

City of Detroit Police and Fire Retiree Health Care Trust

Actuarial Valuation Report
as of December 31, 2021





November 17, 2022

VEBA Board of Trustees
City of Detroit Police and Fire
Retiree Health Care Trust

Re: VEBA Valuation/Benefit Modeling as of December 31, 2021

Dear Trustees:

Gabriel, Roeder, Smith & Company ("GRS") has performed an actuarial valuation of the City of Detroit Police and Fire Retiree Health Care Trust as of December 31, 2021. The purpose of this actuarial valuation is to evaluate the financial status of the program as of December 31, 2021 and model the estimated solvency under benefit levels set by the Board for calendar year 2023.

This report is structured as follows:

- Background and Plan Structure
- Participant Data and Plan Description
- Valuation Results and Baseline Benefit Model
- Asset Information
- Methods and Assumptions
- Sensitivity Testing
- Alternate Scenario

This report was prepared at the request of the Board and is intended for use by the Board and those designated or approved by the Board. This report may be provided to parties other than the Board only in its entirety and only with the permission of the Board. This report should not be relied on for any purpose other than the purpose described above. GRS is not responsible for unauthorized use of this report.

The valuation results set forth in this report are based upon data and information, furnished by the Trust (or their designees), concerning Plan benefits, financial transactions, and beneficiaries of the VEBA. We reviewed this information for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the VEBA.

The valuation results summarized in this report involve actuarial calculations that require assumptions about future events. The mortality rate assumptions were chosen to be consistent with the rates of mortality used by the City of Detroit Police and Fire Retirement System. The assumed rate of investment return was selected by the Board to be 4% per annum. As of the valuation date, the remaining face value of the bonds is approximately 2% of the total assets (based on 100% monetization of the bonds). We believe that the 4% rate of investment return (gross of investment and administrative expenses) is a reasonable long-term assumption. However, users of this report are encouraged to consider the sensitivity of results to all the actuarial assumptions before making decisions regarding benefit levels.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: Plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in Plan provisions or applicable law. We have performed an analysis of the sensitivity of certain changes in the assumptions in this report.

We believe that the actuarial methods used in this report are reasonable and appropriate for the purpose for which they have been used. In addition, because it is not possible or practical to consider every possible contingency, we may use summary information, estimates or simplifications of calculations to facilitate the modeling of future events. We may also exclude factors or data that are deemed to be immaterial.

This report is not a recommendation to anyone to participate in the VEBA. GRS makes no representations or warranties to any person participating in or considering participation in the program.

This program is similar to a defined contribution plan. Benefits can be paid from this plan to the extent that the plan continues to be solvent. While the modeling in this report is intended to estimate how long the benefits can be paid (given a specific level of benefits), there are no guarantees that future events will unfold as modeled. We understand that the Board's intent is to annually model solvency and adjust benefits as they deem necessary.



To the best of our knowledge, the information contained in this report is accurate and fairly presents the actuarial position of the City of Detroit Police and Fire Retiree Health Care Trust as of December 31, 2021. No adjustments were made for investment activity occurring after December 31, 2021 in the measurement of the liabilities.

This report is not intended to establish rates of future contributions to the Trust. It is our understanding that the amount of all future Trust contributions has been established and that the Board will set benefit levels annually until such time as the Trust is depleted or until all participants have died, whichever comes first.

This report was prepared using our proprietary valuation model and related software which, in our professional judgment, has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

Abra D. Hill and Jamal J. Adora are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

This report replaces our draft report, dated July 22, 2022 and includes 2023 benefit levels.

Respectfully submitted,
Gabriel, Roeder, Smith & Company



Abra D. Hill, ASA, FCA, MAAA



Jamal J. Adora, ASA, EA, MAAA

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SECTION A

BACKGROUND AND PLAN STRUCTURE

Background and Plan Structure

The VEBA Trust was created during the Bankruptcy of the City of Detroit. It was funded with B-notes from the City of Detroit as well as (pre-established) contributions from the Foundations through 2034. The VEBA Board of Trustees is charged with determining the benefits that can be paid from the Trust. Benefits are payable to the participants only to the extent the Trust still has assets to fund the benefits. At the inception of the plan, the benefits were initially set at 1) \$120 per month toward the premiums for a Medicare Advantage plan from Blue Cross Blue Shield or HAP or 2) an HRA monthly benefit ranging from \$120 per month to \$395 per month depending on age, retirement type (normal or disabled) and Medicare eligibility. Historically, through a competitive bid process, the Trust has been able to manage the cost of the Medicare Advantage premiums and have adjusted benefits accordingly. The benefit levels payable for 2022 and 2023 are shown on page B-1.

The plan operates much like a group defined contribution plan in pay status. The participants of the plan are a closed group and all retired. As of December 31, 2021, there were 8,809 reported eligible participants. Of those, 8,031 were reported to have opted to actively participate. Of the 8,031 participants actively participating, 4,188 participants are receiving coverage under a Medicare Advantage plan and 1,547 are covered by the HRA benefit. During 2021, approximately 60% of the potential HRA payments that could have been made were utilized. The eligible (potential) and current (actually participating) participants are shown in greater detail on page B-1.

Liability of the Plan

Since benefits are limited to the available assets, the true liabilities of the plan are equal to the value of the assets and the plan is always 100% funded. For purposes of this report, however, we have computed a theoretical liability based on the benefit targets established by the Board. In that context, an unfunded liability (funded status less than 100%) indicates that benefits will likely need to be lowered below the Board's established benefit targets unless experience is more favorable than assumed (generating experience gains). It is important to note that in determining the unfunded liability, we have used the estimated market value of the Bonds assuming immediate and complete monetization at different monetization rates (percentages of face value). Funded status greater than 100% indicates that benefits could be increased, unless experience is less favorable than assumed (generating experience losses).

Sensitivity Testing and Preliminary Results

The draft report was presented to the Board at the July 2022 Board meeting, based on the 2022 benefit levels. This final report reflects the 2023 benefit levels set by the Board.

SECTION B

PARTICIPANT DATA AND PLAN DESCRIPTION

Retired Member Summary as of December 31, 2021

Benefit Type	Paid by the Trust for Calendar Year		Age Range			Total Lives	Total Lives
	2022	2023	Under 26	Pre 65	Post 65	2021	2020
Medicare Advantage PPO							
Single	\$ 180.00	\$ 195.00	-	29	3,997	4,026	4,207
Medicare Advantage HMO							
Single	\$ 180.00	\$ 195.00	-	2	160	162	173
Total MA Participants[#]			-	31	4,157	4,188	4,380
Opt-Out of MA	\$ 175.00	\$ 185.00	-	14	2,282	2,296	2,303
Retiree HRA							
Income Level Purchased on State Exchange	\$ 225.00	\$ 235.00	-	18	-	18	23
Non Medicare Eligible Duty Disabled Police and Fire	\$ 400.00	\$ 400.00	-	297	3	300	320
Non Medicare Eligible Stipend	\$ 175.00	\$ 185.00	-	637	16	653	722
Over Age 65 Non Medicare Eligible	\$ 350.00	\$ 360.00	-	-	77	77	72
Spouse HRA							
Income Level Purchased on State Exchange	\$ 225.00	\$ 235.00	-	9	-	9	
Non Medicare Eligible Spouse	\$ 175.00	\$ 185.00	-	428	58	486	489
Over Age 65 Non Medicare Eligible	\$ 350.00	\$ 360.00	-	-	4	4	
Total HRA Members (No Opt-Out)			-	1,389	158	1,547	1,626
Total Current Participants			-	1,434	6,597	8,031	8,309
Total Potential Participants							
Spouse Not Receiving	\$ -		-	135	350	485	444
Employees Waiving, no MA, no HRA	\$ -		1	54	238	293	294
Participants - No Enrollment Election	\$ -		-	-	-	-	-
May Be Added	\$ -		-	-	-	-	-
Special Open Enrollment	\$ -		-	-	-	-	-
Total Potential Participants			1	189	588	778	738
Grand Total			1	1,623	7,185	8,809	9,047

For 2023, the VEBA pays the entire Medicare Advantage (MA) premium in addition to a \$35 monthly stipend (\$25 in 2022) available through a Health Reimbursement Account (HRA).

Amounts shown are net amounts paid by the Trust (after reflecting amounts charged to participants).

Participants under age 65 will be eligible for the MA benefit (up to \$180 in 2022 and \$190 in 2023) or the Opt-Out HRA (\$175 in 2022 and \$185 in 2023) upon reaching age 65.



Retired Member Age Summary as of December 31, 2021

Age	MA PPO	MA HMO	Opt-Out HRA	Retiree HRA				Spouse HRA		
				Income Level	Non-Med Duty Dis	Non-Med Elig	Over 65 Non-Med Elig	Income Level	Non-Med Elig	Over 65 Non-Med Elig
Under 30	-	-	-	-	-	-	-	-	-	-
30 - 34	-	-	-	-	-	-	-	-	1	-
35 - 39	-	-	-	-	1	-	-	-	3	-
40 - 44	-	-	-	-	43	8	-	-	11	-
45 - 49	1	-	-	-	58	12	-	-	37	-
50 - 54	4	-	-	2	90	58	-	1	85	-
55 - 59	8	1	4	12	59	243	-	3	111	-
60 - 64	15	1	10	13	46	316	-	5	180	-
65 - 69	450	38	756	-	2	16	15	-	37	-
70 - 74	1,110	53	968	-	1	-	35	-	13	3
75 - 79	1,158	41	347	-	-	-	18	-	6	-
80 - 84	643	12	139	-	-	-	6	-	-	1
85 - 89	326	9	61	-	-	-	1	-	2	-
90 - 94	234	4	45	-	-	-	5	-	-	-
95 and Over	77	3	24	-	-	-	1	-	-	-
TOTAL	4,026	162	2,354	27	300	653	81	9	486	4

SECTION C

VALUATION RESULTS AND BASELINE BENEFIT MODEL

Summary of Results

Principal Valuation Results

Valuation Date:	December 31, 2021
A) Assets	
1) Face Value of Bonds at Valuation Date	\$ 5,000,000
2) Monetization Percentage	80%
3) Estimated Bond Market Value	\$ 4,000,000
4) Net Additional Assets	233,837,048
5) Market Value of Assets	\$ 237,837,048
B) Present Value of Future Contributions	\$ 445,524
C) Present Value of Future	
1) Benefits	\$ 156,032,175
2) Expenses	17,010,732
3) Total Liability	\$ 173,042,907
D) Asset Surplus/(Deficit) [A.5+B-C.3]	\$ 65,239,665
E) Funded Ratio [(A.5+B)/C.3]	137.7%

Recognized Rate of Return

Additions	<u>Based on 80% Monetization</u>
Investment Income:	
Interest and Dividends	\$ 6,633,521
Net Increase in Fair Value of Investments	27,523,391
Investment Related Expenses	<u>(178,633)</u>
Net Investment Income	\$ 33,978,279
Contributions - Foundation for Detroit's Future	<u>43,750</u>
Total Additions	\$ 34,022,029
 Deductions	
Premium Payments - Net of Retiree Contributions	\$ 5,124,331
Health Reimbursement Account Reimbursements	4,113,477
Administrative Expenses	<u>745,831</u>
Total Deductions	\$ 9,983,639
 Net Increase in Fiduciary Net Position	\$ 24,038,390
Net Position - Beginning of Year	<u>213,798,658</u>
Net Position - End of Year	<u><u>\$ 237,837,048</u></u>
 Rate of Return	 16.36%

Discussion

Actuarial Valuation

This section contains the results of an actuarial valuation of the City of Detroit Police and Fire Retiree Health Care Trust as of December 31, 2021.

The primary purposes of the actuarial valuation are to:

- Compare the actuarial present value of the obligations for retiree health care as of December 31, 2021, with the value of the assets associated with the Program as of that same date; and
- Compare the actuarial present value of the obligations for retiree health care as of December 31, 2021, with the value of the assets associated with the Program as of that same date under certain alternate assumptions to show sensitivity to those assumptions.

In addition, the report provides summaries of the member data, financial data, plan provisions valued, and actuarial assumptions and methods.

Financial Status of Plan

As of December 31, 2021, the Present Value of all Future Obligations (PVFO) at that date is \$173.04 million. Plan assets as of December 31, 2021, based on a 80% monetization of Trust assets, are \$238.28 million (including the present value of future contributions).

The difference between the market value of assets of \$238.28 million and PVFO of \$173.04 million represents a Plan surplus of \$65.24 million. The Plan is 137.7% funded after consideration of \$445,524 (present value) in future scheduled contributions. A funded percent of over 100% implies that the Trust will still have money after the last participant dies, if experience is similar or more favorable than assumed.

The Board monetized all but \$5 million of the Detroit Bonds at a monetization rate of between 92% and 95% of face value.

The funded status may not be appropriate for determining the settlement cost of the Plan. The funded status is appropriate for determining the need for future contributions. However, since there are no future contributions other than those already accounted for in the valuation assets, the funded status is appropriate for determining the long-term solvency of the Plan and/or the need to adjust benefits.

Discussion (Continued)

Plan Status

The Plan benefits are not vested and may be reduced in the future. The Board is expected to decide annually on the level of benefits that will be paid each year. Future valuations will take into consideration these decisions as they occur. While the plan is closed to new members, not all members of the plan have chosen to participate. However, we understand that members not currently participating can choose to participate in the future. See additional participation comments below.

Participation

Currently, there are approximately 778 members who have not elected to actively participate (the Potential Participants). The liabilities shown in the valuation results section of this report do not include the potential benefits to these members. However, we show the possible impact of these members choosing to participate in the sensitivity section of the report and/or in the live modeling performed for the Board.

Members who are under age 65 and receiving an HRA payment were assumed to elect a Medicare Advantage plan upon attaining age 65.

Please see Section F to see how changes in assumptions (sensitivity) affect the funded status and solvency.

Projection with Alternate HRA Utilization Assumption

This is the estimated employer benefit payments from 2022-2032 using a 60% HRA utilization assumption with no potential future spouses. Expenses are not included.

