

City of Worcester Retirement System

**Governmental Accounting Standards Board
Statements No. 67 and 68 (GASB 67/68) Accounting
Valuation as of December 31, 2022**



This report has been prepared at the request of the Retirement Board to assist the Board and the member units in preparing their financial reports for their liabilities associated with the City of Worcester Retirement System. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Retirement Board and may only be provided to other parties in its entirety. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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July 7, 2023

Retirement Board
City of Worcester Retirement System
City Hall, Room 103, 455 Main Street
Worcester, MA 01608

Dear Board Members:

We are pleased to submit this Governmental Accounting Standards Board Statements No. 67 and 68 (GASB 67/68) Accounting Valuation as of December 31, 2022 for the City of Worcester Retirement System, a cost-sharing multiple employer defined benefit pension plan. It contains the actuarial information that will need to be disclosed in order to comply with GASB 67 and 68. This report excludes the increase in the COLA percentage to 5% effective July 1, 2022 because the Board had not approved the increase as of the measurement date. Please refer to the City of Worcester Retirement System Actuarial Valuation and Review as of January 1, 2023, dated June 8, 2023, for the data, assumptions, and plan of benefits underlying these calculations.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist the Board and the member units in preparing their financial reports for their liabilities associated with the City of Worcester Retirement System. The census and financial information on which our calculations were based were provided by the staff of the City of Worcester Retirement System. That assistance is gratefully acknowledged.

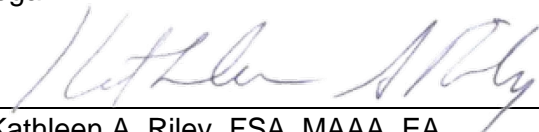
The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.

The actuarial calculations were completed under the supervision of Kathleen A. Riley, FSA, MAAA, EA. She is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of her knowledge, the information supplied in the actuarial valuation is complete and accurate. The assumptions used in this actuarial valuation were selected by the Board based upon our analysis and recommendations. In her opinion, the assumptions are reasonable and take into account the experience of City of Worcester Retirement System and reasonable expectations.

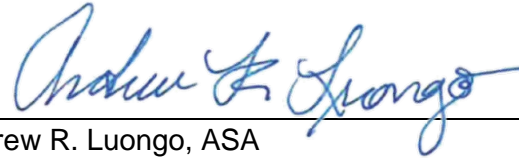
We look forward to reviewing this report with you and to answering any questions.

Sincerely,

Segal



Kathleen A. Riley, FSA, MAAA, EA
Senior Vice President and Chief Actuary



Andrew R. Luongo, ASA
Consultant

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Section 1: Actuarial Valuation Summary

Purpose and basis

This report has been prepared by Segal to present certain disclosure information required by Governmental Accounting Standards Board Statements No. 67 and 68 (GASB 67/68) as of December 31, 2022. This report is based on financial information as of December 31, 2022 and the Actuarial Valuation and Review as of January 1, 2023, which reflects:

- The benefit provisions of Massachusetts General Law Chapter 32;
- The characteristics of covered active participants, inactive participants, and retired participants and beneficiaries as of December 31, 2022, provided by the staff of the City of Worcester Retirement System;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Highlights of the valuation

1. The Net Pension Liability (NPL) measured as of December 31, 2022 and December 31, 2021 was determined based upon the results of actuarial valuations as of January 1, 2023 and January 1, 2022, respectively.
2. The NPL is equal to the difference between the Total Pension Liability (TPL) and the Plan Fiduciary Net Position (FNP). The Plan Fiduciary Net Position is equal to the market value of assets, and, therefore, the NPL measure is very similar to an Unfunded Actuarial Accrued Liability (UAL) on a market value basis. The NPL increased from \$313,613,578 as of December 31, 2021 to \$481,151,054 as of December 31, 2022 and the Plan Fiduciary Net Position as a percent of the TPL decreased from 81.02% to 71.58%.
3. The discount rate used to measure the TPL and NPL was 6.80% as of December 31, 2022 and December 31, 2021.

