.57%	+140	1.97%	1.97%	100.000	--
07/01/2027	0.57%	+150	2.07%	2.07%	100.000	--
07/01/2028	0.72%	+150	2.22%	2.22%	100.000	--
07/01/2029	0.72%	+155	2.27%	2.27%	100.000	--
07/01/2030	0.72%	+160	2.32%	2.32%	100.000	--
07/01/2031	0.72%	+170	2.42%	2.42%	100.000	--
07/01/2032	0.72%	+180	2.52%	2.52%	100.000	--
07/01/2033	0.72%	+190	2.62%	2.62%	100.000	--
07/01/2034	0.72%	+200	2.72%	2.72%	100.000	--
07/01/2035	0.72%	+210	2.82%	2.82%	100.000	--
07/01/2036	1.41%	--	--	--	--	--
07/01/2037	1.41%	--	--	--	--	--
07/01/2038	1.41%	--	--	--	--	--
07/01/2039	1.41%	--	--	--	--	--
07/01/2040	1.41%	+175	3.16%	3.16%	100.000	--
07/01/2041	1.41%	--	--	--	--	--
07/01/2042	1.41%	--	--	--	--	--
07/01/2043	1.41%	--	--	--	--	--
07/01/2044	1.41%	--	--	--	--	--
07/01/2045	1.41%	--	--	--	--	--
07/01/2046	1.41%	--	--	--	--	--
07/01/2047	1.41%	--	--	--	--	--
07/01/2048	1.41%	--	--	--	--	--
07/01/2049	1.41%	--	--	--	--	--
07/01/2050	1.41%	+200	3.41%	3.41%	100.000	--

Please note that the indicative taxable scale shown above assumes that the bonds would be issued with a 10-year par call provision. Bond prices shown in the table assume a July 1, 2020 delivery date, and the 2040 and 2050 maturities represent term bonds.

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			
Time Period	Tax-Exempt	Taxable	Total
0-12 Months	\$5.0 - \$7.0 billion	\$3.0 - \$4.0 billion	\$8.0 - \$11.0 billion
12-24 Months	\$3.0 - \$5.0 billion	\$2.0 - \$3.0 billion	\$5.0 - \$8.0 billion

The capacity estimates shown in the table above 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.

## Important Information & Disclaimer

This document and any other materials accompanying this document (collectively, the “Materials”) are provided for general informational purposes only. By accepting any Materials, the recipient acknowledges and agrees to the matters set forth below.

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**Wells Fargo Bank, N.A. (“WFBNA”), as potential derivatives provider, and Wells Fargo Securities, as potential underwriter or placement agent, (collectively, for purposes hereof, “we”, or “Wells Fargo”) are providing the information contained in the Materials for discussion purposes only in anticipation of, or in connection with, engaging in arm’s length commercial transactions with you in which Wells Fargo would be acting solely as a principal or agent, as applicable, and not as a municipal advisor, financial advisor or fiduciary to you or any other person or entity regardless of whether we, or an affiliate has or is currently acting as such on a separate transaction (the use of the term “agent” does not imply any fiduciary relationship).**

These Materials are being provided to you for the purpose of working with you as an underwriter or placement agent (collectively, “underwriter”) and/or derivatives provider on the transaction(s) described in the Materials. As part of its services as underwriter, WFS may provide information concerning the structure, timing, terms, and other similar matters concerning the issue of municipal securities that WFS proposes to underwrite as described in the Materials. The Materials may also contain such information. Any such information has been, and would be, provided by WFS in the context of serving as an underwriter and not as your municipal or financial advisor. Additionally, WFBNA, as derivatives provider, and WFS, as underwriter, have financial and other interests that differ from your interests (or those of the issuer). In its capacity as underwriter, WFS’ primary role would be to purchase securities from you (or the issuer in the case of a conduit transaction) for resale to investors, or arrange for the placement of securities with investors on your behalf. Wells Fargo will not have any duties or liability to any person or entity in connection with the information being provided in the Materials.