2022	\$ 13,532,194
2023	13,166,565
2024	12,722,550
2025	12,270,200
2026	11,800,324
2027	11,313,674
2028	10,841,407
2029	10,369,379
2030	9,899,898
2031	9,414,220
2032	8,926,382

Discussion (Continued)

Utilization

Experience during 2021 shows that members electing HRA benefits are utilizing approximately 60% of their annual benefits, on average. The current Board adopted utilization assumptions are shown below:

Utilization Assumption		
Current Benefit	Future Medicare Eligible	Benefit Group
100%	100%	Medicare Advantage PPO
100%	100%	Medicare Advantage HMO
50%	100%	Opt-Out of MA
50%	100%	Below FPL in a Non Medicaid Exp. State
50%	100%	Income Level and Purchased on State Exchange
50%	100%	Non Medicare Eligible Duty Disabled Police and Fire
50%	100%	Non Medicare Eligible Stipend
50%	100%	Over Age 65 Non Medicare Eligible
50%	100%	Non Medicare Eligible Spouse
0%	0%	Spouse Not Receiving
0%	0%	Actively Waiving
0%	0%	No Enrollment Elected

HRA Utilization History					
Valuation Date	100% of Expected HRA [^]	Estimated HRA Benefits*	Census	HRA Count*	Utilization
12/31/2021	\$ 6,902,580	\$ 4,113,477	12/31/2021	3,737	60%
12/31/2020	\$ 7,000,800	\$ 3,929,286	12/31/2020	3,780	56%
12/31/2019	\$ 6,910,200	\$ 3,349,532	12/31/2019	3,859	49%
12/31/2018	\$ 6,279,270	\$ 2,558,583	12/31/2018	3,773	41%
12/31/2017	\$ 6,456,213	\$ 2,586,264	12/31/2017	3,670	40%

[^] Expected HRA represents the sums of the mid-point between the BOY and EOY valuation number counts for each HRA benefit type multiplied by the maximum HRA amount for that benefit type.

* Estimated by averaging BOY and EOY census counts.

Data for end of 2015/beginning of 2016 (the first year of the plan) was not detailed enough or precise enough to include either 2015 or 2016 in the chart above.

Discussion (Continued)

Asset Data

Prior to 2019, we received unaudited asset information to perform the valuations. Since 2019, we also received the audited financial report for the final report. The draft report uses unaudited asset information. This report has been updated with audited asset information.

Member Data

Overall, there were 8,809 total current and potential participants reported for the 2021 valuation, this is down approximately 3% from the 9,047 current and potential participants in the 2020 valuation. Over the last 5 years we have seen an approximately 4% decrease per year. Since this is a closed group, we would expect an annual decline of membership in the 2% to 4% range, based on our current mortality assumption.

Assumptions

The mortality assumptions were updated from versions of the RP-2014 tables to PubS-2010 Public Safety Retiree table for males and females with male rates multiplied by 115% and female rates multiplied by 125%. The tables are projected to be fully generational, based on the 2-dimensional, sex distinct mortality improvement scale MP-2021. The updated assumption increased actuarial liabilities which raised the funded ratio from 137.7% to 139.1%. There were no other assumption changes for this valuation.

We believe the assumptions currently in use for the valuation, as adopted by the Board, are reasonable based on general market conditions. Note, we have not evaluated the specific default risk associated with any specific investment (including the City of Detroit Bonds). Please see comments on Future Outlook regarding such risks.

As of the valuation date, the remaining Detroit bonds represent approximately 2% of total assets. As such, the asset allocation is more important for determining the assumed rate of return for future valuations and modeling. We understand from the June 22, 2021 Board meeting that there are no current formal plans to change the asset allocation. We will continue to review the assumed rate of return assumption with each future valuation.

Benefit changes

Benefits were increased for most HRA recipients and Medicare Advantage premiums increased. Please see the table on page B-1 for more detail.

Discussion (Concluded)

Experience

Experience during the year was more favorable than assumed, in aggregate. Sources of favorable experience were greater than expected recognized investment return and greater than expected retiree mortality.

Recommendation

We recommend that the administrator separately track the HRA benefit payments for Non-Medicare Advantage members and Medicare Advantage members. This will enable us to develop a more precise utilization assumption in future valuations once sufficient Medicare Advantage HRA experience emerges.

Future Outlook

This report does not consider the impact of demographic or investment experience after the valuation date of December 31, 2021.

We recommend the Board consider the various demographic and investment risks while deciding on next year's benefit levels. Please let us know if the Board would like us to run any specific projections (in addition to the sensitivity projections included in Section F to assist in this decision).

Solvency Projection Assumptions Baseline

\$253,900,999	Original Face Value of Bond
\$5,000,000	Face Value of Bond as of Valuation Date
\$233,837,048	Investable Assets
4.00%	Bond Coupon per Annum to 2035 (as % of Face Value)
6.00%	Bond Coupon per Annum at 2035 (as % of Face Value)
\$925,000	Expected First Year Administrative Expenses
3.00%	Expected Growth Rate for All Expenses
	Administrative expenses are pro-rated based on remaining population.
	Expenses are assumed to be \$0 when the remaining population reaches 0.5%.

The solvency scenarios are based on the following:

- 1) The 2023 and beyond benefit payments are based on the 2023 benefit levels set by the Board.
- 2) No future increases in benefit levels were assumed.
- 3) Members not currently participating were assumed NOT to participate in the future.
- 4) Members over age 65 and currently receiving benefits were assumed to continue to receive the benefit indicated on the data file for life (or until insolvency).
- 5) Members under age 65 were assumed to select the PPO Medicare Advantage plan upon reaching age 65.
- 6) Bonds sold in the first two quarters of 2021 were reflected with their average monetization. Monetization of the remaining \$5 million was assumed to be 55%.
- 7) Investment return was assumed to be 4.0%.
- 8) Members receiving HRA benefits were assumed to utilize 50% of available benefits prior to age 65 and 100% of benefits at and after age 65.

City of Detroit Police and Fire Retiree Health Care Trust

Baseline

Current Participants										Potential Future Participants			Group Description
MA PPO	MA HMO	Opt-Out HRA	Retiree HRA						Spouse HRA (Non-Med Elig)	Spouse Not Receiving	Actively Waived	No Enrollment Election	
			Below FPL	Income Level	Non-Med Duty Dis	Non-Med Elig	Over 65 Non-Med Elig	Over 65 Unsub					
\$ 180.00	\$ 180.00	\$ 175.00	\$ 200.58	\$ 225.00	\$ 400.00	\$ 175.00	\$ 350.00	\$ 175.00	\$ 175.00	n/a	n/a	n/a	2022 Monthly Amount
\$ 195.00	\$ 195.00	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00	n/a	n/a	n/a	Current Monthly Amount
4,026	162	2,296	-	27	300	653	81	-	486	485	-	293	Number in Group 12/31/2021
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Include Group
\$ -	\$ -	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00				Flat Dollar Monthly Lifetime Benefit (per person) Pre-65
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00				Flat Dollar Monthly Lifetime Benefit (per person) Post-65
100%	100%	50%	50%	50%	50%	50%	50%	50%	50%				Utilization Percentage Pre-65 (Applies to Flat Dollar Only)
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%				Utilization Percentage Post-65 (Applies to Flat Dollar Only)
\$ -	\$ -	\$ 92.50	\$ 105.29	\$ 117.50	\$ 200.00	\$ 92.50	\$ 180.00	\$ 92.50	\$ 92.50	\$ 62.50	\$ 92.50	\$ 62.50	Flat \$ Pre 65 benefit * Utilization %
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00	\$ 62.50	\$ 195.00	\$ 125.00	Flat \$ Post 65 benefit * Utilization %
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	Annual increase in Flat Dollar Benefit

\$253,900,999	Original Face Value of Bonds at 12/10/2014
\$5,000,000	Face Value of Bond (A) at Val Date
\$0	Face Value of Bond (B) at Val Date
80%	MV of Bond (used to calculate UAAL)
\$233,837,048	Investable Assets*
Never	Year of Insolvency
Never	Year Monetization/Cash is Needed
4.00%	Average Yield

156,032,175	Present Value of Benefits
17,010,732	Present Value of Expenses
173,042,907	Total
237,837,048	Valuation Assets (Immediate Monetization)^
(64,794,141)	Unfunded Actuarial Accrued Liability (UAAL)
445,524	Present Value of Future Contributions
(65,239,665)	Asset Deficit/(Surplus)
137.7%	Funded %

Notes:

- * Excludes accrued interest receivable as it is already accounted for in the cash flow projection.
- # Bond coupon payment does not accrue additional interest during the year in which it is paid.
- ^ Valuation assets include monetized valuation of bond and indicated monetization rate plus cash

Year	Ad-Hoc Prem. Increase	Ad-Hoc Investment Return	Optional Bond Sale	Optional % of Face	Face Value of Bonds BOY	Principal Repayment	Jan 1. Assets*	Trust Benefit Payments	Expenses	Grant / (Due City)	Interest				Dec. 31 Assets	% Contracts Remaining
											Bond Coupon	Invested Assets	Ben./ Expen./ Grant/ Bond#	Total		
2022	N/A	4.00%	\$ -	0.00%	\$ 5,000,000	\$ -	\$ 233,837,048	\$ (13,532,194)	\$ (916,359)	\$ 43,750	\$ 200,000	\$ 9,353,482	\$ (288,096)	\$ 9,265,386	\$ 228,697,631	98%
2023	0.00%	4.00%	-	-	5,000,000	-	228,697,631	(14,008,591)	(914,465)	43,750	200,000	9,147,905	(297,586)	9,050,319	222,868,643	94%
2024	0.00%	4.00%	-	-	5,000,000	-	222,868,643	(13,516,899)	(911,855)	43,750	200,000	8,914,746	(287,700)	8,827,046	217,310,684	90%
2025	0.00%	4.00%	-	-	4,971,590	28,410	217,339,094	(13,020,220)	(908,437)	43,750	198,864	8,693,564	(277,698)	8,614,729	212,068,917	87%
2026	0.00%	4.00%	-	-	4,944,995	26,595	212,095,511	(12,507,189)	(904,110)	43,750	197,800	8,483,820	(267,351)	8,414,269	207,142,231	83%
2027	0.00%	4.00%	-	-	4,919,919	25,077	207,167,308	(11,980,396)	(898,777)	43,750	196,797	8,286,692	(256,708)	8,226,781	202,558,665	79%
2028	0.00%	4.00%	-	-	4,896,614	23,304	202,581,970	(11,467,369)	(892,343)	43,750	195,865	8,103,279	(246,319)	8,052,824	198,318,832	75%
2029	0.00%	4.00%	-	-	4,875,310	21,304	198,340,135	(10,952,525)	(884,726)	43,750	195,012	7,933,605	(235,870)	7,892,748	194,439,382	72%
2030	0.00%	4.00%	-	-	4,856,263	19,047	194,458,429	(10,440,026)	(875,864)	43,750	194,251	7,778,337	(225,443)	7,747,145	190,933,435	68%
2031	0.00%	4.00%	-	-	4,574,949	281,314	191,214,748	(9,914,747)	(865,722)	43,750	182,998	7,648,590	(214,734)	7,616,854	188,094,882	64%
2032	0.00%	4.00%	-	-	4,291,024	283,925	188,378,807	(9,389,039)	(854,299)	43,750	171,641	7,535,152	(203,992)	7,502,801	185,682,021	60%
2033	0.00%	4.00%	-	-	3,995,781	295,243	185,977,264	(8,841,184)	(841,630)	43,750	159,831	7,439,091	(192,781)	7,406,141	183,744,340	57%
2034	0.00%	4.00%	-	-	3,632,528	363,253	184,107,593	(8,295,623)	(827,792)	43,750	145,301	7,364,304	(181,593)	7,328,012	182,355,939	53%
2035	0.00%	4.00%	-	-	3,269,275	363,253	182,719,192	(7,755,662)	(812,905)	-	196,157	7,308,768	(171,371)	7,333,553	181,484,178	49%
2036	0.00%	4.00%	-	-	2,906,022	363,253	181,847,431	(7,219,244)	(797,124)	-	174,361	7,273,897	(160,327)	7,287,931	181,118,993	46%
2041	0.00%	4.00%	-	-	1,089,758	363,253	185,221,192	(4,783,325)	(712,631)	-	65,386	7,408,848	(109,919)	7,364,314	187,089,550	30%
2046	0.00%	4.00%	-	-	-	-	200,672,780	(2,960,382)	(642,637)	-	-	8,026,911	(72,060)	7,954,851	205,024,612	18%
2051	0.00%	4.00%	-	-	-	-	227,143,977	(1,746,194)	(609,269)	-	-	9,085,759	(47,109)	9,038,650	233,827,164	10%
2056	0.00%	4.00%	-	-	-	-	265,140,477	(975,163)	(613,980)	-	-	10,605,619	(31,783)	10,573,836	274,125,170	5%
2061	0.00%	4.00%	-	-	-	-	314,854,859	(499,598)	(650,070)	-	-	12,594,194	(22,993)	12,571,201	326,276,392	3%
2066	0.00%	4.00%	-	-	-	-	377,242,728	(227,910)	(713,867)	-	-	15,089,709	(18,836)	15,070,874	391,371,824	1%
2071	0.00%	4.00%	-	-	-	-	453,929,560	(88,704)	-	-	-	18,157,182	(1,774)	18,155,408	471,996,265	0%



SECTION D

ASSET INFORMATION

Bond Information

The municipal bond backing the retiree medical benefits had an initial par value of \$253,900,999 at December 10, 2014. The Trust holds a bond with a face value of \$5,000,000 as of the valuation date. This bond pays a coupon of 4% per annum, two times per year and 6% per annum for years 2035-2044. Principal is repaid in 20 equal annual installments beginning April 2025.

The mandatory repayment schedule was adjusted in 2018. Please see page D-5 for information on the revised redemption requirements.

Contributions of \$43,750 will also continue to be made annually until 2034 under an agreement with the Foundation for Detroit's Future.