Section 1: Actuarial Valuation Summary

Important information about actuarial valuations

In order to prepare a valuation, Segal relies on a number of input items. These include:

Plan of benefits	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Participant data	An actuarial valuation for a plan is based on data provided to the actuary by the Retirement System. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Assets	The valuation is based on the market value of assets as of the valuation date, as provided by the Retirement System.
Actuarial assumptions	In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of participants in each year, as well as forecasts of the plan's benefits for each of those events. In addition, the benefits forecasted for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions are selected within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.
Actuarial models	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.

Section 1: Actuarial Valuation Summary

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

The actuarial valuation is prepared at the request of the Retirement Board. Segal is not responsible for the use or misuse of its report, particularly by any other party.

An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

Actuarial results in this report are not rounded, but that does not imply precision.

If the Retirement Board is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.

Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Retirement Board should look to their other advisors for expertise in these areas.

As Segal has no discretionary authority with respect to the management or assets of the Retirement System, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Retirement System.

Section 2: GASB Information

General information about the pension plan

Plan membership. At December 31, 2022, pension plan membership consisted of the following:

Retired participants or beneficiaries currently receiving benefits	2,761
Inactive participants with a vested right to a deferred or immediate benefit	167
Inactive participants entitled to a refund of employee contributions	1,130
Active members	<u>3,630</u>
Total	7,688

Section 2: GASB Information

Exhibit 1 – Net Pension Liability

Reporting date for employer under GASB 68	June 30, 2023	June 30, 2022
Measurement date	December 31, 2022	December 31, 2021
Components of the Net Pension Liability		
Total Pension Liability	\$1,693,171,500	\$1,652,123,169
Plan Fiduciary Net Position	1,212,020,446	1,338,509,591
Net Pension Liability	481,151,054	313,613,578
Plan Fiduciary Net Position as a percentage of the Total Pension Liability*	71.58%	81.02%

* These funded percentages are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligation or the need for or the amount of future contributions.

Actuarial assumptions. The TPL as of December 31, 2022, which was determined based on the results of an actuarial valuation as of January 1, 2023, used the following actuarial assumptions, applied to all periods included in the measurement:

Wage inflation	3.00%
Salary increases	4.00%
Net investment rate of return	6.80%
Cost of living adjustments	3.00% increase on the first \$14,000 of retirement allowance, increasing to \$15,000 on July 1, 2023, and to \$16,000 on July 1, 2024
Mortality	Pre-Retirement: RP-2014 Blue Collar Employee Mortality Table projected generationally with Scale MP-2021 Healthy Retiree: RP-2014 Blue Collar Healthy Annuitant Mortality Table projected generationally with MP-2021 Disabled Retiree: RP-2014 Blue Collar Healthy Annuitant Mortality Table set forward one year and projected generationally with Scale MP-2021

Detailed information regarding all actuarial assumptions can be found in the January 1, 2023 Actuarial Valuation and Review.

Section 2: GASB Information

Determination of discount rate and investment rates of return

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and adding expected inflation. The target allocation (approved by the Board) and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before investment expenses, used in the derivation of the long-term expected investment rate of return assumption are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic equity	21.18%	6.59%
International developed markets equity	12.22%	6.87%
International emerging markets equity	9.55%	8.30%
Core fixed income	15.25%	1.53%
High-yield fixed income	6.80%	3.54%
Real estate	9.50%	3.44%
Commodities	1.40%	4.01%
Hedge fund, GTAA, Risk parity	6.50%	3.06%
Infrastructure	5.00%	5.44%
Private equity	<u>12.60%</u>	9.49%
Total	100.00%	

Note: Some asset classes included in the Plan's target asset allocation have been combined.

Discount rate. The discount rate used to measure the TPL was 6.80% as of December 31, 2022 and December 31, 2021. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially determined contribution rates. Based on those assumptions, the Plan FNP was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the TPL as of both December 31, 2022 and December 31, 2021.