The information provided herein is not intended to be and should not be construed as advice within the meaning of Section 15B of the Securities Exchange Act of 1934, and Wells Fargo will not be acting as your municipal advisor under the municipal advisor rules (“Muni Advisor Rules”) of the Securities and Exchange Commission (“SEC”) and the SEC’s guidance in its Registration of Municipal Advisors Frequently Asked Questions dated May 19, 2014, as supplemented (collectively, “Muni Advisor Rules”). Please be advised that any information in the Materials regarding municipal derivatives is being provided by WFBNA as a swap dealer and that any swap offered or recommended in the Materials is being offered or recommended by WFBNA as a swap dealer. No part of the Materials is intended to be and should not be construed as an offer or recommendation of a municipal derivatives service or product by WFS, as underwriter, for purposes of Municipal Securities Rulemaking Board Rule G-17, or otherwise. You should consult with your own financial and/or municipal, legal, accounting, tax, and other advisors, as applicable, to the extent you deem appropriate. If you would like a municipal advisor that has legal fiduciary duties to you, you are certainly free to engage a municipal advisor to serve in that capacity.

Transactions referenced in the Materials which are attributed to Wells Fargo or to WFS may include transactions executed by a Wachovia Corporation or Wells Fargo & Company broker-dealer affiliate or by other municipal securities dealers and/or broker-dealers which were acquired by Wachovia Corporation or WFC.

WFS distributes municipal securities to institutional investors primarily through Wells Fargo Bank, N.A. Municipal Finance Group (“WFBNA MFG”) and Wells Fargo Securities, LLC (“WFSLLC”). Distribution to middle market clients is provided primarily through WFSLLC. Retail distribution is primarily provided by Wells Fargo Advisors, which is the trade name used by Wells Fargo Clearing Services, LLC (“WFCS”) and Wells Fargo Advisors Financial Network, LLC (“WFAFN”), two non-bank separate registered broker-dealers (members FINRA and SIPC). WFSLLC, WFBNA MFG, WFCS, and WFAFN are affiliates and are each wholly owned subsidiaries of WFC.

Any municipal underwriting, commercial paper and remarketing rankings referenced herein represent totals for WFBNA MFG and WFSLLC. Non-municipal underwriting, commercial paper and remarketing rankings referenced herein represent totals for WFSLLC only. Source information for any ranking information not otherwise provided herein is available on request. Any rankings referencing competitive municipal new issues for time periods prior to 2011 include issues underwritten by WFCS. Underwriting activities of WFCS are not managed or otherwise controlled by WFBNA MFG or WFSLLC.

If the Materials are being provided to you under any of the following events, the information contained in the Materials and any subsequent discussions between us, including any and all information, advice, recommendations, opinions, indicative pricing, quotations and analysis with respect to any municipal financial product or issuance of municipal securities, are provided to you in reliance upon the Swap Dealer, Bank, RFP, IRMA exemptions and underwriter exclusion, as applicable, provided under the Muni Advisor Rules. In the event the Swap Dealer, Bank, RFP, IRMA exemptions, or underwriter exclusion do not apply, the information included in the Materials are provided in reliance on the general information exclusion to advice under the Muni Advisor Rules.

In the event that you have provided us with your written representation in form and substance acceptable to WFBNA that you are represented by a “qualified independent representative” as defined in the Commodity Exchange Act (“CEA”) with respect to any municipal derivative or trading strategy involving municipal derivatives described in the Materials, we have provided you with our written disclosure that we are not acting as an advisor to you with respect to the municipal derivative or trading strategy pursuant to Section 4s(h)(4) of the CEA and the rules and regulations thereunder, and have taken certain other steps to establish the “Swap Dealer exemption” under the Muni Advisor Rules.

Any information related to a bank-purchased bond transaction (“Direct Purchase”) included in the Materials is a product offering of WFBNA or a subsidiary thereof (“Purchaser”) as purchaser / investor. WFS will not participate in any manner in any Direct Purchase transaction between you and Purchaser, and Wells Fargo employees involved with a Direct Purchase transaction are not acting on behalf of or as representatives of WFS. The information contained herein regarding Purchaser’s Direct Purchase is being provided to you by WFS only for purposes of providing financing alternatives that may be available to you from WFC and its affiliates. Information contained in this document regarding Direct Purchase is for discussion purposes only in anticipation of engaging in arm’s length commercial transactions with you in which Purchaser would be acting solely as a principal to purchase securities from you or a conduit issuer, and not as a municipal advisor, financial advisor or fiduciary to you or any other person or entity regardless of whether Purchaser, or an affiliate has or is currently acting as such on a separate transaction. Additionally, Purchaser has financial and other interests that differ from your interests. Purchaser’s sole role would be to purchase securities from you (or the conduit issuer). Any information relating to a Direct Purchase is being provided to you pursuant to and in reliance on the “Bank exemption” under the Muni Advisor Rules and the general information exclusion to advice under the Muni Advisor Rules.