Reported Bond Sales

Date	Bonds Sold	Percent of Face Value	Type of Bond Sold
01/24/2018	\$ 20,000,000	81.05875%	Series A
05/31/2019	\$ 20,000,000	86.50000%	Series A
10/22/2019	\$ 15,000,000	87.37500%	Series A
02/04/2021	\$ 50,000,000	95.00000%	Series A
05/06/2021	\$119,000,000	92.50000%	Series A
05/25/2021	\$ 24,900,999	94.50000%	Series A and Series B

Reported Revenues and Expenditures

December 31, 2021

(from Audited Assets)

Income Statement

Additions	Market Value
Investment Income:	
Interest and Dividends	\$ 6,633,521
Net Increase in Fair Value of Investments	24,861,004
Investment Related Expenses	(178,633)
Net Investment Income	\$ 31,315,892
Contributions - Foundation for Detroit's Future	43,750
Total Additions	\$ 31,359,642
 Deductions	
Premium Payments - Net of Retiree Contributions	\$ 5,124,331
Health Reimbursement Account Reimbursements	4,113,477
Administrative Expenses	745,831
Total Deductions	\$ 9,983,639
 Net Increase/(Decrease) in Fiduciary Net Position	\$ 21,376,003
Net Position - Beginning of Year	217,966,763
Net Position - End of Year	<u>\$ 239,342,766</u>

Reported Plan Assets at Market Value

December 31, 2021

(from Audited Assets)

Balance Sheet

12/30/2021

ASSETS

Current Assets:

Cash and cash equivalents	\$ 50,531,594
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Total Current Assets	\$ 50,531,594
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Investments:

Equities	\$ 99,326,781
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Fixed income	\$ 85,115,193
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City of Detroit Bonds Financial Recovery Bonds	\$ 4,759,950
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Investment at Cost	\$ 189,201,924
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Investment Market Value	\$ 189,201,924
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Other Assets:

Accrued investment income receivable	\$ 690,164
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Other receivables	\$ 37,130
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Prepaid Expenses	\$ 18,474
------------------	-----------

Total Other Assets	\$ 745,768
--------------------	------------

Total Assets	\$ 240,479,286
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LIABILITIES

Current Liabilities:

Accounts Payable	\$ 1,136,520
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Due to City of Detroit General Retiree Health Care Trust	\$ -
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Total Current Liabilities	\$ 1,136,520
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Total Liabilities	\$ 1,136,520
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Net Fund Balance	\$ 239,342,766
------------------	----------------

Total Liab & Fund Balance	\$ 240,479,286
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Development of Investable Assets (at Market Value) December 31, 2021

For projection purposes, the January 1, 2022 assets are estimated to be as follows:

\$ 50,531,594	Cash and cash equivalents
184,441,974	Investments
<u>(1,136,520)</u>	Liabilities
\$ 233,837,048	January 1, 2022 Investable Assets

Accrued interest receivable is excluded because it is accounted for in the future cash flow projection.

Expense History

Date	Total Expenses
2016	\$ 1,281,137
2017	\$ 1,095,132
2018	\$ 802,075
2019*	\$ 868,534
2020*	\$ 844,468
2021*	\$ 924,464

** From Financial Report (audited Asset data).*

Revised Mandatory Bond Redemption Schedule

Series 2014(A)				12/31/2018	
Mandatory	Redemption Requirements				
Redemption Date (Apr 1)	Outstanding Prior to Tender/Purchase	Reduced	Remaining/ Outstanding		
2025	\$ 30,828,003	\$ 28,416,937	\$ 2,411,066	\$ 424,332,593	\$ 28,410
2026	30,828,003	28,571,017	2,256,986	421,921,527	26,595
2027	30,828,003	28,699,820	2,128,183	419,664,541	25,077
2028	30,828,003	28,850,233	1,977,770	417,536,358	23,304
2029	30,828,003	29,020,015	1,807,988	415,558,588	21,304
2030	30,828,003	29,211,542	1,616,461	413,750,600	19,047
2031	30,828,003	6,953,898	23,874,105	412,134,139	281,314
2032	30,828,003	6,732,253	24,095,750	388,260,034	283,925
2033	30,828,003	5,771,739	25,056,264	364,164,284	295,243
2034	30,828,003		30,828,003	339,108,020	363,253
2035	30,828,003		30,828,003	308,280,017	363,253
2036	30,828,003		30,828,003	277,452,014	363,253
2037	30,828,003		30,828,003	246,624,011	363,253
2038	30,828,003		30,828,003	215,796,008	363,253
2039	30,828,003		30,828,003	184,968,005	363,253
2040	30,828,003		30,828,003	154,140,002	363,253
2041	30,828,003		30,828,003	123,311,999	363,253
2042	30,828,003		30,828,003	92,483,996	363,253
2043	30,828,003		30,828,003	61,655,993	363,253
2044 *	30,827,990		30,827,990	30,827,990	363,251
\$616,560,047		\$192,227,454	\$424,332,593	\$ -	\$5,000,000

* Maturity.

Revised redemption schedule was provided by legal counsel. GRS pro-rated the “Remaining Redemption Requirements Outstanding” based on the amount of bonds held by the VEBA as of the valuation date.

SECTION E

METHODS AND ASSUMPTIONS

Valuation Methods and Assumptions

Data Related Assumptions

1. Those opting out of Medicare Advantage plans were assumed to continue opting out.
2. Retirees over the age of 65 who are receiving an HRA payment were assumed not to be Medicare eligible.
3. Retirees under the age of 65 who are indicated as receiving a Medicare health care plan were assumed to be disabled.
4. Retirees under age 65 receiving an HRA payment were assumed to be eligible for Medicare at age 65 and choose a single coverage Aetna MA plan when Medicare eligible.
5. In cases where the HRA information differed from the “MedicalPlan” information, it was assumed that the “MedicalPlan” information superseded the HRA information.

Data Processing

Raw data included a field “MedicalPlan” which was used to assign members into MA PPO, MA HMO, MA Opt-Out, or HRA. Spouses were assigned benefits first using the “ClassCodeDescription” information to see if they were included under the retiree’s MA benefit then using the HRA benefit if they were not. Since the raw data included a separate HRA benefit this year for the retiree and spouse, the members indicated as having an HRA were assigned into benefit groups using the retiree HRA benefits, and spouses without a MA benefit were assigned to benefit groups using their HRA benefit. For spouses who received a \$120 benefit, if they were over 65 they were assumed to be receiving a Medicare Advantage Opt-Out benefit otherwise they were assumed to be receiving a Non-Medicare Eligible Stipend. Spouses who received a benefit over \$120, for which they are not eligible were instead assigned a \$120 benefit.

Members were compared to last year’s data and after receiving approval from the Trust and the Retirement System of the City of Detroit compared to the pension systems’ data for consistency and to provide any missing spouse data. Any inconsistencies or further missing data were clarified by the Trust. After the initial data processing is completed, the summary of the data (shown on page B-1 of this report) is drafted and shared with the Board. Any unexpected results are highlighted and the Board is requested to let us know if any additional research or processing is needed before proceeding with the valuation. This year, the Board did not request any additional research/processing.

Valuation Method: Present Value of Future Benefits compared to current valuation assets.

Rates of Investment Return. **4.0% per year**, compounded annually, net of investment expenses. This is the rate selected by the Board. This assumption is used to equate the value of payments due at different points in time. In the cash flow analysis, this rate of return is applied to assets in the Trust. The interest payable on the bond prior to monetization is modeled under the terms of the bond.

Valuation Assets: Market value of investable assets plus Board adopted monetization of remaining City bonds plus present value of future Grant Money (contributions).

Valuation Methods and Assumptions

Mortality Assumptions

2021 Attained Ages	Sample Rates*	
	PubS-2010 MP-2021 Male	PubS-2010 MP-2021 Female
25	0.0005%	0.0003%
30	0.0006	0.0005
35	0.0008	0.0006
40	0.0010	0.0007
45	0.0015	0.0011
50	0.0021	0.0017
55	0.0034	0.0032
60	0.0061	0.0058
65	0.0102	0.0092
70	0.0168	0.0147
75	0.0291	0.0256
80	0.0531	0.0458

** Applicable to calendar year 2021. Values for future years are determined using the MP-2021 projection scale.*

PubS-2010 Public Safety Retiree table for males and females with male rates multiplied by 115% and female rates multiplied by 125%. The tables are projected to be fully generational, based on the 2-dimensional, sex distinct mortality improvement scale MP-2021.

Valuation Methods and Assumptions (Concluded)

Health Care Trend Assumptions applied to Trust payment toward Medicare Advantage (cost of premium in excess of Trust payment is paid by participant): None assumed.

HRA benefit levels were assumed to be fixed at current levels.

Administrative Expenses: Administrative expenses (\$745,831 in 2021 according to audited assets) are assumed to increase by 3.0% per year pro-rated by the number of remaining participants. All other expenses (\$178,633 in Fiscal Year 2021 according to audited assets) are assumed to increase by 3.0% per year. All expenses are assumed to be \$0 when less than 0.50% of valuation population remains. Expenses are assumed to be \$925,000 in 2022.

The rationale for these assumptions is as follows:

Investment Return Assumption: The rate specified by the Board.

Mortality: The underlying table used in the Police and Fire Retirement System.

Health Care Trend: Based on current Plan design and Plan limited experience of not providing benefit increases.

HRA Utilization Assumptions: Observed rates of HRA utilization, professional judgement, and a margin for conservatism.

Other: Professional judgement.

SECTION F

SENSITIVITY TESTING

Sensitivity Testing Results

Sensitivity testing is an important component of the services GRS provides to the Board of Trustees. We have developed a modeling tool that allows for the plan solvency to be tested under different parameters, such as different benefit levels, different levels of utilization, different values for the monetization of the B-notes, etc. The model has been demonstrated to the Board, interactively.

Therefore, we have projected the Plan's results under alternative assumptions for future investment income as follows:

1. Current valuation assumed rate of return (4.00% investment return net of investment expenses and 55% bond monetization).
2. Current valuation assumed rate of return (4.00% investment return net of investment expenses and 80% bond monetization).
3. Assumed rate of return (5.00% investment return net of investment expenses and 55% bond monetization).
4. Assumed rate of return (5.00% investment return net of investment expenses and 80% bond monetization).
5. Assumed rate of return (3.00% investment return net of investment expenses and 55% bond monetization).
6. Assumed rate of return (3.00% investment return net of investment expenses and 80% bond monetization).
7. Alternate scenario with 100% utilization for current participants (4.00% investment return net of investment expenses and 80% bond monetization).
8. Current + 2% annual increases (4% interest, 80% bond monetization, various utilization).

The summary of each of these scenarios on the principal valuation results is presented on the following page.

Note that alternate investment return assumptions apply in all future years but only to invested assets. Prior to monetization, interest on the bond is based on the terms of the bond in the projections. Because the current amount of bonds monetized, changes in the investment return assumption have a large effect on the current funded status and solvency date. If the date of the monetization is moved sooner than scheduled, changes in the investment return assumption will have a relatively greater effect on the funded status and solvency date.

Sensitivity Testing Results

\$ in Millions^

	Previous Valuation Assumptions	4% Return, 55% of Bond Value	(Baseline) Current Valuation Assumptions	5% Return, 55% of Bond Value	5% Return, 80% of Bond Value	3% Return, 55% of Bond Value	3% Return, 80% of Bond Value	Alternate - Current with 100% Utilization	Alternate - Current with 2% Benefit Increases
	1a	1b	2	3	4	5	6	7	8
Assumed Investment Return	4.00%	4.00%	4.00%	5.00%	5.00%	3.00%	3.00%	4.00%	4.00%
Monetization	55.00%	55.00%	80.00%	55.00%	80.00%	55.00%	80.00%	80.00%	80.00%
A) Assets									
1) Bond Value	\$5.0	\$5.0	\$5.0	\$5.0	\$5.0	\$5.0	\$5.0	\$5.0	\$5.0
2) Monetization	55%	55%	80%	55%	80%	55%	80%	80%	80%
3) Market value of Bond	\$2.8	\$2.8	\$4.0	\$2.8	\$4.0	\$2.8	\$4.0	\$4.0	\$4.0
4) Investable Assets	\$233.8	\$233.8	\$233.8	\$233.8	\$233.8	\$233.8	\$233.8	\$233.8	\$233.8
5) Assets	\$236.6	\$236.6	\$237.8	\$236.6	\$237.8	\$236.6	\$237.8	\$237.8	\$237.8
B) Present Value of Future Contributions	\$0.4	\$0.4	\$0.4	\$0.4	\$0.4	\$0.5	\$0.5	\$0.4	\$0.4
C) Actuarial Results									
1) Liabilities - Present Value of Benefits	158.1	156.0	156.0	143.7	143.7	170.5	170.5	191.2	186.5
2) Liabilities - PV of Future Expenses	17.0	17.0	17.0	14.8	14.8	19.9	19.9	17.0	17.0
3) Present Value of Benefits/Expenses	\$175.1	\$173.0	\$173.0	\$158.5	\$158.5	\$190.4	\$190.4	\$208.2	\$203.5
D) Asset Surplus/(Deficit) [A.5+B-C.3]	\$61.91	\$63.99	\$65.2	\$78.6	\$79.8	\$46.65	\$47.9	\$30.10	\$34.79
E) Funded Ratio [(A.5+B)/C.3]	135.4%	137.0%	137.7%	149.6%	150.4%	124.5%	125.2%	114.5%	117.1%
F) Projected Insolvency Date [#]	Never	Never	Never	Never	Never	Never	Never	Never	Never
Increase/(Decrease) from Baseline in									
G) Surplus/(Deficit)	\$(3.33)	\$(1.25)	\$0.00	\$13.32	\$14.57	\$(18.59)	\$(17.34)	\$(35.14)	\$(30.45)
H) Funded Ratio	(2.3)%	(0.7)%	0.0%	11.9%	12.7%	(13.2)%	(12.5)%	(23.2)%	(20.6)%

[#] Assuming bonds held to maturity.

[^] Totals may not add due to rounding.



Sensitivity Testing Results History

Valuation Date	4% Return, 55% of Bond Value 1b	(Baseline) Current Valuation Assumptions 2	5% Return, 55% of Bond Value 3	5% Return, 80% of Bond Value 4	3% Return, 55% of Bond Value 5	3% Return, 80% of Bond Value 6	Alternate - Current with 100% Utilization 7	Alternate - Current with 2% Benefit Increases 8
12/31/2016	92.0%	132.1%	108.9%	156.3%	74.2%	106.5%	82.4%	81.8%
12/31/2017	103.1%	148.4%	114.9%	165.3%	91.5%	131.6%	94.6%	89.8%
12/31/2018 ^(b)	103.6%	144.4%	114.5%	159.6%	92.9%	129.4%	92.8%	88.3%
12/31/2019 ^(a,b)	115.6%	151.2%	127.4%	166.7%	103.9%	135.9%	96.2%	98.9%
12/31/2020	122.4%	159.4%	134.7%	175.5%	110.1%	143.4%	100.1%	105.2%
12/31/2021 ^(a,b)	137.0%	137.7%	149.6%	150.4%	124.5%	125.2%	114.5%	117.1%

(a) After changes in actuarial assumptions or methods.

(b) After changes in benefit provisions.

