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STATE OF VERMONT
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TO: Michael Sirotkin, Chair, Senate Committee on Economic Development, Housing and General Affairs
Tim Ashe, President Pro Tempore of the Senate
Mitzi Johnson, Speaker of the House of Representatives

FROM: Beth Pearce, Vermont State Treasurer

RE: Housing Bond

DATE: March 12, 2019

Introduction

This memorandum is to supplement my previous testimony to the Senate Committee on Economic Development, Housing and General Affairs on February 26, 2019. It outlines concerns with the proposed housing bond provisions in the bill currently under consideration by the Senate Committee on Economic Development, Housing and General Affairs,[1] and makes recommendations on how to fund affordable housing investments at the best value to the taxpayers.

I want to commend the Senate Committee on Economic Development, Housing and General Affairs, the General Assembly, and the Governor for their continued efforts on affordable housing. Housing "affects every aspect of life – proximity to employment, access to good schools, fresh food and recreation…" It facilitates vibrant downtowns and villages, "impacts an employer's ability to attract and retain workers," and is an economic driver.[2] The Treasurer's Office wholeheartedly supports these efforts and offers these comments with the intent to increase funds, now and in the future, to support the goals of affordable housing.

Summary

The Treasurer's Office does not recommend proceeding with another housing bond at this time because doing so would be costly and would reduce funds available for other needed capital investments. Instead, we would be pleased to work with the General Assembly and the

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[1] *See* An act relating to housing investments (dr req 19-1175 – draft 7.1) 2/26/2019 – RDW – 12:27 PM, *available at* https://legislature.vermont.gov/Documents/2020/WorkGroups/Senate%20Economic%20Development/Bills/19-1175/Bills,%20Drafts,%20and%20Amendments/W~Rebecca%20Wasserman~19-1175,%20Draft%20No.%207.1,%202-26-2019~2-27-2019.pdf. This is the most recent version available.
[2] *Act 157 Report to the Vermont General Assembly on Ways to Improve the Quality and Quantity of Housing and Tools to Finance Infrastructure* at 4 (Jan. 15, 2017) (2017 Housing Report).

Administration to (1) develop a long-term sustainable revenue source for the Vermont Housing and Conservation Board (VHCB) and other entities, and (2) explore ways to improve our financial support to the Vermont Housing Finance Agency (VHFA).

While I will discuss these issues in greater depth below, the concerns of the Treasurer's Office can be summarized as follows:

1) An additional housing bond adds more borrowing costs in the form of interest and missed opportunity. A more cost-effective approach is to invest in a sustainable funding source for VHCB.
2) An additional housing bond will increase the State's net tax-supported debt and therefore reduce dollars available for other needed capital projects.
3) The proposed new revenues do not have a track record and therefore require additional scrutiny for ratings purposes. They may be seen as more volatile and could negatively impact the rating.
4) If the State were to issue another housing bond, there are logistical issues that would need to be resolved. Per the bond indenture for the first housing bond, the State would need to receive written confirmation from Moody's that the rating on the existing bonds would not be impaired if a new bond were to be issued. The State should also consider issuing the bond itself, rather than having it go through VHFA, if a new bond were to be issued.
5) The Treasurer's Office would like to assess expanded application of the State's moral obligation to VHFA as a way to increase affordable housing opportunities.

Discussion

Borrowing vs. Investing

While I believe the first housing bond can be considered both a success and a jump start for affordable housing, much of the need is due to years of underfunding of VHCB. Simply put, VHCB needs to be funded, year in and year out, at least consistent with its statutory level. As noted in Attachment A:

- From FY11-19, $48 million from the statutory amount of property transfer tax (PTT) assigned to VHCB was redirected to the General Fund. While $28.2 million of that was recouped through the capital bill, those monies come at a cost, i.e., State paid interest, on debt issued.
- Based on the current proposed budget, the PTT dollars lost since 2011 will exceed $60 million, with $32.8 million of that apportionment made up by the capital bill.

