Park Employees' Annuity and Benefit Fund of Chicago

Actuarial Valuation and Review as of December 31, 2024

Segal

Segal

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May 30, 2025

Board of Trustees
Park Employees' Annuity and Benefit Fund of Chicago
3500 S. Morgan St. Suite 400
Chicago, Illinois 60609

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of December 31, 2024. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the net pension liability under Governmental Accounting Standards Board (GASB) Statement No. 67 and the funding requirements for the fiscal year ending December 31, 2025.

This report has been prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Park Employees' Annuity and Benefit Fund of Chicago (the Fund).

Asset and Membership Data

The census information and financial information on which our calculations were based was prepared by the Fund staff. That assistance is gratefully acknowledged. Segal does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. To the extent we can, however, Segal does review the data for reasonableness and consistency. Based on our review of the data, we have no reason to doubt the substantial accuracy of the information on which we have based this report and we have no reason to believe there are facts or circumstances that would affect the validity of these results.

Plan Changes

The plan provisions are unchanged since the last actuarial valuation.

Actuarial Assumptions and Methods

The actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by the Fund's actuary. The assumptions and methods used for the December 31, 2024, actuarial valuation were based on an experience analysis covering the five-year period ending December 31, 2022, and were adopted by the Board, effective for the December 31, 2023, valuation. These actuarial assumptions and methods comply with the parameters set by the Actuarial Standards of Practice for funding purposes and the parameters for disclosure in GASB Statement No. 67. The investment return assumption is based on the Fund being invested according to the target asset allocation in the Investment Policy Statement. To the extent that the liquidation of assets to pay benefit payments and expenses requires a shift in investment allocation to more liquid, lower return asset classes, a lower discount rate may be required in the future.

Funding Adequacy

The current funding policy of the Fund, adopted by the Board, is to have contributions sufficient to amortize the unfunded actuarial accrued liability over the 30-year period ending December 31, 2042. However, the actual amount of employer contributions each year is set by statute. P.A. 102-0263 also included provisions that updated the method and amount of employer contributions. Under P.A. 102-0263, employer contributions are now the sum of employer normal cost plus a 35-year closed-period amortization of the unfunded actuarial accrued liability as of December 31, 2024.

This report includes the following schedules for the Actuarial and Financial sections of the Annual Comprehensive Financial Report, which were prepared by Segal:

- Actuarial
  - Active Member Valuation Data
  - Retirees and Beneficiaries Added to and Removed from Rolls
  - Solvency Test
  - Analysis of Financial Experience
- Financial
  - Schedule of Changes in Employer's Net Pension Liability
  - Schedule of Employer's Net Pension Liability
  - Schedule of Employer Contributions

Limitation of Actuarial Measurements

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; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law.

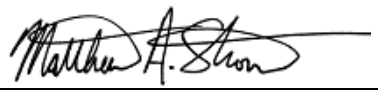
Qualifications

The actuarial calculations were directed under my supervision. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of my knowledge, the information supplied in this actuarial valuation is complete and accurate. The assumptions used in this actuarial valuation were selected by the Board based upon my analysis and recommendations. In my opinion, the assumptions are reasonable and take into account the experience of the Fund and reasonable expectations. In addition, in my opinion, the combined effect of these assumptions is expected to have no significant bias.

Segal makes no representation or warranty as to the future status of the Fund and does not guarantee any particular result. This document does not constitute legal, tax, accounting or investment advice or create or imply a fiduciary relationship. The Board is encouraged to discuss any issues raised in this report with the Fund's legal, tax and other advisors before taking, or refraining from taking, any action.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,



Matthew A. Strom, FSA, MAAA, EA
Senior Vice President and Actuary

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Section 1: Actuarial Valuation Summary

Purpose and basis

This report has been prepared by Segal to present a valuation of the Park Employees' Annuity and Benefit Fund of Chicago (the Fund) as of December 31, 2024. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and to provide information for required disclosures under Governmental Accounting Standards Board (GASB) Statement No. 67.

The contribution requirements presented in this report are based on:

- The benefit provisions of the Fund, as outlined in 40 ILCS 5/12, as administered by the Board;
- The characteristics of covered active members, inactive members, and retired members and beneficiaries as of December 31, 2024, provided by the Fund staff;
- The assets of the Fund as of December 31, 2024, provided by the Fund staff;
- Economic assumptions regarding future salary increases and investment earnings;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc.