City of Detroit Police and Fire Retiree Health Care Trust

Scenario 1 (Before Demographic Assumption Changes)

Current Participants										Potential Future Participants			Group Description
MA PPO	MA HMO	Opt-Out HRA	Retiree HRA						Spouse HRA (Non-Med Elig)	Spouse Not Receiving	Actively Waived	No Enrollment Election	
			Below FPL	Income Level	Non-Med Duty Dis	Non-Med Elig	Over 65 Non-Med Elig	Over 65 Unsub					
\$ 180.00	\$ 180.00	\$ 175.00	\$ 200.58	\$ 225.00	\$ 400.00	\$ 175.00	\$ 350.00	\$ 175.00	\$ 175.00	n/a	n/a	n/a	Current Monthly Amount
\$ 195.00	\$ 195.00	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00	n/a	n/a	n/a	Current Monthly Amount
4,026	162	2,296	-	27	300	653	81	-	486	485	-	293	Number in Group 12/31/2021
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Include Group
\$ -	\$ -	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00				Flat Dollar Monthly Lifetime Benefit (per person) Pre-65
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00				Flat Dollar Monthly Lifetime Benefit (per person) Post-65
100%	100%	50%	50%	50%	50%	50%	50%	50%	50%				Utilization Percentage Pre-65 (Applies to Flat Dollar Only)
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%				Utilization Percentage Post-65 (Applies to Flat Dollar Only)
\$ -	\$ -	\$ 92.50	\$ 105.29	\$ 117.50	\$ 200.00	\$ 92.50	\$ 180.00	\$ 92.50	\$ 92.50	\$ 62.50	\$ 62.50	\$ 62.50	Flat \$ Pre 65 benefit * Utilization %
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00	\$ 62.50	\$ 125.00	\$ 125.00	Flat \$ Post 65 benefit * Utilization %
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	Annual increase in Flat Dollar Benefit

\$253,900,999	Original Face Value of Bonds at 12/10/2014
\$5,000,000	Face Value of Bond (A) at Val Date
\$0	Face Value of Bond (B) at Val Date
55%	MV of Bond (used to calculate UAAL)
\$233,837,048	Investable Assets*
Never	Year of Insolvency
Never	Year Monetization/Cash is Needed
4.00%	Average Yield

158,108,446	Present Value of Benefits
17,010,906	Present Value of Expenses
175,119,352	Total
236,587,048	Valuation Assets (Immediate Monetization)^
(61,467,696)	Unfunded Actuarial Accrued Liability (UAAL)
445,524	Present Value of Future Contributions
(61,913,220)	Asset Deficit/(Surplus)
135.4%	Funded %

Notes:

* Excludes accrued interest receivable as it is already accounted for in the cash flow projection.

Bond coupon payment does not accrue additional interest during the year in which it is paid.

^ Valuation assets include monetized valuation of bond and indicated monetization rate plus cash.

Ad-Hoc					Trust					Interest					Dec. 31 Assets	% Contracts Remaining
Year	Ad-Hoc Prem. Increase	Investment Return	Optional Bond Sale	Optional % of Face	Face Value of Bonds BOY	Principal Repayment	Jan 1. Assets*	Benefit Payments	Expenses	Grant / (Due City)	Bond Coupon	Invested Assets	Ben./ Expen./ Grant/ Bond#	Total		
2022	N/A	4.00%	\$ -	0.00%	\$ 5,000,000	\$ -	\$ 233,837,048	\$ (13,558,418)	\$ (917,527)	\$ 43,750	\$ 200,000	\$ 9,353,482	\$ (288,644)	\$ 9,264,838	\$ 228,669,691	98%
2023	0.00%	4.00%	-	-	5,000,000	-	228,669,691	(14,088,849)	(917,859)	43,750	200,000	9,146,788	(299,259)	9,047,528	222,754,262	95%
2024	0.00%	4.00%	-	-	5,000,000	-	222,754,262	(13,637,524)	(917,094)	43,750	200,000	8,910,170	(290,217)	8,819,953	217,063,347	91%
2025	0.00%	4.00%	-	-	4,971,590	28,410	217,091,757	(13,171,535)	(915,186)	43,750	198,864	8,683,670	(280,859)	8,601,674	211,650,461	88%
2026	0.00%	4.00%	-	-	4,944,995	26,595	211,677,055	(12,681,080)	(912,083)	43,750	197,800	8,467,082	(270,988)	8,393,894	206,521,537	84%
2027	0.00%	4.00%	-	-	4,919,919	25,077	206,546,614	(12,170,264)	(907,734)	43,750	196,797	8,261,865	(260,685)	8,197,976	201,710,342	80%
2028	0.00%	4.00%	-	-	4,896,614	23,304	201,733,647	(11,667,751)	(902,092)	43,750	195,865	8,069,346	(250,522)	8,014,689	197,222,243	77%
2029	0.00%	4.00%	-	-	4,875,310	21,304	197,243,547	(11,159,257)	(895,115)	43,750	195,012	7,889,742	(240,212)	7,844,542	193,077,467	73%
2030	0.00%	4.00%	-	-	4,856,263	19,047	193,096,514	(10,649,867)	(886,776)	43,750	194,251	7,723,861	(229,858)	7,688,253	189,291,874	69%
2031	0.00%	4.00%	-	-	4,574,949	281,314	189,573,187	(10,124,988)	(877,065)	43,750	182,998	7,582,928	(219,166)	7,546,759	186,161,644	65%
2032	0.00%	4.00%	-	-	4,291,024	283,925	186,445,570	(9,597,575)	(865,995)	43,750	171,641	7,457,823	(208,396)	7,421,067	183,446,817	62%
2033	0.00%	4.00%	-	-	3,995,781	295,243	183,742,060	(9,046,411)	(853,608)	43,750	159,831	7,349,682	(197,125)	7,312,388	181,198,180	58%
2034	0.00%	4.00%	-	-	3,632,528	363,253	181,561,432	(8,495,838)	(839,975)	43,750	145,301	7,262,457	(185,841)	7,221,917	179,491,287	54%
2035	0.00%	4.00%	-	-	3,269,275	363,253	179,854,540	(7,949,032)	(825,205)	-	196,157	7,194,182	(175,485)	7,214,853	178,295,156	51%
2036	0.00%	4.00%	-	-	2,906,022	363,253	178,658,409	(7,403,972)	(809,438)	-	174,361	7,146,336	(164,268)	7,156,429	177,601,428	47%
2037	0.00%	4.00%	-	-	2,542,770	363,253	177,964,681	(6,866,796)	(792,849)	-	152,566	7,118,587	(153,193)	7,117,961	177,422,996	43%
2042	0.00%	4.00%	-	-	726,505	363,253	182,297,750	(4,463,611)	(705,755)	-	43,590	7,291,910	(103,387)	7,232,113	184,360,497	28%
2047	0.00%	4.00%	-	-	-	-	198,392,936	(2,674,430)	(635,485)	-	-	7,935,717	(66,198)	7,869,519	202,952,540	16%
2052	0.00%	4.00%	-	-	-	-	225,894,156	(1,505,659)	(603,611)	-	-	9,035,766	(42,185)	8,993,581	232,778,466	8%
2057	0.00%	4.00%	-	-	-	-	264,854,645	(792,881)	(611,970)	-	-	10,594,186	(28,097)	10,566,089	274,015,883	4%
2062	0.00%	4.00%	-	-	-	-	315,380,554	(379,656)	(654,093)	-	-	12,615,222	(20,675)	12,594,547	326,941,351	2%
2067	0.00%	4.00%	-	-	-	-	378,388,919	(160,593)	(725,197)	-	-	15,135,557	(17,716)	15,117,841	392,620,970	1%



City of Detroit Police and Fire Retiree Health Care Trust

Scenario 1 (After Demographic Assumption Changes)

Current Participants										Potential Future Participants			Group Description
MA PPO	MA HMO	Opt-Out HRA	Retiree HRA						Spouse HRA (Non-Med Elig)	Spouse Not Receiving	Actively Waived	No Enrollment Election	
			Below FPL	Income Level	Non-Med Duty Dis	Non-Med Elig	Over 65 Non-Med Elig	Over 65 Unsub					
\$ 180.00	\$ 180.00	\$ 175.00	\$ 200.58	\$ 225.00	\$ 400.00	\$ 175.00	\$ 350.00	\$ 175.00	\$ 175.00	n/a	n/a	n/a	2022 Monthly Amount
\$ 195.00	\$ 195.00	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00	n/a	n/a	n/a	Current Monthly Amount
4,026	162	2,296	-	27	300	653	81	-	486	485	-	293	Number in Group 12/31/2021
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Include Group
\$ -	\$ -	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00				Flat Dollar Monthly Lifetime Benefit (per person) Pre-65
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00				Flat Dollar Monthly Lifetime Benefit (per person) Post-65
100%	100%	50%	50%	50%	50%	50%	50%	50%	50%				Utilization Percentage Pre-65 (Applies to Flat Dollar Only)
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%				Utilization Percentage Post-65 (Applies to Flat Dollar Only)
\$ -	\$ -	\$ 92.50	\$ 105.29	\$ 117.50	\$ 200.00	\$ 92.50	\$ 180.00	\$ 92.50	\$ 92.50	\$ 62.50	\$ 92.50	\$ 62.50	Flat \$ Pre 65 benefit * Utilization %
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00	\$ 62.50	\$ 195.00	\$ 125.00	Flat \$ Post 65 benefit * Utilization %
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	Annual increase in Flat Dollar Benefit

\$253,900,999	Original Face Value of Bonds at 12/10/2014
\$5,000,000	Face Value of Bond (A) at Val Date
\$0	Face Value of Bond (B) at Val Date
55%	MV of Bond (used to calculate UAAL)
\$233,837,048	Investable Assets*
Never	Year of Insolvency
Never	Year Monetization/Cash is Needed
4.00%	Average Yield

156,032,175	Present Value of Benefits
17,010,732	Present Value of Expenses
173,042,907	Total
236,587,048	Valuation Assets (Immediate Monetization)^
(63,544,141)	Unfunded Actuarial Accrued Liability (UAAL)
445,524	Present Value of Future Contributions
(63,989,665)	Asset Deficit/(Surplus)
137.0%	Funded %

Notes:

- * Excludes accrued interest receivable as it is already accounted for in the cash flow projection.
- # Bond coupon payment does not accrue additional interest during the year in which it is paid.
- ^ Valuation assets include monetized valuation of bond and indicated monetization rate plus cash.

	Ad-Hoc			Trust								Interest						
	Ad-Hoc Prem.	Investment	Optional	Optional	Face Value of	Principal	Jan 1.	Benefit		Grant /	Bond	Invested	Ben./ Expen./		Dec. 31	% Contracts		
Year	Increase	Return	Bond Sale	% of Face	Bonds BOY	Repayment	Assets*	Payments	Expenses	(Due City)	Coupon	Assets	Grant/ Bond#	Total	Assets	Remaining		
2022	N/A	4.00%	\$ -	0.00%	\$ 5,000,000	\$ -	\$ 233,837,048	\$ (13,532,194)	\$ (916,359)	\$ 43,750	\$ 200,000	\$ 9,353,482	\$ (288,096)	\$ 9,265,386	\$ 228,697,631	98%		
2023	0.00%	4.00%	-	-	5,000,000	-	228,697,631	(14,008,591)	(914,465)	43,750	200,000	9,147,905	(297,586)	9,050,319	222,868,643	94%		
2024	0.00%	4.00%	-	-	5,000,000	-	222,868,643	(13,516,899)	(911,855)	43,750	200,000	8,914,746	(287,700)	8,827,046	217,310,684	90%		
2025	0.00%	4.00%	-	-	4,971,590	28,410	217,339,094	(13,020,220)	(908,437)	43,750	198,864	8,693,564	(277,698)	8,614,729	212,068,917	87%		
2026	0.00%	4.00%	-	-	4,944,995	26,595	212,095,511	(12,507,189)	(904,110)	43,750	197,800	8,483,820	(267,351)	8,414,269	207,142,231	83%		
2027	0.00%	4.00%	-	-	4,919,919	25,077	207,167,308	(11,980,396)	(898,777)	43,750	196,797	8,286,692	(256,708)	8,226,781	202,558,665	79%		
2028	0.00%	4.00%	-	-	4,896,614	23,304	202,581,970	(11,467,369)	(892,343)	43,750	195,865	8,103,279	(246,319)	8,052,824	198,318,832	75%		
2029	0.00%	4.00%	-	-	4,875,310	21,304	198,340,135	(10,952,525)	(884,726)	43,750	195,012	7,933,605	(235,870)	7,892,748	194,439,382	72%		
2030	0.00%	4.00%	-	-	4,856,263	19,047	194,458,429	(10,440,026)	(875,864)	43,750	194,251	7,778,337	(225,443)	7,747,145	190,933,435	68%		
2031	0.00%	4.00%	-	-	4,574,949	281,314	191,214,748	(9,914,747)	(865,722)	43,750	182,998	7,648,590	(214,734)	7,616,854	188,094,882	64%		
2032	0.00%	4.00%	-	-	4,291,024	283,925	188,378,807	(9,389,039)	(854,299)	43,750	171,641	7,535,152	(203,992)	7,502,801	185,682,021	60%		
2033	0.00%	4.00%	-	-	3,995,781	295,243	185,977,264	(8,841,184)	(841,630)	43,750	159,831	7,439,091	(192,781)	7,406,141	183,744,340	57%		
2034	0.00%	4.00%	-	-	3,632,528	363,253	184,107,593	(8,295,623)	(827,792)	43,750	145,301	7,364,304	(181,593)	7,328,012	182,355,939	53%		
2035	0.00%	4.00%	-	-	3,269,275	363,253	182,719,192	(7,755,662)	(812,905)	-	196,157	7,308,768	(171,371)	7,333,553	181,484,178	49%		
2036	0.00%	4.00%	-	-	2,906,022	363,253	181,847,431	(7,219,244)	(797,124)	-	174,361	7,273,897	(160,327)	7,287,931	181,118,993	46%		
2041	0.00%	4.00%	-	-	1,089,758	363,253	185,221,192	(4,783,325)	(712,631)	-	65,386	7,408,848	(109,919)	7,364,314	187,089,550	30%		
2046	0.00%	4.00%	-	-	-	-	200,672,780	(2,960,382)	(642,637)	-	-	8,026,911	(72,060)	7,954,851	205,024,612	18%		
2051	0.00%	4.00%	-	-	-	-	227,143,977	(1,746,194)	(609,269)	-	-	9,085,759	(47,109)	9,038,650	233,827,164	10%		
2056	0.00%	4.00%	-	-	-	-	265,140,477	(975,163)	(613,980)	-	-	10,605,619	(31,783)	10,573,836	274,125,170	5%		
2061	0.00%	4.00%	-	-	-	-	314,854,859	(499,598)	(650,070)	-	-	12,594,194	(22,993)	12,571,201	326,276,392	3%		
2066	0.00%	4.00%	-	-	-	-	377,242,728	(227,910)	(713,867)	-	-	15,089,709	(18,836)	15,070,874	391,371,824	1%		



City of Detroit Police and Fire Retiree Health Care Trust

Scenario 2 Baseline (Current Valuation Assumptions)