This shortfall is expensive in the long run, to both the State and its taxpayers. Using an average interest cost for the general obligation bonds issued to finance the capital bill and projecting the interest costs for 2020, it is estimated that these decisions, will cost the taxpayers $7.9 million in interest.[3] The housing bond also came at a cost. As illustrated in Attachment B, the $37.8 million principal amount will need to be repaid plus interest of $14.7 million. The total debt service payment (principal and interest) of $52.5 million will be paid in part through a reduction of the

[3] The Treasurer's Office includes FY10 capital appropriation of $1 million not included in VHCB worksheet.

VHCB appropriations of $1.5 million per year through 2039.[4] While the "jumpstart" achieved through this bond was and is successful, further borrowing on the State's credit card is not the most cost-effective way of delivering affordable housing.

In committee, Senator Sirotkin suggested some sort of trust fund to capture revenues for affordable housing. I believe this is a more advantageous approach than debt financing and is consistent with the recommendations of the 2017 Housing Report. Earning interest on funds and dedicating them to housing is a far more cost-effective approach than putting dollars on the State's credit card.

The current proposed bill contemplates using $4 million per year from the PTT to pay debt service for a $50 million housing bond, which we have estimated would cost taxpayers $21.5 million in interest. Through further analysis using current interest rate estimates,[5] it appears that $4 million a year could support a bond of up to $55.9 million, resulting in an interest cost of $24.1 million in interest to taxpayers (Attachment C).

On the other hand, if you invest the $4 million each year, and use a portion to make up the $1.5 million offset to VHCB from the first housing bond, you would earn money for housing. This is illustrated in Attachment D. Rather than spending $21.5 to $24.1 million in interest, you would earn $25.9 million in interest, while still providing $30 million in additional funds to VHCB and generating a balance of $75.9 million. Portions of those additional interest earnings can be distributed as well, and the funds deposited can be increased, providing even more dollars for housing, both for supply and demand needs.[6]

While the analysis presented does not illustrate the time value of money, the net present value of a housing bond, requiring $4 million per year debt service is approximately negative $5.7 million. This means that while we get $55.9 million dollars today for projects, the debt service we have to pay for this bond is approximately $61.6 million in today's dollars. If you compare that to the use of a trust fund, the story becomes even more compelling. Assuming that $1.5 million is given to VHCB every year and the remaining $2.5 million of revenue is invested, the present value of those cash flows is $46.3 million in today's dollars. Bottom Line: More dollars for housing, less cost to the taxpayer.

Impact on State Debt and Future Debt Capacity

The first housing bond was issued through VHFA in order to prevent the bonds from counting towards the State's net tax-supported debt. Moody's, however, has treated the housing bond as State net tax-supported debt. That results in two important considerations for the Committee and the General Assembly if another housing bond is authorized:

1) What impact will this have on the State's capacity to issue other debt, including the capital bill; and
2) What changes should be made in the structuring of the bond and using VHFA as a conduit issuer given potential cost savings through direct State issuance?

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[4] Per Section D.100(a)(2)(A) of the 2018 Appropriation Act.
[5] Interest rates were derived by assuming the same credit spreads as the 2018 Housing Bond and apply them to the current AAA rated Municipal Market Data rates.
[6] The use of a 4% return is a conservative estimate.

The latter consideration will be discussed later in the memo. With respect to the first, issuance of additional housing bonds will have a negative effect on the amount of issuance available for the capital bill, as early as next year. Moody's will include these bonds in its annual state debt medians report, and the Capital Debt Affordability Advisory Committee (CDAAC) will include them in its calculation in setting its recommended amount of general obligation bond debt.

The dollars available for the capital bill have declined significantly over the last four years, and assuming adoption of the current CDAAC recommendation, it will drop 23% over a six-year period. This is consistent with a national decline in new bond issuance as states tighten their belts and have moved to more direct cash payments for capital infrastructure. This makes selection of capital projects and capital planning more challenging.

Accordingly, the additional net tax supported debt added through a housing bond should be vetted with both the House Committee on Corrections and Institutions and the Senate Committee on Institutions. The Treasurer's Office's position is that our immediate and long-term housing needs would be better served by identifying new funding sources rather than borrowing.