Valuation highlights

- Segal strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the unfunded actuarial accrued liability and the principal balance. Under the employer contribution provisions contained in P.A. 102-0263, the Fund is now projected to remain solvent and reach a goal of 100% funding by 2057. A 40-year projection of the Fund's financial status is shown in Exhibit L.
- Employer contributions to the Fund are mandated by statute and target 100% funding of the total actuarial accrued liability of the Fund over the 35-year period ending December 31, 2057. The Board's funding policy used to develop an actuarially determined contribution (ADC) is calculated on a level percentage of pay basis and is based on a closed 30-year period, which ends on December 31, 2042. For the fiscal year beginning December 31, 2024, the ADC based on the Board's funding policy is $83,030,259. Based on the employer contributions set in statue, the employer has budgeted $59,679,376, for the fiscal year beginning December 31, 2024. Compared to the ADC, the contribution deficiency is $23,350,883.
- We have calculated the statutorily-required employer contribution for the fiscal year beginning December 31, 2025, to be $63,332,412.
- The total normal cost as of December 31, 2024 increased 18.4% since the last valuation from $20,670,693 to $24,474,160. This increase is attributed to demographic changes in the active population. In this year's valuation, there are 3,270 active members with an average salary of $52,357 compared to 3,027 in the prior valuation with an average salary of $48,720. In aggregate, the total salary supplied by the fund increased by 16.1% from $147,475,826 to $171,207,015.
- For the year ended December 31, 2024, Segal has determined that the asset return on a fair value basis was 7.7%. After gradual recognition of investment gains and losses under the actuarial smoothing method, the actuarial rate of return was 5.6%. This represents an experience loss when compared to the assumed rate of 7.00% that was in effect for the year ending December 31, 2024. As of December 31, 2024, the actuarial value of assets ($434.7 million) represents 104.0% of the fair value ($418.0 million).
- The portion of deferred investment gains and losses recognized in the calculation of the December 31, 2024, actuarial value of assets resulted in a loss of $5,915,752. Additionally, the non-investment experience resulted in a $15,185,356 net loss.
- As indicated in Section 2 of this report, the total unrecognized investment loss as of December 31, 2024, is $16,719,787. This investment loss will be recognized in the determination of the actuarial value of assets for funding purposes in the next several years, to the extent it is not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 7.00% per year (net of investment expenses) on a fair value basis will result in investment losses on the actuarial value of assets in the next several years.
- As mentioned above, the current method used to determine the actuarial value of assets yields an amount that is 104.0% of the fair value of assets as of December 31, 2024. Guidelines in Actuarial Standard of Practice No. 44 (Selection and Use of Asset

Valuation Methods for Pension Valuations) recommend that asset values fall within a reasonable range around the corresponding fair value. We believe the actuarial asset method currently complies with these guidelines.

- This actuarial report as of December 31, 2024, is based on financial data as of that date. Changes in the value of assets subsequent to that date are not reflected. Decreases in asset values will increase the cost of the plan, while increases in asset values (in excess of expected) will decrease the cost of the plan.

Changes from prior valuation

- The actuarial accrued liability is calculated under the entry age normal actuarial cost method. Under this method, a normal cost is calculated for each participant that is the level annual contribution as a percent of pay required to be made from the participant's date of hire for as long as he/she remains active. In prior valuations, the participant's provided date of hire was used to determine the participant's Plan entry date. This method has been updated and now the participant's date of hire is determined as the valuation date less years of service. This new method results in more consistent normal cost calculations for actives from year to year, since the census data received annually for the actuarial valuation, at times, can include a changed date of hire for active members leading to significant difference in the assumed working lifetime of the participant one valuation to the next. As a result of this change, accrued liability increased by 0.3% and normal cost decreased by 2.7%.
- The funded ratio (the ratio of the actuarial value of assets to actuarial accrued liability) is 33.2%, compared to the prior year funded ratio of 33.3%. This ratio is one measure of funded status, and its history is a measure of funding progress. Using the fair value of assets, the funded ratio is 31.9%, compared to 31.5% as of the prior valuation date. These measurements are not necessarily appropriate for assessing the sufficiency of the Fund assets to cover the estimated cost of settling the Fund's benefit obligation or the need for or the amount of future contributions.
- The unfunded actuarial accrued liability is $872,731,602, which is an increase of $26,260,374 since the prior valuation.

Risk

- It is important to note that this actuarial valuation is based on plan assets as of December 31, 2024. The Fund's funded status does not reflect short-term fluctuations of the market, but rather is based on the fair value on the last day of the plan year. Moreover, this actuarial valuation does not include any possible short-term or long-term deviations of demographic experience of the covered population that may emerge after December 31, 2024. Segal is available to prepare projections of potential outcomes of market conditions and other demographic experience upon request.

- Since the actuarial valuation results are dependent on a given set of assumptions, there is a risk that emerging results may differ significantly as actual experience proves to be different from the assumptions. We have not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the Fund's future financial condition but have included a brief discussion of some risks that may affect the Plan in Section 2. A more detailed assessment would provide the Board with a better understanding of the inherent risks and could be important for the Fund.

GASB

- When measuring pension liability for GASB purposes, the same actuarial cost method (Entry Age method) that is used for funding purposes is used to determine the Total Pension Liability. In large part due to the funding changes included in P.A. 102-0263, as of December 31, 2024, the GASB blended discount rate calculation results in the same discount rate (7.00%) as used for plan funding purposes. This means that the Total Pension Liability (TPL) measure for financial reporting shown in this report will not differ from the actuarial accrued liability (AAL) measure for funding. We note that the same is true for the normal cost component of the annual plan cost for funding and financial reporting.
- This report constitutes an actuarial valuation for the purpose of determining the ADC under the Fund's funding policy. The information contained in Section 5 provides the accounting information for Governmental Accounting Standards Board (GASB) Statement No. 67, for inclusion in the Plan's and employer's financial statements as of December 31, 2024. The pension expense under GASB Statement No. 68, for inclusion in the Plan's and employer's financial statements as of December 31, 2024, will be provided separately.
- The Net Pension Liability (NPL) is equal to the difference between the TPL and the Plan's fiduciary net position. The Fund's fiduciary net position is equal to the fair value of assets. The NPL as of December 31, 2024, is $889,451,389, compared to the NPL as of December 31, 2023, of $870,175,004; both measures were based on a discount rate of 7.00%.