Current Participants										Potential Future Participants			Group Description
MA PPO	MA HMO	Opt-Out HRA	Retiree HRA						Spouse HRA (Non-Med Elig)	Spouse Not Receiving	Actively Waived	No Enrollment Election	
			Below FPL	Income Level	Non-Med Duty Dis	Non-Med Elig	Over 65 Non-Med Elig	Over 65 Unsub					
\$ 180.00	\$ 180.00	\$ 175.00	\$ 200.58	\$ 225.00	\$ 400.00	\$ 175.00	\$ 350.00	\$ 175.00	\$ 175.00	n/a	n/a	n/a	2022 Monthly Amount
\$ 195.00	\$ 195.00	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00	n/a	n/a	n/a	Current Monthly Amount
4,026	162	2,296	-	27	300	653	81	-	486	485	-	293	Number in Group 12/31/2021
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Include Group
\$ -	\$ -	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00				Flat Dollar Monthly Lifetime Benefit (per person) Pre-65
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00				Flat Dollar Monthly Lifetime Benefit (per person) Post-65
100%	100%	50%	50%	50%	50%	50%	50%	50%	50%				Utilization Percentage Pre-65 (Applies to Flat Dollar Only)
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%				Utilization Percentage Post-65 (Applies to Flat Dollar Only)
\$ -	\$ -	\$ 92.50	\$ 105.29	\$ 117.50	\$ 200.00	\$ 92.50	\$ 180.00	\$ 92.50	\$ 92.50	\$ 62.50	\$ 92.50	\$ 62.50	Flat \$ Pre 65 benefit * Utilization %
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00	\$ 62.50	\$ 195.00	\$ 125.00	Flat \$ Post 65 benefit * Utilization %
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	Annual increase in Flat Dollar Benefit

\$253,900,999	Original Face Value of Bonds at 12/10/2014
\$5,000,000	Face Value of Bond (A) at Val Date
\$0	Face Value of Bond (B) at Val Date
80%	MV of Bond (used to calculate UAAL)
\$233,837,048	Investable Assets*
Never	Year of Insolvency
Never	Year Monetization/Cash is Needed
4.00%	Average Yield

156,032,175	Present Value of Benefits
17,010,732	Present Value of Expenses
173,042,907	Total
237,837,048	Valuation Assets (Immediate Monetization)^
(64,794,141)	Unfunded Actuarial Accrued Liability (UAAL)
445,524	Present Value of Future Contributions
(65,239,665)	Asset Deficit/(Surplus)
137.7%	Funded %

Notes:

- * Excludes accrued interest receivable as it is already accounted for in the cash flow projection.
- # Bond coupon payment does not accrue additional interest during the year in which it is paid.
- ^ Valuation assets include monetized valuation of bond and indicated monetization rate plus cash.

Year	Ad-Hoc Prem. Increase	Investment Return	Optional Bond Sale	Optional % of Face	Face Value of Bonds BOY	Principal Repayment	Jan 1. Assets*	Trust Benefit		Grant / (Due City)	Interest				Dec. 31 Assets	% Contracts Remaining
								Payments	Expenses		Bond Coupon	Invested Assets	Ben./ Expen./ Grant/ Bond#	Total		
2022	N/A	4.00%	\$ -	0.00%	\$ 5,000,000	\$ -	\$ 233,837,048	\$ (13,532,194)	\$ (916,359)	\$ 43,750	\$ 200,000	\$ 9,353,482	\$ (288,096)	\$ 9,265,386	\$ 228,697,631	98%
2023	0.00%	4.00%	-	-	5,000,000	-	228,697,631	(14,008,591)	(914,465)	43,750	200,000	9,147,905	(297,586)	9,050,319	222,868,643	94%
2024	0.00%	4.00%	-	-	5,000,000	-	222,868,643	(13,516,899)	(911,855)	43,750	200,000	8,914,746	(287,700)	8,827,046	217,310,684	90%
2025	0.00%	4.00%	-	-	4,971,590	28,410	217,339,094	(13,020,220)	(908,437)	43,750	198,864	8,693,564	(277,698)	8,614,729	212,068,917	87%
2026	0.00%	4.00%	-	-	4,944,995	26,595	212,095,511	(12,507,189)	(904,110)	43,750	197,800	8,483,820	(267,351)	8,414,269	207,142,231	83%
2027	0.00%	4.00%	-	-	4,919,919	25,077	207,167,308	(11,980,396)	(898,777)	43,750	196,797	8,286,692	(256,708)	8,226,781	202,558,665	79%
2028	0.00%	4.00%	-	-	4,896,614	23,304	202,581,970	(11,467,369)	(892,343)	43,750	195,865	8,103,279	(246,319)	8,052,824	198,318,832	75%
2029	0.00%	4.00%	-	-	4,875,310	21,304	198,340,135	(10,952,525)	(884,726)	43,750	195,012	7,933,605	(235,870)	7,892,748	194,439,382	72%
2030	0.00%	4.00%	-	-	4,856,263	19,047	194,458,429	(10,440,026)	(875,864)	43,750	194,251	7,778,337	(225,443)	7,747,145	190,933,435	68%
2031	0.00%	4.00%	-	-	4,574,949	281,314	191,214,748	(9,914,747)	(865,722)	43,750	182,998	7,648,590	(214,734)	7,616,854	188,094,882	64%
2032	0.00%	4.00%	-	-	4,291,024	283,925	188,378,807	(9,389,039)	(854,299)	43,750	171,641	7,535,152	(203,992)	7,502,801	185,682,021	60%
2033	0.00%	4.00%	-	-	3,995,781	295,243	185,977,264	(8,841,184)	(841,630)	43,750	159,831	7,439,091	(192,781)	7,406,141	183,744,340	57%
2034	0.00%	4.00%	-	-	3,632,528	363,253	184,107,593	(8,295,623)	(827,792)	43,750	145,301	7,364,304	(181,593)	7,328,012	182,355,939	53%
2035	0.00%	4.00%	-	-	3,269,275	363,253	182,719,192	(7,755,662)	(812,905)	-	196,157	7,308,768	(171,371)	7,333,553	181,484,178	49%
2036	0.00%	4.00%	-	-	2,906,022	363,253	181,847,431	(7,219,244)	(797,124)	-	174,361	7,273,897	(160,327)	7,287,931	181,118,993	46%
2041	0.00%	4.00%	-	-	1,089,758	363,253	185,221,192	(4,783,325)	(712,631)	-	65,386	7,408,848	(109,919)	7,364,314	187,089,550	30%
2046	0.00%	4.00%	-	-	-	-	200,672,780	(2,960,382)	(642,637)	-	-	8,026,911	(72,060)	7,954,851	205,024,612	18%
2051	0.00%	4.00%	-	-	-	-	227,143,977	(1,746,194)	(609,269)	-	-	9,085,759	(47,109)	9,038,650	233,827,164	10%
2056	0.00%	4.00%	-	-	-	-	265,140,477	(975,163)	(613,980)	-	-	10,605,619	(31,783)	10,573,836	274,125,170	5%
2061	0.00%	4.00%	-	-	-	-	314,854,859	(499,598)	(650,070)	-	-	12,594,194	(22,993)	12,571,201	326,276,392	3%
2066	0.00%	4.00%	-	-	-	-	377,242,728	(227,910)	(713,867)	-	-	15,089,709	(18,836)	15,070,874	391,371,824	1%



City of Detroit Police and Fire Retiree Health Care Trust

Scenario 3 (5.0% Return with 55% Monetization)

Current Participants										Potential Future Participants			Group Description
MA PPO	MA HMO	Opt-Out HRA	Retiree HRA						Spouse HRA (Non-Med Elig)	Spouse Not Receiving	Actively Waived	No Enrollment Election	
			Below FPL	Income Level	Non-Med Duty Dis	Non-Med Elig	Over 65 Non-Med Elig	Over 65 Unsub					
\$ 180.00	\$ 180.00	\$ 175.00	\$ 200.58	\$ 225.00	\$ 400.00	\$ 175.00	\$ 350.00	\$ 175.00	\$ 175.00	n/a	n/a	n/a	2022 Monthly Amount
\$ 195.00	\$ 195.00	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00	n/a	n/a	n/a	Current Monthly Amount
4,026	162	2,296	-	27	300	653	81	-	486	485	-	293	Number in Group 12/31/2021
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Include Group
\$ -	\$ -	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00				Flat Dollar Monthly Lifetime Benefit (per person) Pre-65
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00				Flat Dollar Monthly Lifetime Benefit (per person) Post-65
100%	100%	50%	50%	50%	50%	50%	50%	50%	50%				Utilization Percentage Pre-65 (Applies to Flat Dollar Only)
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%				Utilization Percentage Post-65 (Applies to Flat Dollar Only)
\$ -	\$ -	\$ 92.50	\$ 105.29	\$ 117.50	\$ 200.00	\$ 92.50	\$ 180.00	\$ 92.50	\$ 92.50	\$ 62.50	\$ 92.50	\$ 62.50	Flat \$ Pre 65 benefit * Utilization %
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00	\$ 62.50	\$ 195.00	\$ 125.00	Flat \$ Post 65 benefit * Utilization %
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	Annual increase in Flat Dollar Benefit

\$253,900,999	Original Face Value of Bonds at 12/10/2014
\$5,000,000	Face Value of Bond (A) at Val Date
\$0	Face Value of Bond (B) at Val Date
55%	MV of Bond (used to calculate UAAL)
\$233,837,048	Investable Assets*
Never	Year of Insolvency
Never	Year Monetization/Cash is Needed
5.00%	Average Yield

143,680,943	Present Value of Benefits
14,771,967	Present Value of Expenses
158,452,910	Total
236,587,048	Valuation Assets (Immediate Monetization)^
(78,134,138)	Unfunded Actuarial Accrued Liability (UAAL)
421,118	Present Value of Future Contributions
(78,555,256)	Asset Deficit/(Surplus)
149.6%	Funded %

Notes:

- * Excludes accrued interest receivable as it is already accounted for in the cash flow projection.
- # Bond coupon payment does not accrue additional interest during the year in which it is paid.
- ^ Valuation

Year	Ad-Hoc Prem. Increase	Investment Return	Optional Bond Sale	Optional % of Face	Face Value of Bonds BOY	Principal Repayment	Jan 1. Assets*	Trust Benefit		Grant / (Due City)	Interest				Dec. 31 Assets	% Contracts Remaining
								Payments	Expenses		Bond Coupon	Invested Assets	Ben./ Expen./ Grant/ Bond#	Total		
2022	N/A	5.00%	\$ -	0.00%	\$ 5,000,000	\$ -	\$ 233,837,048	\$ (13,532,194)	\$ (916,359)	\$ 43,750	\$ 200,000	\$ 11,691,852	\$ (360,120)	\$ 11,531,732	\$ 230,963,977	98%
2023	0.00%	5.00%	-	-	5,000,000	-	230,963,977	(14,008,591)	(914,465)	43,750	200,000	11,548,199	(371,983)	11,376,216	227,460,887	94%
2024	0.00%	5.00%	-	-	5,000,000	-	227,460,887	(13,516,899)	(911,855)	43,750	200,000	11,373,044	(359,625)	11,213,419	224,289,301	90%
2025	0.00%	5.00%	-	-	4,971,590	28,410	224,317,711	(13,020,220)	(908,437)	43,750	198,864	11,215,886	(347,123)	11,067,627	221,500,431	87%
2026	0.00%	5.00%	-	-	4,944,995	26,595	221,527,026	(12,507,189)	(904,110)	43,750	197,800	11,076,351	(334,189)	10,939,962	219,099,439	83%
2027	0.00%	5.00%	-	-	4,919,919	25,077	219,124,516	(11,980,396)	(898,777)	43,750	196,797	10,956,226	(320,886)	10,832,137	217,121,229	79%
2028	0.00%	5.00%	-	-	4,896,614	23,304	217,144,534	(11,467,369)	(892,343)	43,750	195,865	10,857,227	(307,899)	10,745,192	215,573,763	75%
2029	0.00%	5.00%	-	-	4,875,310	21,304	215,595,067	(10,952,525)	(884,726)	43,750	195,012	10,779,753	(294,838)	10,679,928	214,481,494	72%
2030	0.00%	5.00%	-	-	4,856,263	19,047	214,500,542	(10,440,026)	(875,864)	43,750	194,251	10,725,027	(281,803)	10,637,474	213,865,876	68%
2031	0.00%	5.00%	-	-	4,574,949	281,314	214,147,190	(9,914,747)	(865,722)	43,750	182,998	10,707,359	(268,418)	10,621,939	214,032,409	64%
2032	0.00%	5.00%	-	-	4,291,024	283,925	214,316,335	(9,389,039)	(854,299)	43,750	171,641	10,715,817	(254,990)	10,632,468	214,749,215	60%
2033	0.00%	5.00%	-	-	3,995,781	295,243	215,044,458	(8,841,184)	(841,630)	43,750	159,831	10,752,223	(240,977)	10,671,078	216,076,471	57%
2034	0.00%	5.00%	-	-	3,632,528	363,253	216,439,724	(8,295,623)	(827,792)	43,750	145,301	10,821,986	(226,992)	10,740,296	218,100,354	53%
2035	0.00%	5.00%	-	-	3,269,275	363,253	218,463,607	(7,755,662)	(812,905)	-	196,157	10,923,180	(214,214)	10,905,123	220,800,163	49%
2036	0.00%	5.00%	-	-	2,906,022	363,253	221,163,416	(7,219,244)	(797,124)	-	174,361	11,058,171	(200,409)	11,032,123	224,179,170	46%
2041	0.00%	5.00%	-	-	1,089,758	363,253	245,268,672	(4,783,325)	(712,631)	-	65,386	12,263,434	(137,399)	12,191,420	251,964,136	30%
2046	0.00%	5.00%	-	-	-	-	287,697,116	(2,960,382)	(642,637)	-	-	14,384,856	(90,075)	14,294,780	298,388,877	18%
2051	0.00%	5.00%	-	-	-	-	349,720,895	(1,746,194)	(609,269)	-	-	17,486,045	(58,887)	17,427,158	364,792,591	10%
2056	0.00%	5.00%	-	-	-	-	434,827,572	(975,163)	(613,980)	-	-	21,741,379	(39,729)	21,701,650	454,940,079	5%
2061	0.00%	5.00%	-	-	-	-	547,028,603	(499,598)	(650,070)	-	-	27,351,430	(28,742)	27,322,688	573,201,623	3%
2066	0.00%	5.00%	-	-	-	-	692,184,531	(227,910)	(713,867)	-	-	34,609,227	(23,544)	34,585,682	725,828,436	1%



City of Detroit Police and Fire Retiree Health Care Trust

Scenario 4 (5.0% Return with 80% Monetization)