Revenue Volatility and the Bonds

Before outlining potential issues with the appropriation of new revenue, it is important to understand the strengths and weaknesses of the existing bonds. Public Resources Advisory Group (PRAG), the State's financial advisor, has outlined these as follows:

The existing housing bond is rated "Aa2" by Moody's. The bonds were not downgraded when the State's general obligation bonds were downgraded in October 2018, since the rating is limited by, but not directly notched off of, the State's rating. Moody's Special Tax Methodology evaluates the creditworthiness of a bond issue and assigns ratings based on the following factors:

- Taxable Base and Pledge (30%) including Economic Strength and Nature of Special Tax Pledge
- Legal Structure (20%) including Additional Bonds Test and Debt Service Reserve Fund (DSRF) Requirement
- Financial Metrics (40%) including Maximum Annual Debt Service (MADS) coverage, revenue trend and revenue volatility (coverage above 4.5x is considered in the highest rating category based on the Moody's methodology for this factor).

Existing Bonds: The credit strengths for the existing bonds include healthy coverage of debt service by pledged revenues, covenant by the State not to reduce revenues below $12 million, and limitations on additional leverage provided in statute and the bond indenture. Credit challenges include volatility in pledged revenues. The factors that could lead to a downgrade include an economic downturn depressing pledged revenues, sharp dip in coverage, or a sustained trend in lower coverage, along with no actions by the State to protect bondholders.

Outstanding Bonds: Debt Service coverage based on 2018 statewide PTT revenue of $40.9 million and annual debt service of $2.5 million is a very strong coverage of 16.4x. As demonstrated from the excerpts above, Moody's primary rating concerns are related to the volatility of the pledged PTT revenues and overleveraging of the revenue stream. In order to

avoid a downgrade and have the rating affirmed it will be important to demonstrate that post issuance of additional bonds, the coverage levels are still strong and could withstand a significant dip in revenues.

From the peak of PTT revenues in October 2005 to the trough in December 2009 the State's PTT fell by 56%. If the State's FY 2018 revenues of $40.9 million dropped by a similar 56% the pledged revenues would be $18 million. Based on current maximum annual debt service, the debt service coverage would be 7.2x, which would still be above Moody's 4.5x threshold for the highest Financial Metric factor.

New Bonds: Assuming the State transfers $4.0 million of the incremental revenue, and the State's FY 2020 revenues of $44.9 million dropped by a similar 56%, the pledged revenues would be $19.76 million. Assuming $6.5 million maximum annual debt service, the debt service coverage would be 3.04x, which would be below Moody's 4.5x threshold to have the highest Financial Metric factor.

As mentioned previously, this bond would be a 20-year commitment, which needs to be supported with 20 years of earmarked tax revenues. The tax sources identified to support this bond are only projected for three years, and there is a lack of historical performance for potential investors to understand the associated volatilities. Furthermore, as with many new revenue sources, there are potential legal challenges that may be raised, which may impair collectability. These factors directly effect the cost of borrowing and rating agency consideration.

Moody's also highlights as a strength the State's covenant not to impair or reduce revenues below $12 million annually (which amount was set to ensure coverage in the highest Financial Metric category). With the leveraging of an additional $4 million, in order to maintain the same credit quality this threshold covenant may need to be increased to $30 million. This presents an additional risk to the State as these revenues are susceptible to volatility and as recently as 2013 the statewide property transfer tax revenues were less than $30 million (at $28.5 million). If the State were to leverage the additional $4 million and similarly increase the cap of covenanted revenues to $30 million this could expose the State to having to increase the PTT rate in the event that revenues dip below this covenanted level.

Logistical Issues for a Subsequent Housing Bond

First, per the bond indenture for the existing housing bond, in order to issue additional bonds the State would need to receive written confirmation from Moody's that the existing 2018 bond's rating would not be impaired. The State cannot be sure that additional bonds could be issued on a parity basis with the existing bonds at the time proposed legislation is approved. This creates risk and logistical issues.