Summary of key valuation results

Valuation Result	Current	Prior
Contributions for fiscal year beginning:	**December 31, 2024**	**December 31, 2023**
• Expected employer contributions provided by the Fund	$59,679,376	$59,697,606
• Actuarially determined contributions	83,030,259	77,234,872
• Expected employer contributions for the upcoming year	63,332,412	59,679,376
• Actual employer contributions	—	59,697,606
Actuarial accrued liability for fiscal year beginning:		
• Retired members and beneficiaries	$846,419,215	$837,252,527
• Inactive members	44,828,796	39,479,897
• Active members	416,181,371	393,065,976
• **Total**	**$1,307,429,382**	**$1,269,798,400**
• Total normal cost, including administrative expenses	26,588,298	22,881,372
• Employer normal cost, including administrative expenses	9,139,191	8,076,288
Assets for plan year beginning:		
• Fair value of assets (FVA)	$417,977,993	$399,623,396
• Actuarial value of assets (AVA)	434,697,780	423,327,172
• AVA as a percentage of FVA	104.00%	105.93%
Funded status for plan year beginning:		
• Unfunded actuarial accrued liability on FVA basis	$889,451,389	$870,175,004
• Funded percentage on FVA basis	31.97%	31.47%
• Unfunded actuarial accrued liability on AVA basis	$872,731,602	$846,471,228
• Funded percentage on AVA basis	33.25%	33.34%
• Effective Amortization period	18	19

Section 1: Actuarial Valuation Summary

Valuation Result	Current	Prior
Key assumptions:		
• Long-term expected rate of return	7.00%	7.00%
• Inflation rate	2.50%	2.50%
GASB information:		
• Discount rate	7.00%	7.00%
• Municipal bond index	4.08%	3.26%
• Single equivalent discount rate	7.00%	7.00%
• Total Pension Liability	$1,307,429,382	$1,269,798,400
• Plan Fiduciary Net Position	417,977,993	399,623,396
• Net Pension Liability	889,451,389	870,175,004
• Plan Fiduciary Net Position as a percentage of Total Pension Liability	31.97%	31.47%
Demographic data for plan year beginning:		
• Number of retired members and beneficiaries	2,705	2,730
• Number of inactive vested members	201	187
• Number of inactive members due a refund of employee contributions	5,378	5,237
• Number of active members	3,270	3,027
• Total salary supplied by the Fund	$171,207,015	$147,475,826
• Average salary	52,357	48,720

Important information about actuarial valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – 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.

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

Input Item	Description
Plan provisions	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.
Member information	An actuarial valuation for a plan is based on data provided to the actuary by the Fund staff. 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.
Financial information	Part of the cost of a plan will be paid from existing assets — the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, typically reported by the Fund staff. A snapshot as of a single date may not be an appropriate value for determining a single year's contribution requirement, especially in volatile markets. The Fund staff uses an "actuarial value of assets" that differs from fair value to gradually reflect year-to-year changes in the fair value of assets in determining the contribution requirements.
Actuarial assumptions	In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan members 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 members 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.