Current Participants										Potential Future Participants			Group Description
MA PPO	MA HMO	Opt-Out HRA	Retiree HRA						Spouse HRA (Non-Med Elig)	Spouse Not Receiving	Actively Waived	No Enrollment Election	
			Below FPL	Income Level	Non-Med Duty Dis	Non-Med Elig	Over 65 Non-Med Elig	Over 65 Unsub					
\$ 180.00	\$ 180.00	\$ 175.00	\$ 200.58	\$ 225.00	\$ 400.00	\$ 175.00	\$ 350.00	\$ 175.00	\$ 175.00	n/a	n/a	n/a	2022 Monthly Amount
\$ 195.00	\$ 195.00	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00	n/a	n/a	n/a	Current Monthly Amount
4,026	162	2,296	-	27	300	653	81	-	486	485	-	293	Number in Group 12/31/2021
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Include Group
\$ -	\$ -	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00				Flat Dollar Monthly Lifetime Benefit (per person) Pre-65
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00				Flat Dollar Monthly Lifetime Benefit (per person) Post-65
100%	100%	50%	50%	50%	50%	50%	50%	50%	50%				Utilization Percentage Pre-65 (Applies to Flat Dollar Only)
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%				Utilization Percentage Post-65 (Applies to Flat Dollar Only)
\$ -	\$ -	\$ 92.50	\$ 105.29	\$ 117.50	\$ 200.00	\$ 92.50	\$ 180.00	\$ 92.50	\$ 92.50	\$ 62.50	\$ 92.50	\$ 62.50	Flat \$ Pre 65 benefit * Utilization %
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00	\$ 62.50	\$ 195.00	\$ 125.00	Flat \$ Post 65 benefit * Utilization %
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	Annual increase in Flat Dollar Benefit

\$253,900,999	Original Face Value of Bonds at 12/10/2014
\$5,000,000	Face Value of Bond (A) at Val Date
\$0	Face Value of Bond (B) at Val Date
80%	MV of Bond (used to calculate UAAL)
\$233,837,048	Investable Assets*
Never	Year of Insolvency
Never	Year Monetization/Cash is Needed
5.00%	Average Yield

143,680,943	Present Value of Benefits
14,771,967	Present Value of Expenses
158,452,910	Total
237,837,048	Valuation Assets (Immediate Monetization)^
(79,384,138)	Unfunded Actuarial Accrued Liability (UAAL)
421,118	Present Value of Future Contributions
(79,805,256)	Asset Deficit/(Surplus)
150.4%	Funded %

Notes:

- * Excludes accrued interest receivable as it is already accounted for in the cash flow projection.
- # Bond coupon payment does not accrue additional interest during the year in which it is paid.
- ^ Valuation

	Ad-Hoc				Trust				Interest					Dec. 31 Assets	% Contracts Remaining	
Year	Ad-Hoc Prem. Increase	Investment Return	Optional Bond Sale	Optional % of Face	Face Value of Bonds BOY	Principal Repayment	Jan 1. Assets*	Benefit Payments	Expenses	Grant / (Due City)	Bond Coupon	Invested Assets	Ben./ Expen./ Grant/ Bond#			Total
2022	N/A	5.00%	\$ -	0.00%	\$ 5,000,000	\$ -	\$ 233,837,048	\$ (13,532,194)	\$ (916,359)	\$ 43,750	\$ 200,000	\$ 11,691,852	\$ (360,120)	\$ 11,531,732	\$ 230,963,977	98%
2023	0.00%	5.00%	-	-	5,000,000	-	230,963,977	(14,008,591)	(914,465)	43,750	200,000	11,548,199	(371,983)	11,376,216	227,460,887	94%
2024	0.00%	5.00%	-	-	5,000,000	-	227,460,887	(13,516,899)	(911,855)	43,750	200,000	11,373,044	(359,625)	11,213,419	224,289,301	90%
2025	0.00%	5.00%	-	-	4,971,590	28,410	224,317,711	(13,020,220)	(908,437)	43,750	198,864	11,215,886	(347,123)	11,067,627	221,500,431	87%
2026	0.00%	5.00%	-	-	4,944,995	26,595	221,527,026	(12,507,189)	(904,110)	43,750	197,800	11,076,351	(334,189)	10,939,962	219,099,439	83%
2027	0.00%	5.00%	-	-	4,919,919	25,077	219,124,516	(11,980,396)	(898,777)	43,750	196,797	10,956,226	(320,886)	10,832,137	217,121,229	79%
2028	0.00%	5.00%	-	-	4,896,614	23,304	217,144,534	(11,467,369)	(892,343)	43,750	195,865	10,857,227	(307,899)	10,745,192	215,573,763	75%
2029	0.00%	5.00%	-	-	4,875,310	21,304	215,595,067	(10,952,525)	(884,726)	43,750	195,012	10,779,753	(294,838)	10,679,928	214,481,494	72%
2030	0.00%	5.00%	-	-	4,856,263	19,047	214,500,542	(10,440,026)	(875,864)	43,750	194,251	10,725,027	(281,803)	10,637,474	213,865,876	68%
2031	0.00%	5.00%	-	-	4,574,949	281,314	214,147,190	(9,914,747)	(865,722)	43,750	182,998	10,707,359	(268,418)	10,621,939	214,032,409	64%
2032	0.00%	5.00%	-	-	4,291,024	283,925	214,316,335	(9,389,039)	(854,299)	43,750	171,641	10,715,817	(254,990)	10,632,468	214,749,215	60%
2033	0.00%	5.00%	-	-	3,995,781	295,243	215,044,458	(8,841,184)	(841,630)	43,750	159,831	10,752,223	(240,977)	10,671,078	216,076,471	57%
2034	0.00%	5.00%	-	-	3,632,528	363,253	216,439,724	(8,295,623)	(827,792)	43,750	145,301	10,821,986	(226,992)	10,740,296	218,100,354	53%
2035	0.00%	5.00%	-	-	3,269,275	363,253	218,463,607	(7,755,662)	(812,905)	-	196,157	10,923,180	(214,214)	10,905,123	220,800,163	49%
2036	0.00%	5.00%	-	-	2,906,022	363,253	221,163,416	(7,219,244)	(797,124)	-	174,361	11,058,171	(200,409)	11,032,123	224,179,170	46%
2041	0.00%	5.00%	-	-	1,089,758	363,253	245,268,672	(4,783,325)	(712,631)	-	65,386	12,263,434	(137,399)	12,191,420	251,964,136	30%
2046	0.00%	5.00%	-	-	-	-	287,697,116	(2,960,382)	(642,637)	-	-	14,384,856	(90,075)	14,294,780	298,388,877	18%
2051	0.00%	5.00%	-	-	-	-	349,720,895	(1,746,194)	(609,269)	-	-	17,486,045	(58,887)	17,427,158	364,792,591	10%
2056	0.00%	5.00%	-	-	-	-	434,827,572	(975,163)	(613,980)	-	-	21,741,379	(39,729)	21,701,650	454,940,079	5%
2061	0.00%	5.00%	-	-	-	-	547,028,603	(499,598)	(650,070)	-	-	27,351,430	(28,742)	27,322,688	573,201,623	3%
2066	0.00%	5.00%	-	-	-	-	692,184,531	(227,910)	(713,867)	-	-	34,609,227	(23,544)	34,585,682	725,828,436	1%



City of Detroit Police and Fire Retiree Health Care Trust

Scenario 5 (3.0% Return with 55% Monetization)

Current Participants										Potential Future Participants			Group Description
MA PPO	MA HMO	Opt-Out HRA	Retiree HRA						Spouse HRA (Non-Med Elig)	Spouse Not Receiving	Actively Waived	No Enrollment Election	
			Below FPL	Income Level	Non-Med Duty Dis	Non-Med Elig	Over 65 Non-Med Elig	Over 65 Unsub					
\$ 180.00	\$ 180.00	\$ 175.00	\$ 200.58	\$ 225.00	\$ 400.00	\$ 175.00	\$ 350.00	\$ 175.00	\$ 175.00	n/a	n/a	n/a	2022 Monthly Amount
\$ 195.00	\$ 195.00	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00	n/a	n/a	n/a	Current Monthly Amount
4,026	162	2,296	-	27	300	653	81	-	486	485	-	293	Number in Group 12/31/2021
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Include Group
\$ -	\$ -	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00				Flat Dollar Monthly Lifetime Benefit (per person) Pre-65
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00				Flat Dollar Monthly Lifetime Benefit (per person) Post-65
100%	100%	50%	50%	50%	50%	50%	50%	50%	50%				Utilization Percentage Pre-65 (Applies to Flat Dollar Only)
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%				Utilization Percentage Post-65 (Applies to Flat Dollar Only)
\$ -	\$ -	\$ 92.50	\$ 105.29	\$ 117.50	\$ 200.00	\$ 92.50	\$ 180.00	\$ 92.50	\$ 92.50	\$ 62.50	\$ 92.50	\$ 62.50	Flat \$ Pre 65 benefit * Utilization %
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00	\$ 62.50	\$ 195.00	\$ 125.00	Flat \$ Post 65 benefit * Utilization %
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	Annual increase in Flat Dollar Benefit

\$253,900,999	Original Face Value of Bonds at 12/10/2014
\$5,000,000	Face Value of Bond (A) at Val Date
\$0	Face Value of Bond (B) at Val Date
55%	MV of Bond (used to calculate UAAL)
\$233,837,048	Investable Assets*
Never	Year of Insolvency
Never	Year Monetization/Cash is Needed
3.00%	Average Yield

170,498,572	Present Value of Benefits
19,911,844	Present Value of Expenses
190,410,416	Total
236,587,048	Valuation Assets (Immediate Monetization)^
(46,176,632)	Unfunded Actuarial Accrued Liability (UAAL)
472,207	Present Value of Future Contributions
(46,648,839)	Asset Deficit/(Surplus)
124.5%	Funded %

Notes:

- * Excludes accrued interest receivable as it is already accounted for in the cash flow projection.
- # Bond coupon payment does not accrue additional interest during the year in which it is paid.
- ^ Valuation

Year	Ad-Hoc				Trust				Interest						Dec. 31 Assets	% Contracts Remaining
	Ad-Hoc Prem. Increase	Investment Return	Optional Bond Sale	Optional % of Face	Face Value of Bonds BOY	Principal Repayment	Jan 1. Assets*	Benefit Payments	Expenses	Grant / (Due City)	Bond Coupon	Invested Assets	Ben./ Expen./ Grant/ Bond#	Total		
2022	N/A	3.00%	\$ -	0.00%	\$ 5,000,000	\$ -	\$ 233,837,048	\$ (13,532,194)	\$ (916,359)	\$ 43,750	\$ 200,000	\$ 7,015,111	\$ (216,072)	\$ 6,999,039	\$ 226,431,284	98%
2023	0.00%	3.00%	-	-	5,000,000	-	226,431,284	(14,008,591)	(914,465)	43,750	200,000	6,792,939	(223,190)	6,769,749	218,321,726	94%
2024	0.00%	3.00%	-	-	5,000,000	-	218,321,726	(13,516,899)	(911,855)	43,750	200,000	6,549,652	(215,775)	6,533,877	210,470,599	90%
2025	0.00%	3.00%	-	-	4,971,590	28,410	210,499,009	(13,020,220)	(908,437)	43,750	198,864	6,314,970	(208,274)	6,305,560	202,919,662	87%
2026	0.00%	3.00%	-	-	4,944,995	26,595	202,946,257	(12,507,189)	(904,110)	43,750	197,800	6,088,388	(200,513)	6,085,674	195,664,382	83%
2027	0.00%	3.00%	-	-	4,919,919	25,077	195,689,459	(11,980,396)	(898,777)	43,750	196,797	5,870,684	(192,531)	5,874,949	188,728,984	79%
2028	0.00%	3.00%	-	-	4,896,614	23,304	188,752,289	(11,467,369)	(892,343)	43,750	195,865	5,662,569	(184,739)	5,673,694	182,110,020	75%
2029	0.00%	3.00%	-	-	4,875,310	21,304	182,131,324	(10,952,525)	(884,726)	43,750	195,012	5,463,940	(176,903)	5,482,050	175,819,873	72%
2030	0.00%	3.00%	-	-	4,856,263	19,047	175,838,920	(10,440,026)	(875,864)	43,750	194,251	5,275,168	(169,082)	5,300,336	169,867,116	68%
2031	0.00%	3.00%	-	-	4,574,949	281,314	170,148,430	(9,914,747)	(865,722)	43,750	182,998	5,104,453	(161,051)	5,126,400	164,538,110	64%
2032	0.00%	3.00%	-	-	4,291,024	283,925	164,822,035	(9,389,039)	(854,299)	43,750	171,641	4,944,661	(152,994)	4,963,308	159,585,756	60%
2033	0.00%	3.00%	-	-	3,995,781	295,243	159,880,999	(8,841,184)	(841,630)	43,750	159,831	4,796,430	(144,586)	4,811,675	155,053,610	57%
2034	0.00%	3.00%	-	-	3,632,528	363,253	155,416,863	(8,295,623)	(827,792)	43,750	145,301	4,662,506	(136,195)	4,671,612	151,008,809	53%
2035	0.00%	3.00%	-	-	3,269,275	363,253	151,372,062	(7,755,662)	(812,905)	-	196,157	4,541,162	(128,529)	4,608,790	147,412,285	49%
2036	0.00%	3.00%	-	-	2,906,022	363,253	147,775,538	(7,219,244)	(797,124)	-	174,361	4,433,266	(120,246)	4,487,382	144,246,551	46%
2041	0.00%	3.00%	-	-	1,089,758	363,253	136,238,655	(4,783,325)	(712,631)	-	65,386	4,087,160	(82,439)	4,070,106	134,812,804	30%
2046	0.00%	3.00%	-	-	-	-	133,902,390	(2,960,382)	(642,637)	-	-	4,017,072	(54,045)	3,963,026	134,262,397	18%
2051	0.00%	3.00%	-	-	-	-	138,669,816	(1,746,194)	(609,269)	-	-	4,160,094	(35,332)	4,124,763	140,439,115	10%
2056	0.00%	3.00%	-	-	-	-	149,834,003	(975,163)	(613,980)	-	-	4,495,020	(23,837)	4,471,183	152,716,042	5%
2061	0.00%	3.00%	-	-	-	-	166,169,404	(499,598)	(650,070)	-	-	4,985,082	(17,245)	4,967,837	169,987,573	3%
2066	0.00%	3.00%	-	-	-	-	186,957,551	(227,910)	(713,867)	-	-	5,608,727	(14,127)	5,594,600	191,610,374	1%



City of Detroit Police and Fire Retiree Health Care Trust

Scenario 6 (3.0% Return with 80% Monetization)