Second, as noted earlier, the existing bonds were issued by VHFA. This was done as part of the State's effort to avoid having the bonds count toward the State's net tax-supported debt. In-as-much as the rating agencies are treating the housing bond as debt of the State, the question of the issuing authority should be re-examined. PRAG notes the following:

- Since the bonds were issued through VHFA, despite the strong rating on the bonds and direct pledge of statewide property transfer taxes, the bonds priced with a higher spreads

to the treasury index, given the nexus to housing. There may be a pricing benefit of selling future bonds, if authorized, directly by the State. For other highly rated states that have issued bonds with the same security, with and without a "housing" designation, we have found that the pricing cost has been 15-25 basis points.

- Since the bonds are considered special tax bonds and net tax supported debt of the State, similar to the transportation infrastructure bonds, the State may want to issue the bonds themselves as the Treasurer's Office would be (1) better suited to be the interface with the rating agencies on tax supported debt of the State and (2) more familiar with the standard debt structure provision of special tax bonds.

While VHFA did an exceptional job on the first issue, any additional bonds would impact the State's net tax-supported debt, and therefore the State should maintain control over the timing and structure of the issue and the ratings review process. Additionally, it is likely that the other two rating agencies would also view these bonds as net tax-supported debt.

Additional Proposal – Expand VHFA Use of the State's Moral Obligation

Earlier in this memo, I expressed support of the use of a trust investment mechanism to grow revenues to support a long-term sustainable funding mechanism for housing. The Treasurer's Office believes this is a responsible and prudent way to deliver housing services, and we appreciate the efforts of the Joint Fiscal Office, the House Committee on Ways and Means, the Senate Committee on Finance, and the Senate Committee on Economic Development, Housing, and General Affairs, to explore needed revenue generation.

At the same time, we believe that there may be an opportunity to deploy the State's moral obligation pledge to VHFA to provide additional assistance in developing and increasing affordable housing alternatives.

VHFA was created by the State for the purpose of promoting the expansion of the supply of funds available for mortgages on residential housing and to encourage an adequate supply of safe and decent housing at reasonable cost. VHFA is empowered to issue bonds and notes for that purpose and is required to create a debt service reserve fund for each issue.

As of June 30, 2018, VHFA's total indebtedness was $443.3 million. Of that debt, VHFA may issue up to $155 million of principal outstanding backed by the moral obligation of the State. This means that the General Assembly is legally authorized, but not legally obligated, to appropriate money for any shortfalls in the debt service reserve funds. Notwithstanding, no calls on the State's moral obligation have occurred.

The moral obligation is issue specific - it applies to specific issuance of debt, in all cases related to the multi-family issuances. As of June 30, 2018, the VHFA's debt supported by the State's moral obligation commitment is at $37.7 million, a decline from Great Recession highs.

It may be possible to facilitate increased affordable housing opportunities through expanded application of the State's moral obligation, i.e. to specific credit facilities rather than specific bond issues. This is an initial observation, and a great deal of work would be required to explore opportunities before moving forward. The Treasurer's Office believes, however, that this could provide a needed boost to affordable housing.

Conclusion

As described above, the Treasurer's Office does not recommend proceeding with another housing bond at this time. It is both an expensive way to deliver housing services and it will negatively impact the State's capital planning process and potentially its credit rating as well.

We would be pleased to work with the General Assembly and the Administration to develop a long-term sustainable revenue source for VHCB and other entities, and to explore ways to improve our financial support to VHFA. The Treasurer's Office believes this is the best and most sustainable way to achieve affordable housing at the least cost to the taxpayer.

If, contrary to this recommendation, the General Assembly wishes to pursue continued use of the State's net tax-supported debt for housing, there are serious language and logistical considerations that need to be addressed.

Thank you for your consideration of these matters. We are available to work with the Committee and answer any questions.