Section 2: GASB Information

Discount rate sensitivity

Sensitivity of the Net Pension Liability to changes in the discount rate. The following presents the Net Pension Liability of the City of Worcester Retirement System as of December 31, 2022 calculated using the discount rate of 6.80%, as well as what the City of Worcester Retirement System's NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (5.80%) or 1-percentage-point higher (7.80%) than the current rate.

Net Pension Liability	1% Decrease (5.80%)	Current Discount Rate (6.80%)	1% Increase (7.80%)
City of Worcester Retirement System's Net Pension Liability as of December 31, 2022	\$673,082,393	\$481,151,054	\$319,493,292

Section 2: GASB Information

Exhibit 2 – Schedule of changes in Net Pension Liability – Last two fiscal years

Reporting date for employer under GASB 68 Measurement date	June 30, 2023 December 31, 2022	June 30, 2022 December 31, 2021
Total Pension Liability		
Service cost	\$35,692,910	\$34,521,663
Interest	111,379,237	109,033,323
Change of benefit terms	0	21,678,106
Differences between expected and actual experience	-6,251,568	-13,682,272
Changes of assumptions	0	2,637,615
Benefit payments, including refunds of member contributions	<u>-99,772,248</u>	<u>-95,473,388</u>
Net change in Total Pension Liability	\$41,048,331	\$58,715,047
Total Pension Liability – beginning	<u>1,652,123,169</u>	<u>1,593,408,122</u>
Total Pension Liability – ending	\$1,693,171,500	\$1,652,123,169
Plan Fiduciary Net Position		
Contributions – employer	\$62,761,035	\$59,024,767
Contributions – employee	21,764,386	20,012,226
Net investment income	-110,667,214	221,467,014
Benefit payments, including refunds of member contributions	-99,772,248	-95,473,388
Administrative expense	<u>-575,104</u>	<u>-568,333</u>
Net change in Plan Fiduciary Net Position	-\$126,489,145	\$204,462,286
Plan Fiduciary Net Position – beginning	<u>1,338,509,591</u>	<u>1,134,047,305</u>
Plan Fiduciary Net Position – ending	\$1,212,020,446	\$1,338,509,591
Net Pension Liability – ending	\$481,151,054	\$313,613,578
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	71.58%	81.02%
Covered payroll ¹	\$218,345,985	\$199,971,632
Plan Net Pension Liability as percentage of covered payroll	220.36%	156.83%

¹ Covered payroll for 2022 and 2021 as estimated in the January 1, 2023 and January 1, 2022 actuarial valuations, respectively.

Section 2: GASB Information

Notes to Schedule:

Changes in actuarial assumptions	<p>Effective January 1, 2022:</p> <ul style="list-style-type: none">• The investment return assumption was lowered from 6.90% to 6.80%.• The mortality projection scale for future longevity improvement was updated from MP-2017 to MP-2021. <p>Effective January 1, 2023:</p> <ul style="list-style-type: none">• None.
Changes in plan provisions	<p>Effective January 1, 2022:</p> <ul style="list-style-type: none">• The COLA base was increased from \$13,000 to \$14,000 on July 1, 2022, to \$15,000 on July 1, 2023, and to \$16,000 on July 1, 2024. <p>Effective January 1, 2023:</p> <ul style="list-style-type: none">• None.

Section 2: GASB Information

Exhibit 3 – Schedule of employer contributions

Year Ended December 31	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency / (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
2014	\$41,200,578	\$41,200,578	\$0	\$168,856,039	24.40%
2015	42,703,837	42,703,837	0	173,759,691	24.58%
2016	44,411,990	44,411,990	0	175,910,160	25.25%
2017	46,188,470	46,188,470	0	182,832,183	25.26%
2018	49,098,344	49,098,344	0	192,957,155	25.45%
2019	52,206,269	52,206,269	0	196,970,554	26.50%
2020	55,510,926	55,510,926	0	199,137,147	27.88%
2021	59,024,767	59,024,767	0	199,971,632	29.52%
2022	62,761,035	62,761,035	0	218,345,985	28.74%

See accompanying notes to this schedule on next page.