Current Participants										Potential Future Participants			Group Description
MA PPO	MA HMO	Opt-Out HRA	Retiree HRA						Spouse HRA (Non-Med Elig)	Spouse Not Receiving	Actively Waived	No Enrollment Election	
			Below FPL	Income Level	Non-Med Duty Dis	Non-Med Elig	Over 65 Non-Med Elig	Over 65 Unsub					
\$ 180.00	\$ 180.00	\$ 175.00	\$ 200.58	\$ 225.00	\$ 400.00	\$ 175.00	\$ 350.00	\$ 175.00	\$ 175.00	n/a	n/a	n/a	2022 Monthly Amount
\$ 195.00	\$ 195.00	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00	n/a	n/a	n/a	Current Monthly Amount
4,026	162	2,296	-	27	300	653	81	-	486	485	-	293	Number in Group 12/31/2021
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Include Group
\$ -	\$ -	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00				Flat Dollar Monthly Lifetime Benefit (per person) Pre-65
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00				Flat Dollar Monthly Lifetime Benefit (per person) Post-65
100%	100%	50%	50%	50%	50%	50%	50%	50%	50%				Utilization Percentage Pre-65 (Applies to Flat Dollar Only)
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%				Utilization Percentage Post-65 (Applies to Flat Dollar Only)
\$ -	\$ -	\$ 92.50	\$ 105.29	\$ 117.50	\$ 200.00	\$ 92.50	\$ 180.00	\$ 92.50	\$ 92.50	\$ 62.50	\$ 92.50	\$ 62.50	Flat \$ Pre 65 benefit * Utilization %
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00	\$ 62.50	\$ 195.00	\$ 125.00	Flat \$ Post 65 benefit * Utilization %
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	Annual increase in Flat Dollar Benefit

\$253,900,999	Original Face Value of Bonds at 12/10/2014
\$5,000,000	Face Value of Bond (A) at Val Date
\$0	Face Value of Bond (B) at Val Date
80%	MV of Bond (used to calculate UAAL)
\$233,837,048	Investable Assets*
Never	Year of Insolvency
Never	Year Monetization/Cash is Needed
3.00%	Average Yield

170,498,572	Present Value of Benefits
19,911,844	Present Value of Expenses
190,410,416	Total
237,837,048	Valuation Assets (Immediate Monetization)^
(47,426,632)	Unfunded Actuarial Accrued Liability (UAAL)
472,207	Present Value of Future Contributions
(47,898,839)	Asset Deficit/(Surplus)
125.2%	Funded %

Notes:

- * Excludes accrued interest receivable as it is already accounted for in the cash flow projection.
- # Bond coupon payment does not accrue additional interest during the year in which it is paid.
- ^ Valuation

	Ad-Hoc				Trust				Interest					Dec. 31 Assets	% Contracts Remaining	
Year	Ad-Hoc Prem. Increase	Investment Return	Optional Bond Sale	Optional % of Face	Face Value of Bonds BOY	Principal Repayment	Jan 1. Assets*	Benefit Payments	Expenses	Grant / (Due City)	Bond Coupon	Invested Assets	Ben./ Expen./ Grant/ Bond#			Total
2022	N/A	3.00%	\$ -	0.00%	\$ 5,000,000	\$ -	\$ 233,837,048	\$ (13,532,194)	\$ (916,359)	\$ 43,750	\$ 200,000	\$ 7,015,111	\$ (216,072)	\$ 6,999,039	\$ 226,431,284	98%
2023	0.00%	3.00%	-	-	5,000,000	-	226,431,284	(14,008,591)	(914,465)	43,750	200,000	6,792,939	(223,190)	6,769,749	218,321,726	94%
2024	0.00%	3.00%	-	-	5,000,000	-	218,321,726	(13,516,899)	(911,855)	43,750	200,000	6,549,652	(215,775)	6,533,877	210,470,599	90%
2025	0.00%	3.00%	-	-	4,971,590	28,410	210,499,009	(13,020,220)	(908,437)	43,750	198,864	6,314,970	(208,274)	6,305,560	202,919,662	87%
2026	0.00%	3.00%	-	-	4,944,995	26,595	202,946,257	(12,507,189)	(904,110)	43,750	197,800	6,088,388	(200,513)	6,085,674	195,664,382	83%
2027	0.00%	3.00%	-	-	4,919,919	25,077	195,689,459	(11,980,396)	(898,777)	43,750	196,797	5,870,684	(192,531)	5,874,949	188,728,984	79%
2028	0.00%	3.00%	-	-	4,896,614	23,304	188,752,289	(11,467,369)	(892,343)	43,750	195,865	5,662,569	(184,739)	5,673,694	182,110,020	75%
2029	0.00%	3.00%	-	-	4,875,310	21,304	182,131,324	(10,952,525)	(884,726)	43,750	195,012	5,463,940	(176,903)	5,482,050	175,819,873	72%
2030	0.00%	3.00%	-	-	4,856,263	19,047	175,838,920	(10,440,026)	(875,864)	43,750	194,251	5,275,168	(169,082)	5,300,336	169,867,116	68%
2031	0.00%	3.00%	-	-	4,574,949	281,314	170,148,430	(9,914,747)	(865,722)	43,750	182,998	5,104,453	(161,051)	5,126,400	164,538,110	64%
2032	0.00%	3.00%	-	-	4,291,024	283,925	164,822,035	(9,389,039)	(854,299)	43,750	171,641	4,944,661	(152,994)	4,963,308	159,585,756	60%
2033	0.00%	3.00%	-	-	3,995,781	295,243	159,880,999	(8,841,184)	(841,630)	43,750	159,831	4,796,430	(144,586)	4,811,675	155,053,610	57%
2034	0.00%	3.00%	-	-	3,632,528	363,253	155,416,863	(8,295,623)	(827,792)	43,750	145,301	4,662,506	(136,195)	4,671,612	151,008,809	53%
2035	0.00%	3.00%	-	-	3,269,275	363,253	151,372,062	(7,755,662)	(812,905)	-	196,157	4,541,162	(128,529)	4,608,790	147,412,285	49%
2036	0.00%	3.00%	-	-	2,906,022	363,253	147,775,538	(7,219,244)	(797,124)	-	174,361	4,433,266	(120,246)	4,487,382	144,246,551	46%
2041	0.00%	3.00%	-	-	1,089,758	363,253	136,238,655	(4,783,325)	(712,631)	-	65,386	4,087,160	(82,439)	4,070,106	134,812,804	30%
2046	0.00%	3.00%	-	-	-	-	133,902,390	(2,960,382)	(642,637)	-	-	4,017,072	(54,045)	3,963,026	134,262,397	18%
2051	0.00%	3.00%	-	-	-	-	138,669,816	(1,746,194)	(609,269)	-	-	4,160,094	(35,332)	4,124,763	140,439,115	10%
2056	0.00%	3.00%	-	-	-	-	149,834,003	(975,163)	(613,980)	-	-	4,495,020	(23,837)	4,471,183	152,716,042	5%
2061	0.00%	3.00%	-	-	-	-	166,169,404	(499,598)	(650,070)	-	-	4,985,082	(17,245)	4,967,837	169,987,573	3%
2066	0.00%	3.00%	-	-	-	-	186,957,551	(227,910)	(713,867)	-	-	5,608,727	(14,127)	5,594,600	191,610,374	1%



City of Detroit Police and Fire Retiree Health Care Trust

Scenario 7 Alternate with 100% Utilization for Current Participants

(4.0% Return with 80% Monetization)

Current Participants										Potential Future Participants			Group Description
MA PPO	MA HMO	Opt-Out HRA	Retiree HRA						Spouse HRA (Non-Med Elig)	Spouse Not Receiving	Actively Waived	No Enrollment Election	
			Below FPL	Income Level	Non-Med Duty Dis	Non-Med Elig	Over 65 Non-Med Elig	Over 65 Unsub					
\$ 180.00	\$ 180.00	\$ 175.00	\$ 200.58	\$ 225.00	\$ 400.00	\$ 175.00	\$ 350.00	\$ 175.00	\$ 175.00	n/a	n/a	n/a	2022 Monthly Amount
\$ 195.00	\$ 195.00	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00	n/a	n/a	n/a	Current Monthly Amount
4,026	162	2,296	-	27	300	653	81	-	486	485	-	293	Number in Group 12/31/2021
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Include Group
\$ -	\$ -	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00				Flat Dollar Monthly Lifetime Benefit (per person) Pre-65
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00				Flat Dollar Monthly Lifetime Benefit (per person) Post-65
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%				Utilization Percentage Pre-65 (Applies to Flat Dollar Only)
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%				Utilization Percentage Post-65 (Applies to Flat Dollar Only)
\$ -	\$ -	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00	\$ 62.50	\$ 92.50	\$ 62.50	Flat \$ Pre 65 benefit * Utilization %
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00	\$ 62.50	\$ 195.00	\$ 125.00	Flat \$ Post 65 benefit * Utilization %
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	Annual increase in Flat Dollar Benefit

\$253,900,999	Original Face Value of Bonds at 12/10/2014
\$5,000,000	Face Value of Bond (A) at Val Date
\$0	Face Value of Bond (B) at Val Date
80%	MV of Bond (used to calculate UAAL)
\$233,837,048	Investable Assets*
Never	Year of Insolvency
Never	Year Monetization/Cash is Needed
4.00%	Average Yield

191,170,004	Present Value of Benefits
17,010,732	Present Value of Expenses
208,180,736	Total
237,837,048	Valuation Assets (Immediate Monetization)^
(29,656,312)	Unfunded Actuarial Accrued Liability (UAAL)
445,524	Present Value of Future Contributions
(30,101,836)	Asset Deficit/(Surplus)
114.5%	Funded %

Notes:

* Excludes accrued interest receivable as it is already accounted for in the cash flow projection.

Bond coupon payment does not accrue additional interest during the year in which it is paid.

^ Valuation

Year	Ad-Hoc			Optional Bond Sale	Optional % of Face	Face Value of Bonds BOY	Principal Repayment	Jan 1. Assets*	Trust		Grant / (Due City)	Interest				Dec. 31 Assets	% Contracts Remaining
	Ad-Hoc Prem. Increase	Investment Return							Benefit Payments	Expenses		Bond Coupon	Invested Assets	Ben./ Expen./ Grant/ Bond#	Total		
2022	N/A	4.00%	\$ -	-	0.00%	\$ 5,000,000	\$ -	\$ 233,837,048	\$ (13,532,194)	\$ (916,359)	\$ 43,750	\$ 200,000	\$ 9,353,482	\$ (288,096)	\$ 9,265,386	\$ 228,697,631	98%
2023	0.00%	4.00%	-	-	-	5,000,000	-	228,697,631	(18,218,726)	(914,465)	43,750	200,000	9,147,905	(381,789)	8,966,116	218,574,306	94%
2024	0.00%	4.00%	-	-	-	5,000,000	-	218,574,306	(17,488,643)	(911,855)	43,750	200,000	8,742,972	(367,135)	8,575,837	208,793,395	90%
2025	0.00%	4.00%	-	-	-	4,971,590	28,410	208,821,805	(16,770,320)	(908,437)	43,750	198,864	8,352,872	(352,700)	8,199,036	199,385,834	87%
2026	0.00%	4.00%	-	-	-	4,944,995	26,595	199,412,428	(16,041,512)	(904,110)	43,750	197,800	7,976,497	(338,037)	7,836,260	190,346,816	83%
2027	0.00%	4.00%	-	-	-	4,919,919	25,077	190,371,892	(15,314,005)	(898,777)	43,750	196,797	7,614,876	(323,381)	7,488,292	181,691,152	79%
2028	0.00%	4.00%	-	-	-	4,896,614	23,304	181,714,456	(14,597,178)	(892,343)	43,750	195,865	7,268,578	(308,915)	7,155,527	173,424,212	75%
2029	0.00%	4.00%	-	-	-	4,875,310	21,304	173,445,516	(13,868,253)	(884,726)	43,750	195,012	6,937,821	(294,185)	6,838,648	165,574,936	72%
2030	0.00%	4.00%	-	-	-	4,856,263	19,047	165,593,983	(13,140,664)	(875,864)	43,750	194,251	6,623,759	(279,456)	6,538,554	158,159,759	68%
2031	0.00%	4.00%	-	-	-	4,574,949	281,314	158,441,073	(12,417,385)	(865,722)	43,750	182,998	6,337,643	(264,787)	6,255,854	151,457,569	64%
2032	0.00%	4.00%	-	-	-	4,291,024	283,925	151,741,495	(11,702,322)	(854,299)	43,750	171,641	6,069,660	(250,257)	5,991,043	145,219,667	60%
2033	0.00%	4.00%	-	-	-	3,995,781	295,243	145,514,910	(10,974,181)	(841,630)	43,750	159,831	5,820,596	(235,441)	5,744,986	139,487,835	57%
2034	0.00%	4.00%	-	-	-	3,632,528	363,253	139,851,088	(10,249,617)	(827,792)	43,750	145,301	5,594,044	(220,673)	5,518,671	134,336,100	53%
2035	0.00%	4.00%	-	-	-	3,269,275	363,253	134,699,353	(9,522,367)	(812,905)	-	196,157	5,387,974	(206,705)	5,377,425	129,741,506	49%
2036	0.00%	4.00%	-	-	-	2,906,022	363,253	130,104,759	(8,806,041)	(797,124)	-	174,361	5,204,190	(192,063)	5,186,488	125,688,082	46%
2041	0.00%	4.00%	-	-	-	1,089,758	363,253	115,098,650	(5,650,323)	(712,631)	-	65,386	4,603,946	(127,259)	4,542,072	113,277,769	30%
2046	0.00%	4.00%	-	-	-	-	-	111,803,967	(3,283,804)	(642,637)	-	-	4,472,159	(78,529)	4,393,630	112,271,156	18%
2051	0.00%	4.00%	-	-	-	-	-	117,821,940	(1,838,259)	(609,269)	-	-	4,712,878	(48,951)	4,663,927	120,038,339	10%
2056	0.00%	4.00%	-	-	-	-	-	131,828,870	(991,091)	(613,980)	-	-	5,273,155	(32,101)	5,241,053	135,464,852	5%
2061	0.00%	4.00%	-	-	-	-	-	152,617,068	(500,856)	(650,070)	-	-	6,104,683	(23,019)	6,081,664	157,547,806	3%
2066	0.00%	4.00%	-	-	-	-	-	179,852,700	(227,949)	(713,867)	-	-	7,194,108	(18,836)	7,175,272	186,086,156	1%



City of Detroit Police and Fire Retiree Health Care Trust

Scenario 8 Alternate with 2% Annual Benefit Increases

(4.0% Return with 80% Monetization)