In the event the Materials are being provided in connection with a RFP, the SEC exempts from the definition of municipal advisor “any person providing a response in writing or orally to a request for proposals or qualifications from a municipal entity or obligated person for services in connection with a municipal financial product or the issuance of municipal securities; provided however, that such person does not receive separate direct or indirect compensation for advice provided as part of such response” (“RFP exemption”). In such event, we have relied upon the RFP exemption, and on your distribution and execution of this RFP through a competitive process. In the event WFBNA MFG is the party providing the Materials responses to all questions, certifications, attestations, information requests, and similar in the RFP or RFQ to which this response relates are specifically limited to, in context of, and as applied to, WFBNA MFG in its capacity as a separately identifiable department of a national bank that is registered as a municipal securities dealer with the Securities and Exchange Commission, Office of the Comptroller of the Currency, and Municipal Securities Rulemaking Board; and not on behalf of Wells Fargo Bank, N.A., unless specified otherwise in our response.

In the event that you have provided us with your written representation that you are represented by an independent registered municipal advisor (an “IRMA”) within the meaning of the Muni Advisor Rules, with respect to the transaction(s) described in the Materials we have provided you with our written disclosure that we are not a municipal advisor to you and are not subject to the fiduciary duty under the Muni Advisor Rules, if applicable, and have taken certain other steps to establish the “IRMA exemption” under the Muni Advisor Rules.

In the event that you have engaged us to serve as an underwriter with respect to the municipal securities issuance described in the Materials we have provided you with our written disclosure regarding our role as an underwriter, that we are not a municipal advisor to you and are not subject to the fiduciary duty under the Muni Advisor Rules, if applicable.

If savings threshold level information is contained herein, please be advised that WFS is not recommending nor providing advice regarding which maturities should be refunded by you.

The Materials are provided for general information about the transactions described herein. The Materials do not constitute an offer to sell or a solicitation of an offer to buy, or a recommendation or commitment for any transaction involving the securities or financial products named or described herein, and are not intended as investment advice or as a confirmation of any transaction. Assumptions stated herein may or may not be valid. Externally sourced information contained in the Materials has been obtained or derived from sources we reasonably believe to be reliable, but Wells Fargo Securities and WFBNA make no representation or warranty, express or implied, with respect thereto, and do not represent or guarantee that such information is accurate or complete. Wells Fargo Securities and WFBNA do not assume or accept any liability for any loss which may result from reliance thereon. Wells Fargo Securities and/or one or more of its affiliates may provide advice or may from time to time have proprietary positions in, or trade as principal in, any securities or other financial products that may be mentioned in the Materials, or in derivatives related thereto.

Terms, rates, prices and structure in the Materials are indicative only, and should not be relied upon as the terms, rates, prices or structure on which we or anyone else would be willing to enter into, terminate or transfer any transaction with you, including without limit, the swap, bond or loan, letter of credit and/or remarketing agreement (if applicable), or relied upon for any other purpose. Actual rates and prices may be higher or lower depending on market conditions at the time of execution, and are subject to market conditions at deal time, final credit approval, agreement on deal terms and compliance to our satisfaction with all applicable legal and regulatory requirements, including without limit, onboarding, swap/securities trading relationship and transaction documentation. Any historical information provided in the Materials is for information only, and past performance may not be relied upon as a guarantee of future results. Examples in the Materials are hypothetical only and are not a prediction of future results. There are frequently sharp differences between projections or forecasts and the actual results achieved.