CC:
Joe Benning, Chair, Senate Committee on Institutions
Jane Kitchel, Chair, Senate Committee on Appropriations
Ann Cummings, Chair, Senate Committee on Finance
Alice Emmons, Chair, House Committee on Corrections and Institutions
Thomas Stevens, Chair, House Committee on General, Housing, and Military Affairs
Catherine Toll, Chair, House Committee on Appropriations
Janet Ancel, House Committee on Ways and Means
Stephen Klein, Chief Fiscal Officer, Joint Fiscal Office
Susanne Young, Secretary of Administration
Maura Collins, Executive Director, Vermont Housing Finance Agency
Gus Seelig, Executive Director, Vermont Housing and Conservation Board

Attachment A

VHCB FUNDING HISTORY FY2011-FY2020

Fiscal Year	Property Transfer Tax Revenues	VHCB Statutory Share of PTT	Actual PTT Appropriated	Amt of PTT to Gen. Fund	Capital Bill	VHCB Actual State Funds Appropriated	Revenues Lost from Housing & Conservation
2011	23,900,000	11,830,500	$ 6,101,662	$ 5,728,838	$ 5,000,000	$ 11,101,662	$ 728,838
2012	25,500,000	12,622,500	$ 8,047,500	$ 4,575,000	$ 4,000,000	$ 12,047,500	$ 575,000
2013	28,500,000	13,965,000	$ 13,688,640	$ 276,360		$ 13,688,640	$ 276,360
2014	30,900,000	15,141,000	$ 14,014,000	$ 1,127,000		$ 14,014,000	$ 1,127,000
2015	33,622,293	16,474,924	$ 14,954,840	$ 1,520,084		$ 14,954,840	$ 1,520,084
2016	35,700,000	17,493,000	$ 9,554,840	$ 7,938,160	$ 4,550,000	$ 14,104,840	$ 3,388,160
2017	38,700,000	18,963,000	$ 11,304,840	$ 7,658,160	$ 4,000,000	$ 15,304,840	$ 3,658,160
2018	40,900,000	18,816,000	$ 9,804,840	$ 9,011,160	$ 5,000,000	$ 14,804,840	$ 4,011,160
2019	44,100,000	20,384,000	$ 9,804,840	$ 10,579,160	$ 5,650,000	$ 15,454,840	$ 4,929,160
2020	47,100,000	21,854,000	$ 9,804,840	$ 12,049,160	$ 4,600,000	$ 14,404,840	$ 7,449,160
Total	**$348,922,293**	**$167,543,924**	**$107,080,842**	**$60,463,082**	**$32,800,000**	**$ 139,880,842**	**$ 27,663,082**

From Sec. D.100(a)(2)(A) of the FY 2018 Appropriations Act

The dedication of $2,500,000 in revenue from the property transfer tax pursuant to 32 V.S.A. § 9610(d) for the debt payments on the affordable housing bond (10 V.S.A. § 314) is to be offset by the reduction of $1,500,000 in the appropriation to the Vermont Housing and Conservation Board (VHCB) and $1,000,000 from the surcharge established by 32 V.S.A. § 9602a. The fiscal year 2018 & 2019 appropriations of $9,804,840 to VHCB reflects the $1,500,000 reduction. The affordable housing bond and related property transfer tax and surcharge provisions are repealed after the life of the bond on July 1, 2039. Once the bond is retired, the $1,500,000 reduction in the appropriation to VHCB is intended to be restored.