Current Participants										Potential Future Participants			Group Description
MA PPO	MA HMO	Opt-Out HRA	Retiree HRA						Spouse HRA (Non-Med Elig)	Spouse Not Receiving	Actively Waived	No Enrollment Election	
			Below FPL	Income Level	Non-Med Duty Dis	Non-Med Elig	Over 65 Non-Med Elig	Over 65 Unsub					
\$ 180.00	\$ 180.00	\$ 175.00	\$ 200.58	\$ 225.00	\$ 400.00	\$ 175.00	\$ 350.00	\$ 175.00	\$ 175.00	n/a	n/a	n/a	2022 Monthly Amount
\$ 195.00	\$ 195.00	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00	n/a	n/a	n/a	Current Monthly Amount
4,026	162	2,296	-	27	300	653	81	-	486	485	-	293	Number in Group 12/31/2021
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Include Group
\$ -	\$ -	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00				Flat Dollar Monthly Lifetime Benefit (per person) Pre-65
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00				Flat Dollar Monthly Lifetime Benefit (per person) Post-65
100%	100%	50%	50%	50%	50%	50%	50%	50%	50%				Utilization Percentage Pre-65 (Applies to Flat Dollar Only)
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%				Utilization Percentage Post-65 (Applies to Flat Dollar Only)
\$ -	\$ -	\$ 92.50	\$ 105.29	\$ 117.50	\$ 200.00	\$ 92.50	\$ 180.00	\$ 92.50	\$ 92.50	\$ 62.50	\$ 92.50	\$ 62.50	Flat \$ Pre 65 benefit * Utilization %
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00	\$ 62.50	\$ 195.00	\$ 125.00	Flat \$ Post 65 benefit * Utilization %
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	Annual increase in Flat Dollar Benefit

\$253,900,999	Original Face Value of Bonds at 12/10/2014
\$5,000,000	Face Value of Bond (A) at Val Date
\$0	Face Value of Bond (B) at Val Date
80%	MV of Bond (used to calculate UAAL)
\$233,837,048	Investable Assets*
Never	Year of Insolvency
Never	Year Monetization/Cash is Needed
4.00%	Average Yield

186,485,803	Present Value of Benefits
17,010,732	Present Value of Expenses
203,496,535	Total
237,837,048	Valuation Assets (Immediate Monetization)^
(34,340,513)	Unfunded Actuarial Accrued Liability (UAAL)
445,524	Present Value of Future Contributions
(34,786,037)	Asset Deficit/(Surplus)
117.1%	Funded %

Notes:

- * Excludes accrued interest receivable as it is already accounted for in the cash flow projection.
- # Bond coupon payment does not accrue additional interest during the year in which it is paid.
- ^ Valuation

Year	Ad-Hoc Prem. Increase	Ad-Hoc Investment Return	Optional Bond Sale	Optional % of Face	Face Value of Bonds BOY	Principal Repayment	Jan 1. Assets*	Trust Benefit		Grant / (Due City)	Interest				Dec. 31 Assets	% Contracts Remaining
								Benefit Payments	Expenses		Bond Coupon	Invested Assets	Ben./ Expen./ Grant/ Bond#	Total		
2022	N/A	4.00%	\$ -	0.00%	\$ 5,000,000	\$ -	\$ 233,837,048	\$ (13,532,194)	\$ (916,359)	\$ 43,750	\$ 200,000	\$ 9,353,482	\$ (288,096)	\$ 9,265,386	\$ 228,697,631	98%
2023	2.00%	4.00%	-	-	5,000,000	-	228,697,631	(14,288,763)	(914,465)	43,750	200,000	9,147,905	(303,190)	9,044,716	222,582,868	94%
2024	2.00%	4.00%	-	-	5,000,000	-	222,582,868	(14,062,982)	(911,855)	43,750	200,000	8,903,315	(298,622)	8,804,693	216,456,474	90%
2025	2.00%	4.00%	-	-	4,971,590	28,410	216,484,884	(13,817,162)	(908,437)	43,750	198,864	8,659,395	(293,637)	8,564,622	210,367,657	87%
2026	2.00%	4.00%	-	-	4,944,995	26,595	210,394,252	(13,538,183)	(904,110)	43,750	197,800	8,415,770	(287,971)	8,325,599	204,321,307	83%
2027	2.00%	4.00%	-	-	4,919,919	25,077	204,346,384	(13,227,325)	(898,777)	43,750	196,797	8,173,855	(281,647)	8,089,005	198,353,036	79%
2028	2.00%	4.00%	-	-	4,896,614	23,304	198,376,341	(12,914,120)	(892,343)	43,750	195,865	7,935,054	(275,254)	7,855,664	192,469,291	75%
2029	2.00%	4.00%	-	-	4,875,310	21,304	192,490,595	(12,581,009)	(884,726)	43,750	195,012	7,699,624	(268,440)	7,626,197	186,694,807	72%
2030	2.00%	4.00%	-	-	4,856,263	19,047	186,713,854	(12,232,154)	(875,864)	43,750	194,251	7,468,554	(261,285)	7,401,519	181,051,105	68%
2031	2.00%	4.00%	-	-	4,574,949	281,314	181,332,419	(11,849,041)	(865,722)	43,750	182,998	7,253,297	(253,420)	7,182,874	175,844,280	64%
2032	2.00%	4.00%	-	-	4,291,024	283,925	176,128,206	(11,445,186)	(854,299)	43,750	171,641	7,045,128	(245,115)	6,971,654	170,844,125	60%
2033	2.00%	4.00%	-	-	3,995,781	295,243	171,139,368	(10,992,901)	(841,630)	43,750	159,831	6,845,575	(235,816)	6,769,590	166,118,177	57%
2034	2.00%	4.00%	-	-	3,632,528	363,253	166,481,430	(10,520,856)	(827,792)	43,750	145,301	6,659,257	(226,098)	6,578,460	161,754,992	53%
2035	2.00%	4.00%	-	-	3,269,275	363,253	162,118,245	(10,032,776)	(812,905)	-	196,157	6,484,730	(216,914)	6,463,973	157,736,537	49%
2036	2.00%	4.00%	-	-	2,906,022	363,253	158,099,790	(9,525,640)	(797,124)	-	174,361	6,323,992	(206,455)	6,291,898	154,068,924	46%
2041	2.00%	4.00%	-	-	1,089,758	363,253	143,677,963	(6,968,402)	(712,631)	-	65,386	5,747,119	(153,621)	5,658,883	141,655,815	30%
2046	2.00%	4.00%	-	-	-	-	138,805,938	(4,761,588)	(642,637)	-	-	5,552,238	(108,085)	5,444,153	138,845,865	18%
2051	2.00%	4.00%	-	-	-	-	142,872,198	(3,100,969)	(609,269)	-	-	5,714,888	(74,205)	5,640,683	144,802,643	10%
2056	2.00%	4.00%	-	-	-	-	156,036,001	(1,911,979)	(613,980)	-	-	6,241,440	(50,519)	6,190,921	159,700,962	5%
2061	2.00%	4.00%	-	-	-	-	177,723,877	(1,081,502)	(650,070)	-	-	7,108,955	(34,631)	7,074,324	183,066,629	3%
2066	2.00%	4.00%	-	-	-	-	207,792,183	(544,717)	(713,867)	-	-	8,311,687	(25,172)	8,286,516	214,820,114	1%



APPENDIX

ALTERNATE SCENARIO

City of Detroit Police and Fire Retiree Health Care Trust

Alternate with 40% HRA Utilization (4.0% Return with 55% Monetization)

Current Participants										Potential Future Participants			Group Description
MA PPO	MA HMO	Opt-Out HRA	Retiree HRA						Spouse HRA (Non-Med Elig)	Spouse Not Receiving	Actively Waived	No Enrollment Election	
			Below FPL	Income Level	Non-Med Duty Dis	Non-Med Elig	Over 65 Non-Med Elig	Over 65 Unsub					
\$ 180.00	\$ 180.00	\$ 175.00	\$ 200.58	\$ 225.00	\$ 400.00	\$ 175.00	\$ 350.00	\$ 175.00	\$ 175.00	n/a	n/a	n/a	2022 Monthly Amount
\$ 195.00	\$ 195.00	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00	n/a	n/a	n/a	Current Monthly Amount
4,026	162	2,296	-	27	300	653	81	-	486	485	-	293	Number in Group 12/31/2021
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Include Group
\$ -	\$ -	\$ 185.00	\$ 210.58	\$ 235.00	\$ 400.00	\$ 185.00	\$ 360.00	\$ 185.00	\$ 185.00				Flat Dollar Monthly Lifetime Benefit (per person) Pre-65
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00				Flat Dollar Monthly Lifetime Benefit (per person) Post-65
100%	100%	40%	40%	40%	40%	40%	40%	40%	40%				Utilization Percentage Pre-65 (Applies to Flat Dollar Only)
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%				Utilization Percentage Post-65 (Applies to Flat Dollar Only)
\$ -	\$ -	\$ 74.00	\$ 84.23	\$ 94.00	\$ 160.00	\$ 74.00	\$ 144.00	\$ 74.00	\$ 74.00	\$ 62.50	\$ 92.50	\$ 62.50	Flat \$ Pre 65 benefit * Utilization %
\$ 195.00	\$ 195.00	\$ 185.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00	\$ 360.00	\$ 185.00	\$ 195.00	\$ 62.50	\$ 195.00	\$ 125.00	Flat \$ Post 65 benefit * Utilization %
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	Annual increase in Flat Dollar Benefit

\$253,900,999	Original Face Value of Bonds at 12/10/2014
\$5,000,000	Face Value of Bond (A) at Val Date
\$0	Face Value of Bond (B) at Val Date
55%	MV of Bond (used to calculate UAAL)
\$233,837,048	Investable Assets*
Never	Year of Insolvency
Never	Year Monetization/Cash is Needed
4.00%	Average Yield

149,004,610	Present Value of Benefits
17,010,732	Present Value of Expenses
166,015,342	Total
236,587,048	Valuation Assets (Immediate Monetization)*
(70,571,706)	Unfunded Actuarial Accrued Liability (UAAL)
445,524	Present Value of Future Contributions
(71,017,230)	Asset Deficit/(Surplus)
142.8%	Funded %

Notes:

* Excludes accrued interest receivable as it is already accounted for in the cash flow projection.

Bond coupon payment does not accrue additional interest during the year in which it is paid.

^ Valuation

	Ad-Hoc				Trust							Interest				Dec. 31 Assets	% Contracts Remaining
Year	Ad-Hoc Prem. Increase	Investment Return	Optional Bond Sale	Optional % of Face	Face Value of Bonds BOY	Principal Repayment	Jan 1. Assets*	Benefit Payments	Expenses	Grant / (Due City)	Bond Coupon	Invested Assets	Ben./ Expen./ Grant/ Bond#	Total			
2022	N/A	4.00%	\$ -	0.00%	\$ 5,000,000	\$ -	\$ 233,837,048	\$ (13,532,194)	\$ (916,359)	\$ 43,750	\$ 200,000	\$ 9,353,482	\$ (288,096)	\$ 9,265,386	\$ 228,697,631	98%	
2023	0.00%	4.00%	-	-	5,000,000	-	228,697,631	(13,166,565)	(914,465)	43,750	200,000	9,147,905	(280,746)	9,067,160	223,727,510	94%	
2024	0.00%	4.00%	-	-	5,000,000	-	223,727,510	(12,722,550)	(911,855)	43,750	200,000	8,949,100	(271,813)	8,877,287	219,014,142	90%	
2025	0.00%	4.00%	-	-	4,971,590	28,410	219,042,552	(12,270,200)	(908,437)	43,750	198,864	8,761,702	(262,698)	8,697,868	214,605,533	87%	
2026	0.00%	4.00%	-	-	4,944,995	26,595	214,632,128	(11,800,324)	(904,110)	43,750	197,800	8,585,285	(253,214)	8,529,871	210,501,314	83%	
2027	0.00%	4.00%	-	-	4,919,919	25,077	210,526,391	(11,313,674)	(898,777)	43,750	196,797	8,421,056	(243,374)	8,374,478	206,732,168	79%	
2028	0.00%	4.00%	-	-	4,896,614	23,304	206,755,473	(10,841,407)	(892,343)	43,750	195,865	8,270,219	(233,800)	8,232,283	203,297,755	75%	
2029	0.00%	4.00%	-	-	4,875,310	21,304	203,319,059	(10,369,379)	(884,726)	43,750	195,012	8,132,762	(224,207)	8,103,568	200,212,271	72%	
2030	0.00%	4.00%	-	-	4,856,263	19,047	200,231,319	(9,899,898)	(875,864)	43,750	194,251	8,009,253	(214,640)	7,988,863	197,488,170	68%	
2031	0.00%	4.00%	-	-	4,574,949	281,314	197,769,483	(9,414,220)	(865,722)	43,750	182,998	7,910,779	(204,724)	7,889,053	195,422,344	64%	
2032	0.00%	4.00%	-	-	4,291,024	283,925	195,706,270	(8,926,382)	(854,299)	43,750	171,641	7,828,251	(194,739)	7,805,153	193,774,492	60%	
2033	0.00%	4.00%	-	-	3,995,781	295,243	194,069,735	(8,414,585)	(841,630)	43,750	159,831	7,762,789	(184,249)	7,738,371	192,595,641	57%	
2034	0.00%	4.00%	-	-	3,632,528	363,253	192,958,894	(7,904,824)	(827,792)	43,750	145,301	7,718,356	(173,777)	7,689,880	191,959,907	53%	
2035	0.00%	4.00%	-	-	3,269,275	363,253	192,323,159	(7,402,321)	(812,905)	-	196,157	7,692,926	(164,305)	7,724,778	191,832,712	49%	
2036	0.00%	4.00%	-	-	2,906,022	363,253	192,195,965	(6,901,885)	(797,124)	-	174,361	7,687,839	(153,980)	7,708,220	192,205,176	46%	
2041	0.00%	4.00%	-	-	1,089,758	363,253	199,245,701	(4,609,926)	(712,631)	-	65,386	7,969,828	(106,451)	7,928,762	201,851,907	30%	
2046	0.00%	4.00%	-	-	-	-	218,446,543	(2,895,697)	(642,637)	-	-	8,737,862	(70,767)	8,667,095	223,575,303	18%	
2051	0.00%	4.00%	-	-	-	-	249,008,385	(1,727,781)	(609,269)	-	-	9,960,335	(46,741)	9,913,594	256,584,930	10%	
2056	0.00%	4.00%	-	-	-	-	291,802,798	(971,978)	(613,980)	-	-	11,672,112	(31,719)	11,640,393	301,857,233	5%	
2061	0.00%	4.00%	-	-	-	-	347,302,417	(499,346)	(650,070)	-	-	13,892,097	(22,988)	13,869,108	360,022,109	3%	
2066	0.00%	4.00%	-	-	-	-	416,720,733	(227,902)	(713,867)	-	-	16,668,829	(18,835)	16,649,994	432,428,958	1%	
2071	0.00%	4.00%	-	-	-	-	501,960,606	(88,704)	-	-	-	20,078,424	(1,774)	20,076,650	521,948,552	0%	