#### **Arm's Length Relationship**

All transactions described in the Materials are arm's length transactions to be negotiated by each party acting in its own best interests. The price and other terms of any transaction will be individually negotiated, and there is no assurance that they will represent the best price or terms available to you from us or other sources. Whether they are executable, indicative or illustrative, you should assume that any price we offer, quote or otherwise provide to you for entering into, transferring or terminating a transaction with WFBNA is strictly a WFBNA price and should not be considered a "market price" offered by anyone else in the relevant market. In this regard, please note that when we offer you an executable price for a swap with WFBNA, CFTC Rule §23.431 requires that we also disclose to you the "mid-market mark" of the swap in order for you to assess the material incentives and conflicts of interest we may have in connection with the swap. Information about the mid-market mark and other material disclosures regarding swaps can be found at [www.wellsfargo.com/swapdisclosures](http://www.wellsfargo.com/swapdisclosures). The decision whether you should enter into any transaction upon mutually agreed terms rests solely with you. Before entering into any transaction described in the Materials, you should consider whether it is appropriate for you in light of your objectives, experience, financial and operational resources, legal capacity and authority, and other relevant circumstances, and you should conduct a thorough and independent evaluation of the financial, tax, accounting, legal and regulatory characteristics, consequences, costs and risks of the transaction in light of your particular circumstances, based upon the advice of your own financial, legal, tax, accounting, and other professional advisors. Neither we nor any of our affiliates will be providing any such advice in connection with any such transaction, and neither we nor they will be acting as your agent, broker, financial advisor, municipal advisor, or fiduciary in connection with any such transaction, whether or not we or they may otherwise be engaged to act in such capacity in connection with other products or services.

#### **LIBOR Discontinuation Risk**

On July 27, 2017, the Chief Executive of the United Kingdom Financial Conduct Authority, which regulates the London Interbank Offered Rate ("LIBOR"), announced that it intends to stop persuading or compelling banks to submit rates for the calculation of LIBOR to the administrator of LIBOR after 2021. The announcement indicates that the continuation of LIBOR on the current basis cannot and will not be guaranteed after 2021. It is impossible to predict whether and to what extent banks will continue to provide LIBOR submissions to the administrator of LIBOR or whether any additional reforms to LIBOR may be enacted in the United Kingdom or elsewhere. While global regulators and financial services industry market participants, including the Alternative Reference Rates Committee in the United States, have been working on developing alternative reference rates ("ARR") for LIBOR and other interbank offered rates, there is no guarantee that ARR's will be developed or widely used by market participants by the end of 2021, that any ARR's developed will be suitable for each transaction as a substitute or successor for LIBOR, that the composition or characteristics of ARR's will be similar to those of LIBOR, or that ARR's will be the economic equivalent of the rate used in your LIBOR-based swap or financing transactions. Therefore, if LIBOR is discontinued during the term of your swap, your payments would be calculated differently and could be higher or more volatile than expected. These risks and others are discussed in greater detail at the LIBOR Alternative Reference Rates disclosure at: [www.wellsfargo.com/swapdisclosures](http://www.wellsfargo.com/swapdisclosures)

#### **Risks to Consider**

While certain transactions described in the Materials may be used for hedging purposes to reduce or eliminate certain risks associated with your assets or liabilities, the effectiveness of hedging may depend upon holding these transactions to maturity and not reducing or disposing of all or any portion of the asset or liability during the term of the hedge. If a swap transaction is terminated early, or if you reduce or dispose of all or a portion of the underlying asset or liability before the transaction matures (such as prepaying a floating rate loan you hedge with a swap), then depending on the nature of the transaction, its characteristics and your position in it (e.g., buyer, seller, counterparty, etc.), you may incur a substantial loss or you may receive little or no hedging benefit from any upfront or periodic payments or exchanges or any other costs incurred in purchasing, selling, acquiring, maintaining or disposing of the transaction. You may also incur a substantial loss if you enter into a swap transaction in anticipation of hedging an asset or liability that does not materialize. You should understand that significant potential amounts could become payable by you for modifying a swap transaction, terminating it early or transferring your position in the transaction to another person or entity, or in connection with the exercise of any option or other rights under the transaction or governing documents, depending upon then existing market conditions. You should also consider that prepaying your loan or disposing of an asset or other liability does not relieve you of your obligations under a swap transaction, which may be terminated early only in accordance with the terms of the swap trading relationship documentation (such as an ISDA Master Agreement) or other transaction documents, or otherwise by mutual agreement. Such termination may require payment by you of an early termination amount, which amount may be substantial. Whether you use a swap transaction for hedging or another purpose, you should satisfy yourself that you understand these and other risks relative to the benefits you are seeking to achieve and that the transaction and risks are suitable for you. These risks are discussed in greater detail in disclosures provided to you through the following website:

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#### **Independent Obligation**

To the extent any swap transaction described in the Materials may be used to hedge against increases in the interest expense of a loan or other financing, the swap transaction would be a separate and independent obligation and would not be contingent on whether or not any loan or other financing closes, is outstanding, or is repaid, in whole or in part, at any time, subject to any contractual requirement to terminate and settle the transaction early upon prepayment of the loan or financing or for other financing-related events. In addition, if you provide any existing or future collateral or other credit support to secure the transaction and any loan or other financing, then you would be entitled to the release of such collateral or credit support only if certain conditions contained in the related collateral agreement or credit support document are completely satisfied for both the transaction and any such loan or financing, or we otherwise reach agreement with you on alternative collateral, credit support or other arrangements.

#### **Unmatched Terms & Conventions**

If the principal amount or duration of a loan or financing differs from that of a transaction used to hedge such loan or financing, you may be exposed to risk of loss from such over-hedging or under-hedging. If any other economic terms or characteristics of a loan or financing differ from those of the related hedge, then in addition to any losses that you could incur from such differences, the hedge may create unanticipated accounting exposure or tax liability for you. To the extent fair value accounting applies to the hedge, you may have to reflect unrealized gains and losses (i.e., the so-called "mark-to-market" value of the hedge) over the life of the hedge on your

balance sheet and/or income statement. If hedge accounting applies, any ineffectiveness in the hedge resulting from such differences may likewise need to be taken into account and reflected in your financial results. These swap valuation considerations may also be important to you for tax purposes, including any tax laws that may require unrealized gains or losses on swaps to be taken into account in determining your income tax liability.

Conventions used in the loan or other financing and swap markets may differ, and we are under no obligation to ensure that any swap we offer is a perfect hedge for your financing even if we provide you with both products. For example, if the method for determining a loan's floating rate differs from that for a swap's floating rate, the loan floating rate payments could diverge from those of the swap. Such divergence may occur by convention or as the result of contractual differences, such as in the definition of or the reset timing (e.g., 1-month or 3-month) for the London Interbank Offered Rate (LIBOR), the dates or times at which LIBOR is set, the number of days in the payment periods, any applicable fallback floating rate, or the floating rate rounding convention.

#### **Negative Interest Rates**

Express wording in swap transactions is required to place a 0% floor on LIBOR or other floating benchmark rate of the swap transaction, and no such 0% floor is included in an interest rate swap or other swap transaction unless mutually agreed between the parties as reflected in the swap confirmation. Absent such floor, if a Floating Amount is negative under an interest rate swap, the Floating Rate Payer does not make such payment. Instead, the Fixed Rate Payer pays the absolute value of the negative Floating Amount in addition to the Fixed Amount. See §6.4 of the 2006 ISDA Definitions, as amended. If you wish to acquire a swap with a 0% floor, this may increase the price of your swap as reflected in a higher Fixed Rate. For further information on negative interest rates, including their effect on swaps and the loans they are hedging, see Negative Interest Rates at: [www.wellsfargo.com/swapdisclosures](http://www.wellsfargo.com/swapdisclosures)

#### **Projections, Forecasts & Other Data**

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WFBNA is a "swap dealer" as defined in the Commodity Exchange Act ("CEA"), and one or more transactions described in the Materials are "swaps" as defined in the CEA and regulations of the Commodity Futures Trading Commission ("CFTC") or "security based swaps" as defined in the CEA and the Securities Exchange Act of 1934 and regulations of the U.S. Securities and Exchange Commission ("SEC"). From time to time, we may furnish you with certain information or request that you furnish us with certain information or representations or take other action we consider necessary or appropriate to comply with applicable legal or regulatory requirements, including the requirement that, in order to enter into a swap with us, you must be an Eligible Contract Participant (as defined in 17 C.F.R. §1.3(m)). Nothing herein or in the Materials constitutes legal advice or purports to be a complete statement of regulations applicable to swaps, matters which you should address with your own legal advisors. For purposes of CFTC Regulations 1.71 and 23.605, please note that the Materials are a "solicitation" of a swap and not a "research report" as defined therein. To the extent the Materials include a scenario analysis, such inclusion shall not supersede your right under CFTC Regulation 23.431(b) to request and consult in the design of a scenario analysis. Nothing in the Materials should be construed as a recommendation or opinion with respect to any swap or trading strategy involving a swap for purposes of CFTC Regulations Part 23 or the CEA. The Materials do not take into account your particular investment objectives, financial condition or needs and are not intended to serve as a basis for entering into a swap or to suggest, through opinion, recommendation, or otherwise, that you should enter into a particular swap or trading strategy involving a swap. You should consult with your own advisors for opinions on whether to enter into any swap or trading strategy involving a swap.