Attachment B

VHFA - Property Transfer Tax Revenue Bond
2018 Series - Taxable Bond

	Serials and 2037 Term Bonds			2038 NRO Term Bonds			TOTAL		
	Principal	Rate	Interest	Principal	Rate	Interest	Principal	Interest	Total P&I
1/9/2018									
5/1/2018	2,165,000	1.84%	282,618.93	-		50,000.00	2,165,000	332,618.93	2,497,618.93
11/1/2018	1,140,000	2.20%	509,992.50	170,000	3.75%	93,750.00	1,310,000	603,742.50	1,913,742.50
5/1/2019	-		497,452.50	-		90,562.50	-	588,015.00	588,015.00
11/1/2019	1,165,000	2.30%	497,452.50	175,000	3.75%	90,562.50	1,340,000	588,015.00	1,928,015.00
5/1/2020	-		484,055.00	-		87,281.25	-	571,336.25	571,336.25
11/1/2020	1,190,000	2.40%	484,055.00	185,000	3.75%	87,281.25	1,375,000	571,336.25	1,946,336.25
5/1/2021	-		469,775.00	-		83,812.50	-	553,587.50	553,587.50
11/1/2021	1,220,000	2.55%	469,775.00	190,000	3.75%	83,812.50	1,410,000	553,587.50	1,963,587.50
5/1/2022	-		454,220.00	-		80,250.00	-	534,470.00	534,470.00
11/1/2022	1,250,000	2.65%	454,220.00	200,000	3.75%	80,250.00	1,450,000	534,470.00	1,984,470.00
5/1/2023	-		437,657.50	-		76,500.00	-	514,157.50	514,157.50
11/1/2023	1,290,000	2.80%	437,657.50	205,000	3.75%	76,500.00	1,495,000	514,157.50	2,009,157.50
5/1/2024	-		419,597.50	-		72,656.25	-	492,253.75	492,253.75
11/1/2024	1,320,000	3.00%	419,597.50	215,000	3.75%	72,656.25	1,535,000	492,253.75	2,027,253.75
5/1/2025	-		399,797.50	-		68,625.00	-	468,422.50	468,422.50
11/1/2025	1,370,000	3.05%	399,797.50	220,000	3.75%	68,625.00	1,590,000	468,422.50	2,058,422.50
5/1/2026	-		378,905.00	-		64,500.00	-	443,405.00	443,405.00
11/1/2026	1,410,000	3.15%	378,905.00	230,000	3.75%	64,500.00	1,640,000	443,405.00	2,083,405.00
5/1/2027	-		356,697.50	-		60,187.50	-	416,885.00	416,885.00
11/1/2027	1,455,000	3.25%	356,697.50	240,000	3.75%	60,187.50	1,695,000	416,885.00	2,111,885.00
5/1/2028	-		333,053.75	-		55,687.50	-	388,741.25	388,741.25
11/1/2028	1,500,000	3.35%	333,053.75	250,000	3.75%	55,687.50	1,750,000	388,741.25	2,138,741.25
5/1/2029	-		307,928.75	-		51,000.00	-	358,928.75	358,928.75
11/1/2029	1,555,000	3.45%	307,928.75	260,000	3.750%	51,000.00	1,815,000	358,928.75	2,173,928.75
5/1/2030	-		281,105.00	-		46,125.00	-	327,230.00	327,230.00
11/1/2030	1,610,000	3.80%	281,105.00	270,000	3.750%	46,125.00	1,880,000	327,230.00	2,207,230.00
5/1/2031	-		250,515.00	-		41,062.50	-	291,577.50	291,577.50
11/1/2031	1,675,000	3.80%	250,515.00	280,000	3.750%	41,062.50	1,955,000	291,577.50	2,246,577.50
5/1/2032	-		218,690.00	-		35,812.50	-	254,502.50	254,502.50
11/1/2032	1,740,000	3.80%	218,690.00	290,000	3.75%	35,812.50	2,030,000	254,502.50	2,284,502.50
5/1/2033	-		185,630.00	-		30,375.00	-	216,005.00	216,005.00
11/1/2033	1,810,000	3.80%	185,630.00	300,000	3.75%	30,375.00	2,110,000	216,005.00	2,326,005.00
5/1/2034	-		151,240.00	-		24,750.00	-	175,990.00	175,990.00
11/1/2034	1,880,000	3.80%	151,240.00	310,000	3.75%	24,750.00	2,190,000	175,990.00	2,365,990.00
5/1/2035	-		115,520.00	-		18,937.50	-	134,457.50	134,457.50
11/1/2035	1,945,000	3.80%	115,520.00	325,000	3.75%	18,937.50	2,270,000	134,457.50	2,404,457.50
5/1/2036	-		78,565.00	-		12,843.75	-	91,408.75	91,408.75
11/1/2036	2,030,000	3.80%	78,565.00	335,000	3.75%	12,843.75	2,365,000	91,408.75	2,456,408.75
5/1/2037	-		39,995.00	-		6,562.50	-	46,557.50	46,557.50
11/1/2037	2,105,000	3.80%	39,995.00	350,000	3.75%	6,562.50	2,455,000	46,557.50	2,501,557.50
TOTAL	32,825,000			5,000,000			37,825,000	14,672,223.93	52,497,223.93