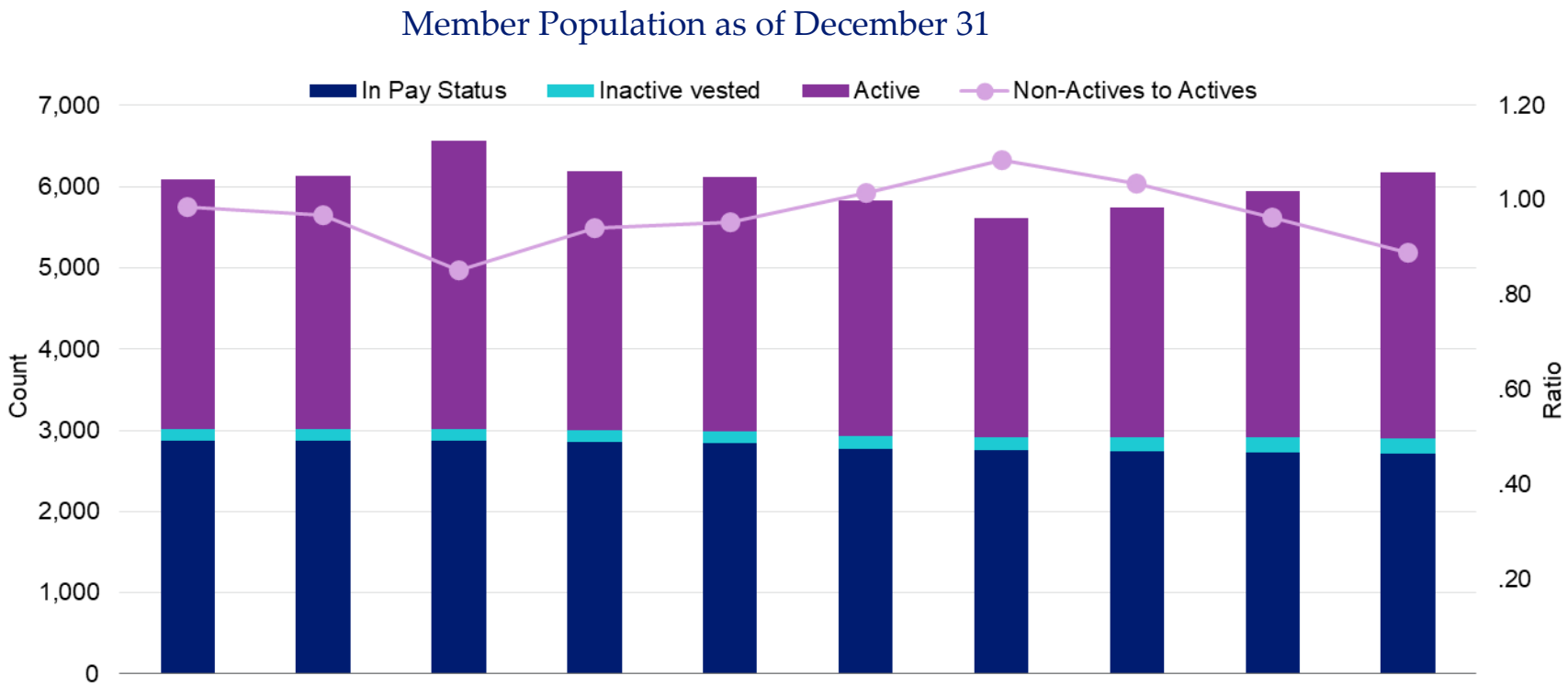
Section 1: Actuarial Valuation Summary

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 Board. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement at a specific date — it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted.
- If the 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 and is not acting as a fiduciary to the Fund. The valuation is based on Segal's understanding of applicable guidance in these areas and of the Fund's provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.
- While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.
- Segal's report shall be deemed to be final and accepted by the Board upon delivery and review. Trustees should notify Segal immediately of any questions or concerns about the final content.

Section 2: Actuarial Valuation Results

Membership information



Legend	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
In Pay Status[1]	2,876	2,870	2,876	2,854	2,843	2,775	2,752	2,745	2,730	2,705
Inactive Vested[2]	145	149	150	145	147	158	169	173	187	201
Active	3,063	3,114	3,543	3,187	3,132	2,890	2,694	2,818	3,027	3,270
Ratio	0.99	0.97	0.85	0.94	0.95	1.01	1.08	1.04	0.96	0.89

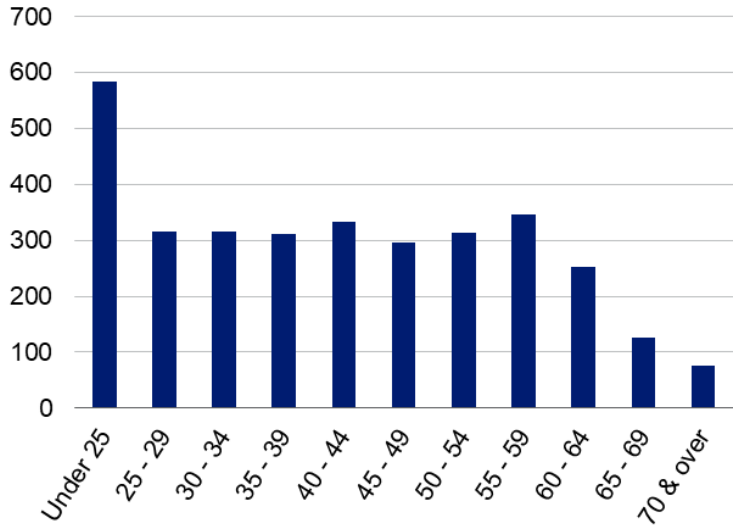
[1] Excludes QILDROs.
[2] Excludes terminated members due a refund of employee contributions.

Active members

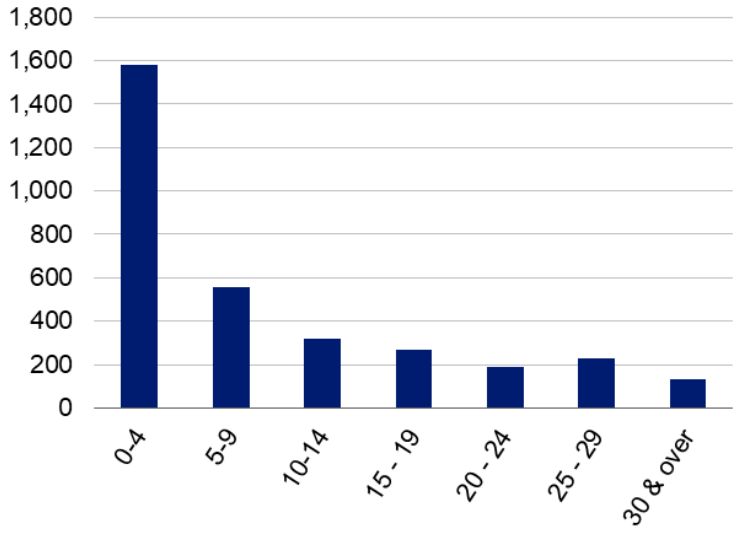
Demographic Data	December 31, 2024	December 31, 2023	Change
Active members	3,270	3,027	8.0%
Average age	42.0	42.7	-0.7
Average years of service	9.2	9.8	-0.6
Average salary	$52,357	$48,720	7.5%