In certain cases, the transactions described in the Materials may be subject to regulations that have not yet been proposed, adopted in final form or become effective, and some or all of such regulations may have a direct or indirect impact on the substantive terms set forth hereunder. Accordingly, the parties acknowledge partial and/or incomplete information with respect to the requirements of such regulations, but acknowledge that to the extent any term contemplated hereunder is in violation of or subject to any current or future regulation, as amended from time to time, we reserve the right to amend the terms contemplated hereby or cease to offer the transaction described herein.

#### **Wells Fargo as a Counterparty**

Transactions described in the Materials are not bank deposits or FDIC insured, may expose you to the credit risk of WFBNA and therefore involve risk of loss to you apart from the market risk associated with the underlying rate, price or other economic measure on which the transaction is based. Financial information WFBNA is available at: [https://www.wellsfargo.com/invest\\_relations/investor\\_relations](https://www.wellsfargo.com/invest_relations/investor_relations)

#### **Additional Information**

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[www.wellsfargo.com/swapdisclosures](http://www.wellsfargo.com/swapdisclosures)

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If you have any questions or concerns about the disclosures presented herein, you should make those questions or concerns known immediately to Wells Fargo.

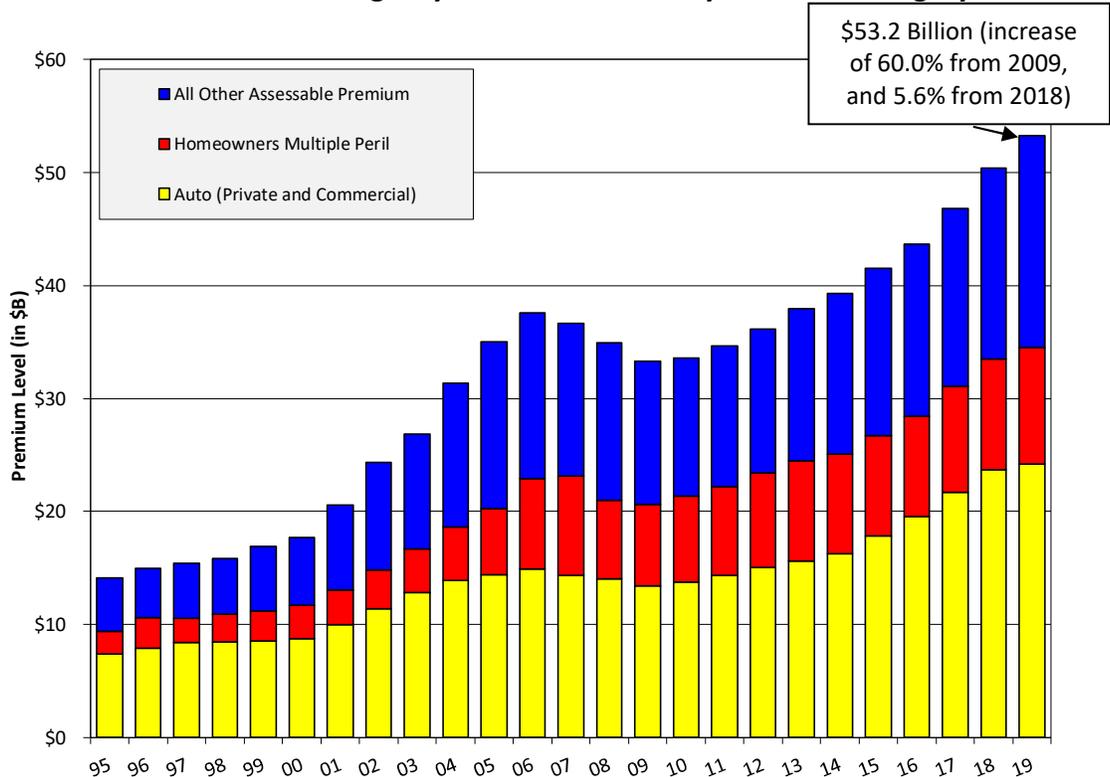


## Appendix B – The FHCF’s Emergency Assessment Base

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 2019 (the last official measurement date), totaled approximately \$53.2 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 by Premium Category



\$53.2 Billion (increase of 60.0% from 2009, and 5.6% from 2018)



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

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

Calendar Year	Admitted Lines DWP*	Surplus Lines and NIMA Clearinghouse DWP	Total Aggregate Premium	6% Emergency Assessment	% Premium Change from Prior 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%

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 2000-2019 is 6.18%.