Fiscal Year Payments			
FY	Principal	Interest	Total
2018	2,165,000	332,618.93	2,497,618.93
2019	1,310,000	1,191,757.50	2,501,757.50
2020	1,340,000	1,159,351.25	2,499,351.25
2021	1,375,000	1,124,923.75	2,499,923.75
2022	1,410,000	1,088,057.50	2,498,057.50
2023	1,450,000	1,048,627.50	2,498,627.50
2024	1,495,000	1,006,411.25	2,501,411.25
2025	1,535,000	960,676.25	2,495,676.25
2026	1,590,000	911,827.50	2,501,827.50
2027	1,640,000	860,290.00	2,500,290.00
2028	1,695,000	805,626.25	2,500,626.25
2029	1,750,000	747,670.00	2,497,670.00
2030	1,815,000	686,158.75	2,501,158.75
2031	1,880,000	618,807.50	2,498,807.50
2032	1,955,000	546,080.00	2,501,080.00
2033	2,030,000	470,507.50	2,500,507.50
2034	2,110,000	391,995.00	2,501,995.00
2035	2,190,000	310,447.50	2,500,447.50
2036	2,270,000	225,866.25	2,495,866.25
2037	2,365,000	137,966.25	2,502,966.25
2038	2,455,000	46,557.50	2,501,557.50
	37,825,000	**14,672,223.93**	**52,497,223.93**

Total Payments in 5 Year Periods	FY	Principal	Interest	Total
Years 1-5 *	2018-2023	9,050,000	5,945,336.43	14,995,336.43
Years 6-10	2024-2028	7,955,000	4,544,831.25	12,499,831.25
Years 11-15	2029-2033	9,430,000	3,069,223.75	12,499,223.75
Years 16-20	2034-2038	11,390,000	1,112,832.50	12,502,832.50
20 Year Total		37,825,000	14,672,223.93	52,497,223.93

*Period is actually 5.5 years (Bonds issued 1/9/2018)

Attachment C

Taxable - Level Debt Service Structure - 20 Year Housing Bond

Proceeds		55,890,000
Project Fund		**51,383,150**
UD	0.50%	279,450
COI		225,000
DSRF		4,002,400
Contingency		-
Total		55,890,000

Total Project funds	51,383,150
Taxable amount	4,000,000
Tax-exempt amount	47,383,150
DSRF Earnings Rate:	1%
Target debt service:	4,000,000