Section 2: GASB Information

Notes to Schedule:

Methods and assumptions used to establish “actuarially determined contribution”:

Valuation date	Actuarially determined contribution for year ended December 31, 2022 was determined with the January 1, 2021 actuarial valuation.
Actuarial cost method	Entry Age Actuarial Cost Method
Amortization method	Total appropriation increases 6.33% per year, with a smaller appropriation in fiscal 2034.
Remaining amortization period	13 years from July 1, 2021.
Asset valuation method	The market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between actual and expected returns on a market value basis and is recognized over a five-year period. The deferred return is further adjusted, if necessary, so that the actuarial value of assets will stay within 10% of the market value of assets.
Actuarial assumptions:	
Net investment rate of return	6.90%
Wage inflation	3.00%
Salary increases	4.00%
Cost of living adjustments	3% to first \$13,000
Other assumptions	Same as those used in the January 1, 2021 funding actuarial valuation.

Section 2: GASB Information

Exhibit 4 – Pension expense

Reporting date for employer under GASB 68	June 30, 2023	June 30, 2022
Measurement date	December 31, 2022	December 31, 2021
Components of pension expense		
Service cost	\$35,692,910	\$34,521,663
Interest	111,379,237	109,033,323
Current-period benefit changes	0	21,678,106
Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	-1,041,928	-2,280,377
Expensed portion of current-period changes of assumptions	0	439,600
Member contributions	-21,764,386	-20,012,226
Projected earnings on pension plan investments	-90,480,707	-77,662,601
Expensed portion of current-period differences between actual and projected earnings on pension plan investments	40,229,585	-28,760,881
Administrative expense	575,104	568,333
Recognition of beginning of year deferred outflows of resources as pension expense	30,702,429	33,449,381
Recognition of beginning of year deferred inflows of resources as pension expense	<u>-60,421,582</u>	<u>-44,523,662</u>
Pension expense	\$44,870,662	\$26,450,659

Section 2: GASB Information

Deferred outflows of resources and deferred inflows of resources

Reporting date for employer under GASB 68	June 30, 2023	June 30, 2022
Measurement date	December 31, 2022	December 31, 2021
Deferred outflows of resources		
Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$9,844,215	\$8,281,991
Changes of assumptions	12,460,686	23,602,560
Net difference between projected and actual earnings on pension plan investments	39,041,623	0
Difference between expected and actual experience in the Total Pension Liability	<u>715,620</u>	<u>954,160</u>
Total deferred outflows of resources	\$62,062,144	\$32,838,711
Deferred inflows of resources		
Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$9,844,215	\$8,281,991
Changes of assumptions	0	0
Net difference between projected and actual earnings on pension plan investments	0	157,652,347
Difference between expected and actual experience in the Total Pension Liability	<u>21,903,844</u>	<u>22,018,137</u>
Total deferred inflows of resources	\$31,748,059	\$187,952,475
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting date for employer under GASB 68 year ended June 30:		
2023	N/A	-\$29,719,153
2024	-\$9,853,507	-49,041,163
2025	-1,942,473	-41,130,129
2026	7,314,825	-31,872,831
2027	35,837,168	-3,350,488
2028	-1,041,928	0
Thereafter	0	0

Note: Average expected remaining service is 6 years as of December 31, 2022 and December 31, 2021.

¹ Calculated in accordance with Paragraphs 54 and 55 of GASB 68

Section 2: GASB Information

Exhibit 5 – Determination of proportionate share

Employer Name	FY 2022 Total Appropriation	Percent of FY 2022 Total Appropriation	Share of NPL as of December 31, 2021	FY 2023 Total Appropriation	Percent of FY 2023 Total Appropriation	Share of NPL as of December 31, 2022
City of Worcester	\$52,147,811	88.349034%	\$277,074,568	\$54,930,315	87.522959%	\$421,117,639
Worcester Housing Authority	4,427,547	7.501168%	23,524,681	5,255,645	8.374057%	40,291,864
Water Enterprise Fund	1,581,272	2.678997%	8,401,698	1,597,535	2.545425%	12,247,339
Sewer Enterprise Fund	816,887	1.383973%	4,340,327	920,261	1.466294%	7,055,089
Golf Enterprise Fund	51,250	0.086828%	272,304	57,279	0.091265%	439,123
Grand totals:	\$59,024,767	100.000000%	\$313,613,578	\$62,761,035	100.000000%	\$481,151,054