2019 Admitted Market Lines Premiums (\$MM)

Line of Business	2019 Total Assessable Premium
Fire	\$789.6
Allied Lines	\$1,790.9
Multiple Peril Crop	\$137.0
Private crop	\$0.7
Farmowners Multiple Peril	\$21.5
Homeowners Multiple Peril	\$9,603.5
Commercial Multiple Peril (non-liability)	\$916.7
Commercial Multiple Peril (liability)	\$631.3
Mortgage Guaranty	\$397.5
Ocean Marine	\$407.3
Inland Marine	\$1,507.8
Financial Guaranty	\$4.3
Earthquake	\$6.0
Other liability - occurrence	\$4,120.6
Other liability - claims-made	\$719.6
Products Liability	\$124.7
Private Flood	\$52.0
Private passenger Auto No-Fault (PIP)	\$4,235.5
Other Private Passenger Auto Liability	\$10,324.5
Commercial Auto No-Fault (PIP)	\$108.8
Other Commercial Auto Liability	\$2,818.1
Private Passenger Auto Physical Damage	\$6,108.3
Commercial Auto Physical Damage	\$484.0
Aircraft (All Perils)	\$130.9
Fidelity	\$63.9
Surety	\$430.0
Burglary and Theft	\$21.4
Boiler and Machinery	\$59.4
Credit	\$110.6
Warranty	\$675.6
Aggregate Write-ins	\$230.8
<b>Totals</b>	<b>\$47,032.8</b>