Distribution of Active Members as of December 31, 2024

Actives by Age



Actives by Years of Service



Inactive members

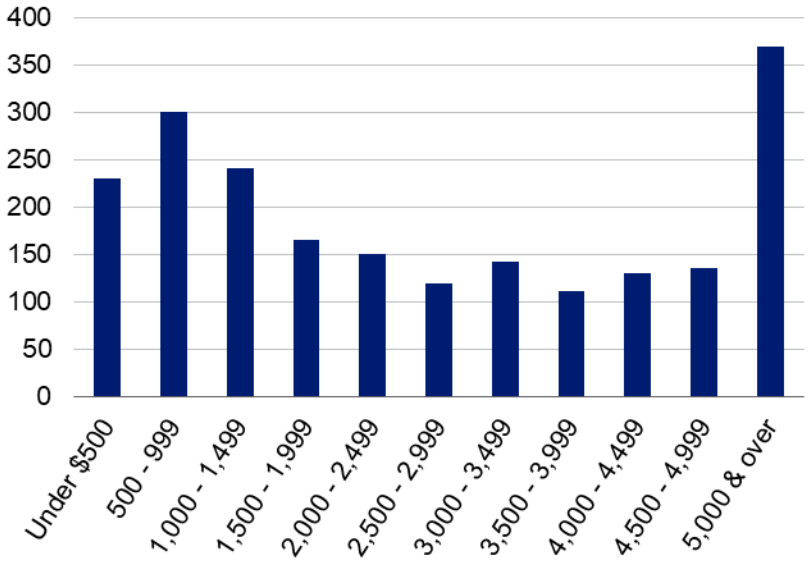
- In this year's valuation, there were 201 inactive members with a vested right to a deferred or immediate vested benefit, compared to 187 in the prior valuation. In addition, there were 5,378 inactive members entitled to a return of their employee contributions, compared to 5,237 in the prior valuation.

Retired members and beneficiaries

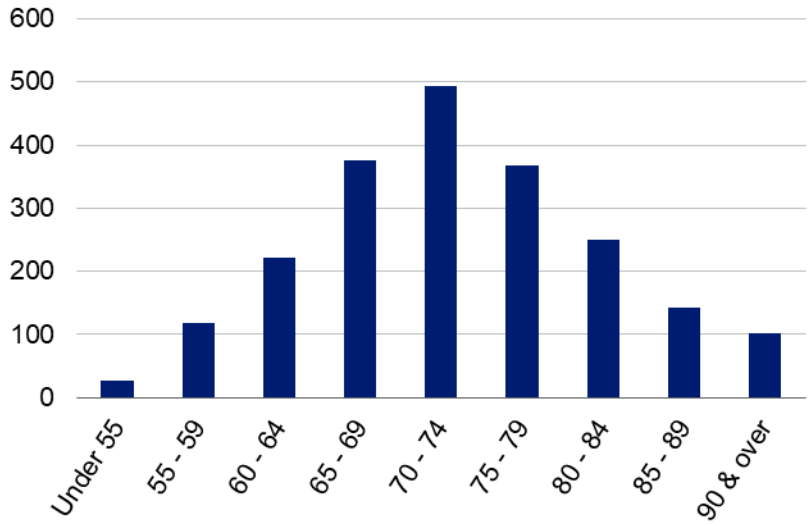
Demographic Data	December 31, 2024	December 31, 2023	Change
Retired members[1]	2,097	2,113	-0.8%
Average age	73.0	72.8	0.2
Average monthly amount	$2,840	$2,756	3.0%
Beneficiaries[2]	608	617	-1.5%
Total monthly amount	$6,966,280	$6,836,919	1.9%

Distribution of Retired Members as of December 31, 2024

By Monthly Amount



By Age



[1] Excludes QILDROs
[2] Includes 3 and 2 dependent children in 2023 and 2024, respectively.

Financial information

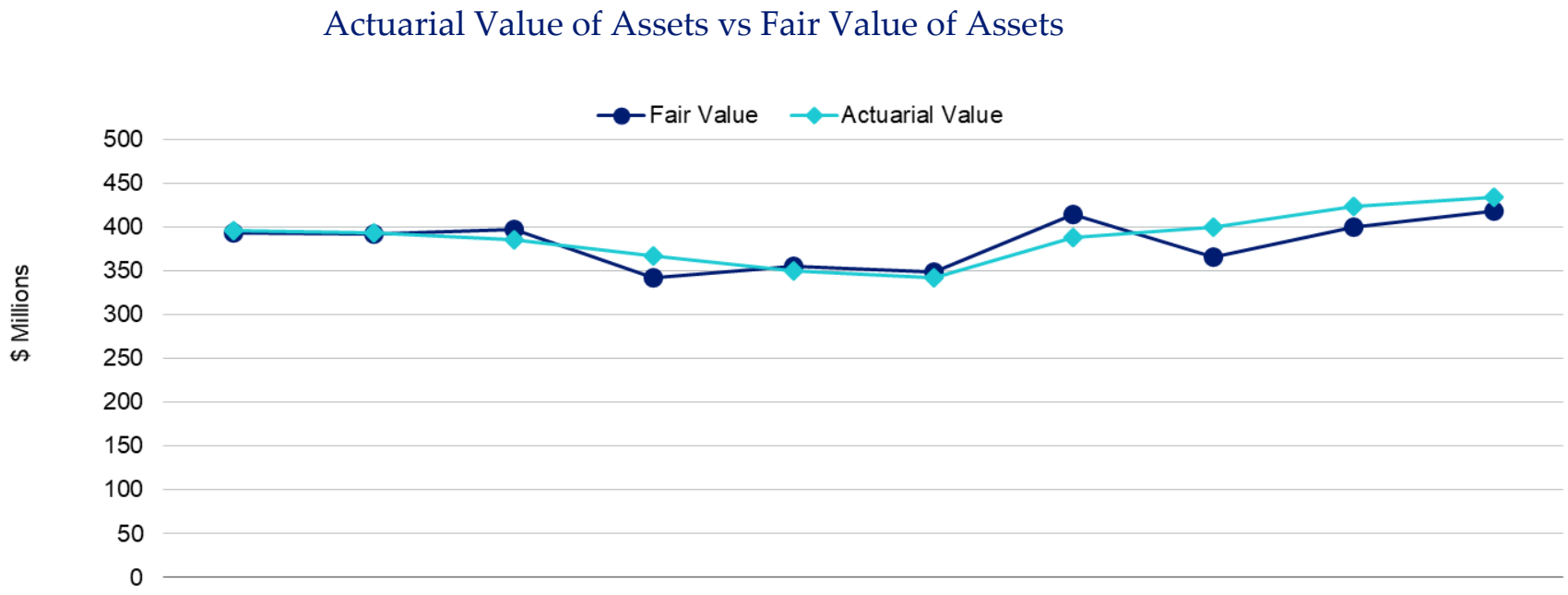
It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to fair value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. The amount of the adjustment to recognize fair value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