Section 2: GASB Information

Exhibit 6 – Determination of proportionate share amounts by employer

Employer Name	2023 Share of Cost Allocation (1)	Net Pension Liability (2)	Covered Employee Payroll (3)	Discount Rate Sensitivity		
				1% Decrease (5.80%) (4)	Current Discount Rate (6.80%) (5)	1% Increase (7.80%) (6)
City of Worcester	87.522959%	\$421,117,639	\$191,102,867	\$589,101,626	\$421,117,639	\$279,629,983
Worcester Housing Authority	8.374057%	40,291,864	18,284,418	56,364,303	40,291,864	26,754,550
Water Enterprise Fund	2.545425%	12,247,339	5,557,833	17,132,808	12,247,339	8,132,462
Sewer Enterprise Fund	1.466294%	7,055,089	3,201,593	9,869,367	7,055,089	4,684,711
Golf Enterprise Fund	0.091265%	439,123	199,274	614,289	439,123	291,586
Grand totals:	100.000000%	\$481,151,054	\$218,345,985	\$673,082,393	\$481,151,054	\$319,493,292

Section 2: GASB Information

Exhibit 6 – Determination of proportionate share by employer

Employer Name	Schedule of Contributions				Pension Expense		
	Statutory Required Contribution	Contributions in Relation to the Statutory Required Contribution	Contribution Deficiency / (Excess)	Contributions as a Percentage of Covered Employee Payroll	Proportionate Share of Plan Pension Expense	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
	(7)	(8)	(9)	(10)	(11)	(12)	(13)
City of Worcester	\$54,930,315	\$54,930,315	\$0	28.74%	\$39,272,131	\$736,820	\$40,008,951
Worcester Housing Authority	5,255,645	5,255,645	0	28.74%	3,757,495	106,355	3,863,850
Water Enterprise Fund	1,597,535	1,597,535	0	28.74%	1,142,149	-736,138	406,011
Sewer Enterprise Fund	920,261	920,261	0	28.74%	657,936	-107,838	550,098
Golf Enterprise Fund	57,279	57,279	0	28.74%	40,951	801	41,752
Grand totals:	\$62,761,035	\$62,761,035	\$0	28.74%	\$44,870,662	\$0	\$44,870,662

Section 2: GASB Information

Exhibit 6 – Determination of proportionate share by employer

Employer Name	Deferred Outflows of Resources					Deferred Inflows of Resources			
	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources
	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
City of Worcester	\$626,332	\$34,170,384	\$10,905,962	\$4,466,246	\$50,168,924	\$19,170,892	\$0	\$4,066,011	\$23,236,903
Worcester Housing Authority	59,926	3,269,368	1,043,465	4,783,599	9,156,358	1,834,240	0	2,073,694	3,907,934
Water Enterprise Fund	18,216	993,775	317,177	53,575	1,382,743	557,546	0	2,809,663	3,367,209
Sewer Enterprise Fund	10,493	572,465	182,710	522,134	1,287,802	321,175	0	879,124	1,200,299
Golf Enterprise Fund	653	35,631	11,372	18,661	66,317	19,991	0	15,723	35,714
Grand totals:	\$715,620	\$39,041,623	\$12,460,686	\$9,844,215	\$62,062,144	\$21,903,844	\$0	\$9,844,215	\$31,748,059