Tenor	Date	Coupon	Price	Proceeds	Principal	Interest	DS	DSRF Earnings	Net Debt Service
	5/1/2019								
Issue	5/1/2019					-	-		(55,890,000)
1	11/1/2019	3.04%	100.000%	2,035,000	2,035,000	1,964,511	3,999,511	40,024	3,959,487
2	11/1/2020	3.06%	100.000%	2,095,000	2,095,000	1,902,647	3,997,647	40,024	3,957,623
3	11/1/2021	2.97%	100.000%	2,160,000	2,160,000	1,838,540	3,998,540	40,024	3,958,516
4	11/1/2022	2.98%	100.000%	2,225,000	2,225,000	1,774,388	3,999,388	40,024	3,959,364
5	11/1/2023	2.85%	100.000%	2,290,000	2,290,000	1,708,083	3,998,083	40,024	3,958,059
6	11/1/2024	3.00%	100.000%	2,355,000	2,355,000	1,642,818	3,997,818	40,024	3,957,794
7	11/1/2025	3.07%	100.000%	2,430,000	2,430,000	1,572,168	4,002,168	40,024	3,962,144
8	11/1/2026	3.17%	100.000%	2,500,000	2,500,000	1,497,567	3,997,567	40,024	3,957,543
9	11/1/2027	3.22%	100.000%	2,580,000	2,580,000	1,418,317	3,998,317	40,024	3,958,293
10	11/1/2028	3.32%	100.000%	2,665,000	2,665,000	1,335,241	4,000,241	40,024	3,960,217
11	11/1/2029	3.32%	100.000%	2,755,000	2,755,000	1,246,763	4,001,763	40,024	3,961,739
12	11/1/2030	3.42%	100.000%	2,845,000	2,845,000	1,155,297	4,000,297	40,024	3,960,273
13	11/1/2031	3.52%	100.000%	2,940,000	2,940,000	1,057,998	3,997,998	40,024	3,957,974
14	11/1/2032	3.80%	100.000%	3,045,000	3,045,000	954,510	3,999,510	40,024	3,959,486
15	11/1/2033	4.00%	100.000%	3,160,000	3,160,000	838,800	3,998,800	40,024	3,958,776
16	11/1/2034	4.00%	100.000%	3,290,000	3,290,000	712,400	4,002,400	40,024	3,962,376
17	11/1/2035	4.00%	100.000%	3,420,000	3,420,000	580,800	4,000,800	40,024	3,960,776
18	11/1/2036	4.00%	100.000%	3,555,000	3,555,000	444,000	3,999,000	40,024	3,958,976
19	11/1/2037	4.00%	100.000%	3,700,000	3,700,000	301,800	4,001,800	40,024	3,961,776
20	11/1/2038	4.00%	100.000%	3,845,000	3,845,000	153,800	3,998,800	40,024	3,958,776
Total				55,890,000	55,890,000	24,100,448	79,990,448	800,480	79,189,968

Assumptions:
- Level debt service
- Same spread as 2018 bonds to Treasury rates

Attachment D

STATE OF VERMONT
Proposed Non-Recurring Expenditure Model for Housing
Estimated Durationof 20 year for Bond Comparibility
Assumes $4M in revenue evenly split from Property Transfer Tax and Meals and Rooms
VHCB Spend is based on projections provided by VHCB

Year	Revenue	VHCB Spend	Balance	Additional Funds Deposited	Earned Interest Rate	Interest Earned During Year
1	4,000,000	-1,500,000	0	2,500,000	4%	50,000.00
2	4,000,000	-1,500,000	2,550,000	2,500,000	4%	152,000.00
3	4,000,000	-1,500,000	5,202,000	2,500,000	4%	258,080.00
4	4,000,000	-1,500,000	7,960,080	2,500,000	4%	368,403.20
5	4,000,000	-1,500,000	10,828,483	2,500,000	4%	483,139.33
6	4,000,000	-1,500,000	13,811,623	2,500,000	4%	602,464.90
7	4,000,000	-1,500,000	16,914,087	2,500,000	4%	726,563.50
8	4,000,000	-1,500,000	20,140,651	2,500,000	4%	855,626.04
9	4,000,000	-1,500,000	23,496,277	2,500,000	4%	989,851.08
10	4,000,000	-1,500,000	26,986,128	2,500,000	4%	1,129,445.12
11	4,000,000	-1,500,000	30,615,573	2,500,000	4%	1,274,622.93
12	4,000,000	-1,500,000	34,390,196	2,500,000	4%	1,425,607.84
13	4,000,000	-1,500,000	38,315,804	2,500,000	4%	1,582,632.16
14	4,000,000	-1,500,000	42,398,436	2,500,000	4%	1,745,937.44
15	4,000,000	-1,500,000	46,644,374	2,500,000	4%	1,915,774.94
16	4,000,000	-1,500,000	51,060,148	2,500,000	4%	2,092,405.94
17	4,000,000	-1,500,000	55,652,554	2,500,000	4%	2,276,102.18
18	4,000,000	-1,500,000	60,428,657	2,500,000	4%	2,467,146.26
19	4,000,000	-1,500,000	65,395,803	2,500,000	4%	2,665,832.11
20	4,000,000	-1,500,000	70,561,635	2,500,000	4%	2,872,465.40
	80,000,000	-30,000,000	75,934,100			25,934,100.37