Determination of Actuarial Value of Assets for Years Ended December 31

	Item			2024		2023
1.	Actuarial value of assets as of prior valuation date			$423,327,172		$399,555,117
2.	Employer and employee contributions and other income			76,163,445		84,206,745
3.	Benefits and expenses			88,092,471		87,533,603
4.	Expected investment income			29,215,386		27,852,418
5.	Total investment income, including income for securities lending			30,283,623		37,104,806
6.	Investment gain/(loss): (5) − (4)			1,068,237		9,252,388
7.	Expected actuarial value of assets: (1) + (2) − (3) + (4)			440,613,532		424,080,677
8.	Calculation of recognized return	Original Amount[1]	Percent Recognized	Amount recognized	Percent Recognized	Amount recognized
	a. Year ended December 31, 2024	$1,068,237	20%	$213,647		
	b. Year ended December 31, 2023	9,252,388	20%	1,850,478	20%	$1,850,478
	c. Year ended December 31, 2022	-71,728,927	20%	-14,345,785	20%	-14,345,785
	d. Year ended December 31, 2021	27,823,201	20%	5,564,640	20%	5,564,640
	e. Year ended December 31, 2020	4,006,341	20%	801,268	20%	801,268
	f. Year ended December 31, 2019	26,879,470	0%	0	20%	5,375,894
	g. Total recognized return			-5,915,752		-753,505
9.	**Actuarial value of assets as of current valuation date: (7) + (8g)**			**$434,697,780**		**$423,327,172**
10.	Actuarial value as a percentage of fair value:			104.00%		105.93%

[1] Total return minus expected return on actuarial value

Asset history for years ended December 31

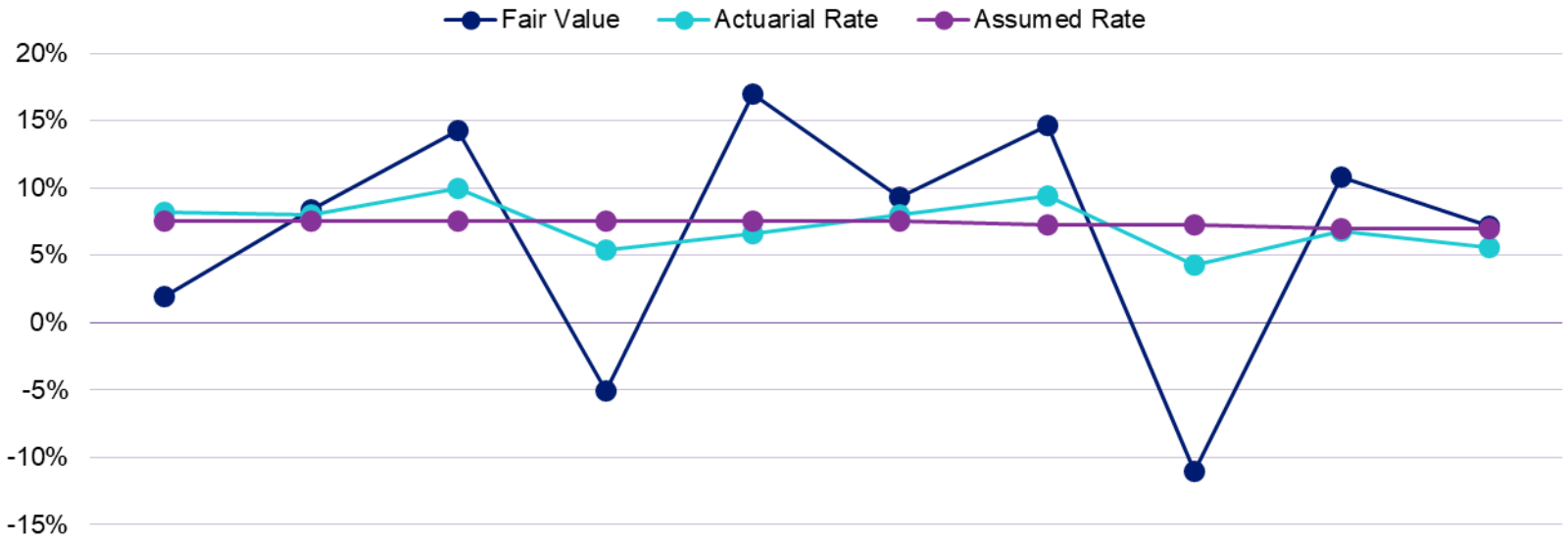


Legend	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Actuarial value[1]	$395.65	$393.60	$385.42	$366.81	$349.96	$342.13	$388.16	$399.56	$423.33	$417.98
Fair value[1]	393.16	391.70	397.65	342.26	354.56	348.29	414.66	365.85	399.62	434.70
Ratio	1.01	1.00	0.97	1.07	0.99	0.98	0.94	1.09	1.06	1.04