Source: Florida Office of Insurance Regulation, Market Research Unit



## 2019 Surplus Lines Premiums (\$MM)

		2019 Surplus Lines Premiums (\$MM)			2019 Surplus Lines Premiums (\$MM)
Coverage Code			Coverage Code		
1000	Commercial Property	\$2,075.9	3006	Personal & Pleasure Boats & Yachts	\$17.6
1001	Builders Risk	\$86.4	3007	Ocean Marine Builder's Risk	\$0.0
1002	Business Income	\$3.4	3008	Longshoremen (Jones Act)	\$0.0
1003	Apartments (Commercial)	\$5.3	3010	Marine Operators Legal Liability - Non Taxable	\$0.0
1004	Boiler and Machinery	\$0.1	3011	Marine Liabilities Package - Non Taxable	\$0.0
1005	Commercial Package (Property & Casualty)	\$389.6	4000	Inland Marine (Commercial)	\$30.4
1006	Condominium Package (Commercial)	\$48.2	4001	Inland Marine (Personal)	\$22.2
1007	Crop Hail	\$0.0	4002	Motor Truck Cargo	\$24.8
1008	Difference In Conditions	\$5.3	4003	Jewelers Block	\$6.0
1009	Earthquake	\$0.4	4004	Furriers Block	\$0.0
1010	Flood	\$48.3	4005	Contractors Equipment	\$0.6
1011	Glass (Commercial)	\$0.0	4006	Electronic Data Processing	\$5.4
1012	Mortgage Impairment	\$0.3	5000	Commercial General Liability	\$1,050.9
1013	Windstorm &/or Hail	\$99.5	5001	Commercial Umbrella Liability	\$68.6
1014	Mold Coverage - Commercial	\$1.2	5002	Directors & Officers Liability (Profit)	\$29.5
1015	Sinkhole Coverage - Commercial	\$0.0	5003	Directors & Officers Liability (Non-Profit)	\$5.7
1016	Excess Flood - Commercial	\$16.5	5004	Educator Legal Liability	\$0.8
1017	Collateral Protection	\$22.6	5005	Employment Practices Liability	\$13.1
1018	Fire	\$0.0	5006	Excess Commercial General Liability (Not Umbrella)	\$289.6
1100	Bankers Blanket Bond	\$2.7	5007	Excess Personal Liability (Not Umbrella)	\$5.7
1101	Blanket Crime Policy	\$0.5	5008	Liquor Liability	\$5.7
1102	Employee Dishonesty	\$0.0	5009	Owners & Contractors Protective	\$10.3
1103	Identity Theft	\$0.0	5010	Personal Umbrella	\$7.7
1104	Deposit Forgery	\$0.0	5011	Personal Liability	\$22.4
1105	Miscellaneous Crime	\$0.6	5012	Pollution & Environment Liability	\$68.8
1200	Accident & Health	\$0.0	5013	Product & Completed Operations Liability	\$17.7
1201	Credit Insurance	\$3.9	5014	Public Officials Liability	\$3.7
1202	Animal Mortality	\$0.3	5015	Police Professional Liability	\$1.9
1203	Mortgage Guaranty	\$0.4	5016	Media Liability	\$1.1
1204	Worker's Compensation-Excess Only	\$0.0	5017	Railroad Protective Liability	\$3.4
1205	Product Recall	\$9.1	5018	Asbestos Removal & Abatement	\$0.0
1206	Kidnap/Ransom	\$0.2	5019	Guard Service Liability	\$1.2
1207	Surety	\$14.7	5020	Special Events Liability	\$6.8
1208	Weather Insurance	\$0.6	5021	Miscellaneous Liability	\$109.7
1209	Prize Indemnification	\$0.4	5022	Cyber Liability	\$73.0
1210	Travel Accident	\$0.1	6000	Hospital Professional Liability	\$0.0
1211	Terrorism	\$16.6	6001	Miscellaneous Medical Professionals	\$0.0
1212	Fidelity	\$0.3	6002	Nursing Home Professional Liability	\$0.0
2000	Homeowners-HO-1	\$1.9	6003	Physician/Surgeon	\$0.0
2001	Homeowners-HO-2	\$0.1	7000	Architects & Engineers Liability	\$21.5
2002	Homeowners-HO-3	\$485.6	7001	Insurance Agents & Brokers E&O	\$9.5
2003	Tenant Homeowners-HO-4	\$2.3	7002	Lawyers Professional Liability	\$42.4
2004	Homeowners-HO-5	\$91.9	7003	Miscellaneous E&O Liability	\$128.9
2005	Condo Unit-Owners HO-6	\$100.2	7004	Real Estate Agents E&O	\$5.6
2006	Homeowners-HO-8	\$36.8	7005	Software Design Computer E & S	\$5.7
2007	Dwelling Builders Risk	\$1.6	8000	Commercial Auto Liability	\$43.0
2008	Dwelling Flood	\$35.8	8001	Commercial Auto Excess Liability	\$28.2
2009	Dwelling Property	\$133.1	8002	Commercial Auto Physical Damage	\$44.0
2010	Farmowners Multi-Peril	\$1.7	8003	Dealers Open Lot	\$30.9
2011	Mobile Homeowners	\$22.5	8004	Garage Liability	\$38.2
2012	Windstorm	\$29.6	8005	Garage Keepers Legal	\$2.9
2013	Mold Coverage - Residential	\$0.0	8006	Private Passengers Auto-Physical Damage Only	\$0.1
2014	Sinkhole Coverage - Residential	\$0.0	8007	Personal Excess Auto Liability	\$0.4
2015	Excess Flood - Residential	\$25.3	9000	Commercial Aircraft Hull &/or Liability	\$16.3
3000	Marine Operators Legal Liability - Taxable	\$2.0	9001	Airport Liability	\$1.7
3001	Marine Liabilities Package - Taxable	\$7.7	9002	Aviation Cargo	\$0.1
3002	Ocean Marine-Hull &/or Protection & Indemnity	\$11.4	9003	Aviation Product Liability	\$6.1
3003	Ocean Cargo Policy	\$30.7	9004	Hanger Keepers Legal Liability	\$0.7
3004	Ship Repairers Legal Liability	\$0.0	9005	Personal & Pleasure Aircraft	\$0.1
3005	Stevedores Legal Liability	\$0.0			
			<b>Totals</b>		<b>\$6,205</b>

Source: FLSO

Based on policies with a submitted (filed) date from 1/1/19 to 12/31/19.



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