Section 2: GASB Information

Exhibit 6 – Determination of proportionate share by employer

Employer Name	Deferred Inflows/(Outflows) Recognized In Future Pension Expense (Year Ended June 30)					
	2024 (23)	2025 (24)	2026 (25)	2027 (26)	2028 (27)	Thereafter (28)
City of Worcester	-\$7,887,263	-\$1,690,450	\$6,411,816	\$31,655,182	-\$1,557,266	\$0
Worcester Housing Authority	-718,777	556,547	1,331,758	3,484,236	594,660	0
Water Enterprise Fund	-986,951	-695,582	-459,947	288,883	-130,869	0
Sewer Enterprise Fund	-252,320	-110,681	25,056	376,417	49,032	0
Golf Enterprise Fund	-8,196	-2,307	6,142	32,450	2,515	0
Grand totals:	-\$9,853,507	-\$1,942,473	\$7,314,825	\$35,837,168	-\$1,041,928	\$0

Appendix: Definition of terms

Definitions of certain terms as they are used in Statement No. 68. The terms may have different meanings in other contexts.

Active employees	Individuals employed at the end of the reporting or measurement period, as applicable.
Actual contributions	Cash contributions recognized as additions to a pension Plan Fiduciary Net Position.
Actuarial present value of projected benefit payments	Projected benefit payments discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
Actuarial valuation	The determination, as of a point in time (the actuarial valuation date), of the service cost, Total Pension Liability, and related actuarial present value of projected benefit payments for pensions performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.
Actuarial valuation date	The date as of which an actuarial valuation is performed.
Actuarially determined contribution	A target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.
Ad hoc cost-of-living adjustments (Ad Hoc COLAs)	Cost-of-living adjustments that require a decision to grant by the authority responsible for making such decisions.
Ad hoc postemployment benefit changes	Postemployment benefit changes that require a decision to grant by the authority responsible for making such decisions.
Agent employer	An employer whose employees are provided with pensions through an agent multiple-employer defined benefit pension plan.
Agent multiple-employer defined benefit pension plan (agent pension plan)	A multiple-employer defined benefit pension plan in which pension plan assets are pooled for investment purposes but separate accounts are maintained for each individual employer so that each employer's share of the pooled assets is legally available to pay the benefits of only its employees.
Allocated insurance contract	A contract with an insurance company under which related payments to the insurance company are currently used to purchase immediate or deferred annuities for individual employees. Also may be referred to as an annuity contract.
Automatic cost-of-living adjustments (Automatic COLAs)	Cost-of-living adjustments that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).

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Automatic postemployment benefit changes	Postemployment benefit changes that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).
Closed period	A specific number of years that is counted from one date and declines to zero with the passage of time. For example, if the recognition period initially is five years on a closed basis, four years remain after the first year, three years after the second year, and so forth.
Collective deferred outflows of resources and deferred inflows of resources related to pensions	Deferred outflows of resources and deferred inflows of resources related to pensions arising from certain changes in the collective Net Pension Liability.
Collective Net Pension Liability	The Net Pension Liability for benefits provided through (1) a cost-sharing pension plan or (2) a single-employer or agent pension plan in circumstances in which there is a special funding situation.
Collective pension expense	Pension expense arising from certain changes in the collective Net Pension Liability.
Contributions	Additions to a pension Plan Fiduciary Net Position for amounts from employers, non-employer contributing entities (for example, state government contributions to a local government pension plan), or employees. Contributions can result from cash receipts by the pension plan or from recognition by the pension plan of a receivable from one of these sources.
Cost-of-living adjustments	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Cost-sharing employer	An employer whose employees are provided with pensions through a cost-sharing multiple-employer defined benefit pension plan.
Cost-sharing multiple employer defined benefit pension plan (Cost-sharing pension plan)	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
Covered payroll	The payroll of employees that are provided with pensions through the pension plan.
Deferred retirement option program (DROP)	A program that permits an employee to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The employee continues to provide service to the employer and is paid for that service by the employer after the DROP entry date; however, the pensions that would have been paid to the employee (if the employee had retired and not entered the DROP) are credited to an individual employee account within the defined benefit pension plan until the end of the DROP period.
Defined benefit pension plans	Pension plans that are used to provide defined benefit pensions.