[1] In $ millions

Historical investment returns

Fair Value and Actuarial Rates of Return for Years Ended December 31



Legend	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Fair value rate[1]	1.9%	8.4%	14.2%	-5.1%	17.0%	9.3%	14.6%	-11.0%	10.8%	7.2%
Actuarial rate[2]	8.2%	8.0%	10.0%	5.4%	6.6%	8.0%	9.4%	4.3%	6.8%	5.6%
Assumed rate	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.25%	7.25%	7.00%	7.00%

Average Rates of Return	Actuarial Value	Fair Value
Most recent five-year average return:	5.9%	6.8%
Most recent ten-year average return:	6.4%	7.2%

[1] As determined by Investment Consultant
[2] As determined by Segal

Actuarial experience

Assumptions should consider actual experience and should be based on reasonable expectations for the future.

Each year actual experience is compared to that projected by the assumptions. Differences are reflected in the actuarial valuation.

Assumptions are not changed if experience is believed to be a short-term development that will not continue over the long term. On the other hand, if experience is expected to continue, assumptions are changed.

Actuarial Experience for Year Ended December 31, 2024

	Source	Amount
1.	Loss from investments	-$5,915,752
2.	Gain from administrative expenses	186,772
3.	Loss from other experience	-15,372,128
4.	**Net experience loss: 1 + 2 + 3**	**-$21,101,108**

Investment experience

Actuarial planning is long term. The obligations of a pension plan are expected to continue for the lifetime of all its members.

The assumed long-term rate of return of 7.00% considers past experience, the asset allocation policy of the Board, and future expectations.

Investment Experience
Year Ended December 31, 2024

	Item	Actuarial Value
1.	Net investment income	$23,299,634
2.	Average value of assets	417,362,659
3.	Rate of return: **1 ÷ 2**	5.58%
4.	Assumed rate of return	7.00%
5.	Expected investment income: **2 x 4**	29,215,386
6.	**Investment loss: 1 – 5**	**-$5,915,752**

Non-investment experience

Administrative expenses

Administrative expenses for the year ended December 31, 2024, totaled $2,105,786, as compared to the assumption of $2,210,679. This resulted in an experience gain of $186,772 for the year, when adjusted for interest.

Other experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- Mortality experience (more or fewer than expected deaths)
- The extent of turnover among members
- Retirement experience (earlier or later than projected)
- The number of disability retirements (more or fewer than projected)
- Salary increases (greater or smaller than projected)

The net loss from this other experience for the year ended December 31, 2024 amounted to $15,372,128, which is 1.2% of the actuarial accrued liability.

Liability Changes Due to Demographic Experience for Year Ended December 31,

Liability Change	2024	2023	2022	2021	2020
Net turnover	-$4,614,032	-$2,427,712	-$2,371,665	-$1,793,617	-$2,248,976
Experience among retired members and beneficiaries related to mortality	893,954	4,907,732	4,668,049	4,262,544	6,113,208
Retirement from active status	-467,905	-2,016,289	-4,562,715	-4,588,264	-1,209,835
Salary/service increase for continuing actives	-8,464,402	-5,056,625	-794,581	3,089,510	879,676
Other (including active mortality and inactive retirements)	-2,719,743[1]	-837,485	1,894,561	-1,313,757	-1,611,387
Net gain/(loss)	**-$15,372,128**	**-$5,430,379**	**-$1,166,351**	**-$343,584**	**$1,922,686**

[1] Includes $3.7 million loss due to Entry Age Normal actuarial cost method methodology update discussed in valuation highlights.

Actuarial assumptions

- There were no changes in actuarial assumptions since the prior valuation.

Plan provisions

- There were no changes in plan provisions since the prior valuation.

Unfunded actuarial accrued liability

Development of Unfunded Actuarial Accrued Liability for Year Ended December 31, 2024

	Component	Amount
1.	Unfunded/(overfunded) actuarial accrued liability at beginning of year	$846,471,228
2.	Normal cost at beginning of year	22,881,372
3.	Total contributions	-76,163,073
4.	Interest on 1, 2 & 3	58,440,966
5.	Expected unfunded actuarial accrued liability	851,630,494
6.	Changes due to:	
	a. Net experience (gain)/loss	$21,101,108
	b. Assumptions	0
	c. Plan provisions	0
	d. Total changes	**$21,101,108**
7.	**Unfunded actuarial accrued liability at end of year**	**$872,731,602**

Actuarially determined contribution

The actuarially determined contribution is equal to the employer normal cost payment and a payment on the unfunded actuarial accrued liability. This amount is used as the basis by which to compare the statutorily-required contribution against for a sense of adequacy. As of December 31, 2024, the actuarially determined contribution is $83,030,259, or 45.93% of projected payroll.

The Board sets the funding policy used to calculate the actuarially determined contribution based on a closed amortization period of 30 years, which ends on December 31, 2042. As of December 31, 2024, there are 18 years remaining on this schedule.