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Defined benefit pensions	Pensions for which the income or other benefits that the employee will receive at or after separation from employment are defined by the benefit terms. The pensions may be stated as a specified dollar amount or as an amount that is calculated based on one or more factors such as age, years of service, and compensation. (A pension that does not meet the criteria of a defined contribution pension is classified as a defined benefit pension for purposes of Statement No. 68.)
Defined contribution pension plans	Pension plans that are used to provide defined contribution pensions.
Defined contribution pensions	Pensions having terms that (1) provide an individual account for each employee; (2) define the contributions that an employer is required to make (or the credits that it is required to provide) to an active employee's account for periods in which that employee renders service; and (3) provide that the pensions an employee will receive will depend only on the contributions (or credits) to the employee's account, actual earnings on investments of those contributions (or credits), and the effects of forfeitures of contributions (or credits) made for other employees, as well as pension plan administrative costs, that are allocated to the employee's account.
Discount rate	<p>The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following:</p> <ol style="list-style-type: none"> 1. The actuarial present value of benefit payments projected to be made in future periods in which (a) the amount of the pension Plan Fiduciary Net Position is projected (under the requirements of Statement No. 68) to be greater than the benefit payments that are projected to be made in that period and (b) pension plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on pension plan investments. 2. The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.
Entry age actuarial cost method	A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age(s). The portion of this actuarial present value allocated to a valuation year is called the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is called the actuarial accrued liability.
Inactive employees	Terminated individuals that have accumulated benefits but are not yet receiving them, and retirees or their beneficiaries currently receiving benefits.
Measurement period	The period between the prior and the current measurement dates.
Multiple-employer defined benefit pension plan	A defined benefit pension plan that is used to provide pensions to the employees of more than one employer.

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Net Pension Liability (NPL)	The liability of employers and non-employer contributing entities to employees for benefits provided through a defined benefit pension plan.
Non-employer contributing entities	Entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of Statement No. 68, employees are not considered non-employer contributing entities.
Other postemployment benefits	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits, regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits.
Pension plans	Arrangements through which pensions are determined, assets dedicated for pensions are accumulated and managed and benefits are paid as they come due.
Pensions	Retirement income and, if provided through a pension plan, postemployment benefits other than retirement income (such as death benefits, life insurance, and disability benefits). Pensions do not include postemployment healthcare benefits and termination benefits.
Plan members	Individuals that are covered under the terms of a pension plan. Plan members generally include (1) employees in active service (active plan members) and (2) terminated employees who have accumulated benefits but are not yet receiving them and retirees or their beneficiaries currently receiving benefits (inactive plan members).
Postemployment	The period after employment.
Postemployment benefit changes	Adjustments to the pension of an inactive employee.
Postemployment healthcare benefits	Medical, dental, vision, and other health-related benefits paid subsequent to the termination of employment.
Projected benefit payments	All benefits estimated to be payable through the pension plan to current active and inactive employees as a result of their past service and their expected future service.
Public employee retirement system	A special-purpose government that administers one or more pension plans; also may administer other types of employee benefit plans, including postemployment healthcare plans and deferred compensation plans.
Real rate of return	The rate of return on an investment after adjustment to eliminate inflation.
Service costs	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Single employer	An employer whose employees are provided with pensions through a single-employer defined benefit pension plan.
Single-employer defined benefit pension plan	A defined benefit pension plan that is used to provide pensions to employees of only one

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(Single-employer pension plan)	employer.
Special funding situations	<p>Circumstances in which a non-employer entity is legally responsible for making contributions directly to a pension plan that is used to provide pensions to the employees of another entity or entities and either of the following conditions exists:</p> <ol style="list-style-type: none">1. The amount of contributions for which the non-employer entity legally is responsible is not dependent upon one or more events or circumstances unrelated to the pensions.2. The non-employer entity is the only entity with a legal obligation to make contributions directly to a pension plan.
Termination benefits	Inducements offered by employers to active employees to hasten the termination of services, or payments made in consequence of the early termination of services. Termination benefits include early-retirement incentives, severance benefits, and other termination-related benefits.
Total Pension Liability (TPL)	The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of Statement No. 68.