Actuarially Determined Contribution

	Component	2025 Amount	2025 Percent of Projected Payroll	2024 Amount	2024 Percent of Projected Payroll
1.	Total normal cost	$24,474,160	13.54%	$20,670,693	13.28%
2.	Administrative expenses	2,114,138	1.17%	2,210,679	1.42%
3.	Expected employee contributions	-17,449,107	-9.65%	-14,805,084	-9.52%
4.	Employer normal cost: (1) + (2) + (3)	9,139,191	5.06%	8,076,288	5.19%
5.	Employer normal cost, adjusted for timing	9,451,862	5.23%	8,352,596	5.37%
6.	Actuarial accrued liability	1,307,429,382		1,269,798,400	
7.	Actuarial value of assets	434,697,780		423,327,172	
8.	Unfunded actuarial accrued liability: (6) – (7)	872,731,602		846,471,228	
9.	Payment on unfunded actuarial accrued liability, adjusted for timing	73,578,397	40.70%	68,882,276	44.27%
10.	**Actuarially determined contribution: (5) + (9)**	**$83,030,259**	**45.93%**	**$77,234,872**	**49.64%**
11.	Projected payroll	$180,794,325		$155,596,223	

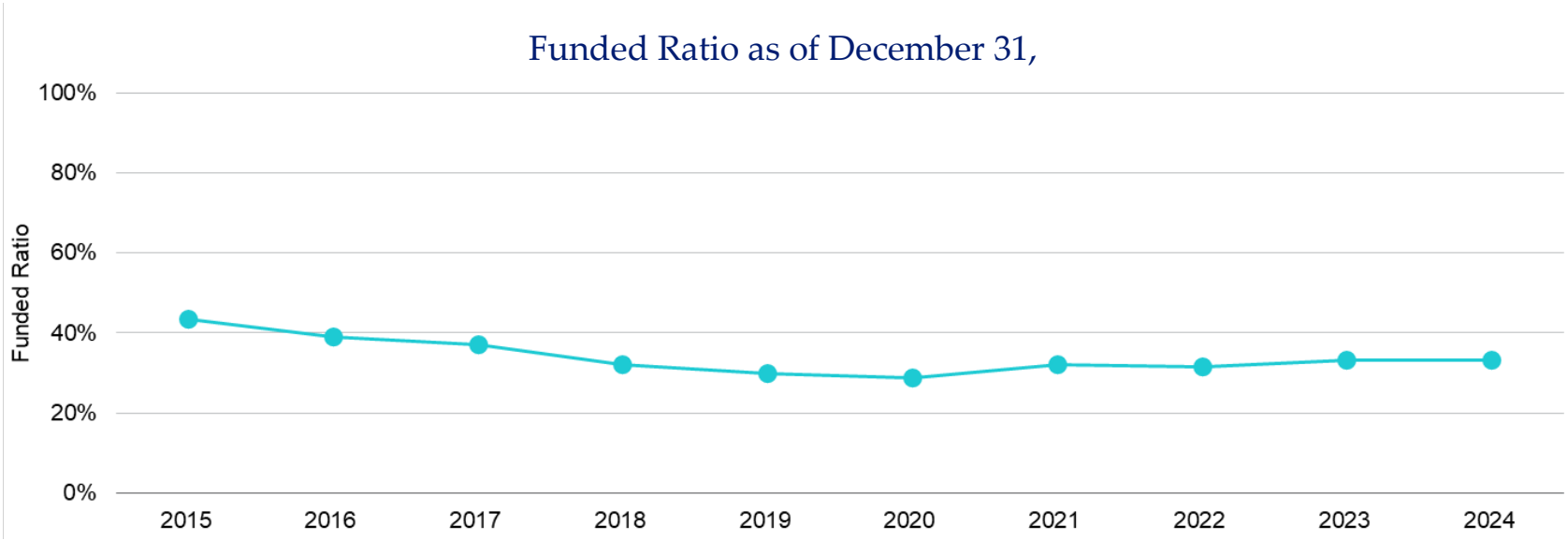
Reconciliation of actuarially determined contribution

Reconciliation of Actuarially Determined Contribution from December 31, 2023 to December 31, 2024

Step	Amount	Percent of Projected Payroll
Actuarially determined contribution as of December 31, 2023	$77,234,872	49.64%
Changes in actuarially determined contribution due to:		
• Effect of plan amendment(s)	0	0.00%
• Effect of expected change in amortization payment due to payroll growth	1,722,057	1.11%
• Effect of change in administrative expense assumption	-99,845	-0.06%
• Effect of change in other actuarial assumptions	0	0.00%
• Effect of contributions (more)/less than actuarially determined contribution	1,386,866	0.89%
• Effect of investment (gain)/loss	477,771	0.31%
• Effect of other gains and losses on accrued liability	1,226,407	0.79%
• Net effect of other changes (including change in normal cost)	1,082,131	0.70%
• **Total change**	**$5,795,387**	**3.72%**
Total change in percentage due to payroll change		-7.43%
Actuarially determined contribution as of December 31, 2024	**$83,030,259**	**45.93%**

Schedule of funding progress through December 31, 2024

Actuarial Valuation Date as of December 31,	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) – (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) – (a)] / (c)
2015	$395,652,106	$910,260,360	$514,608,254	43.47%	$122,382,584	420.49%
2016	393,604,997	1,005,493,093	611,888,096	39.15%	121,126,918	505.16%
2017	385,419,506	1,039,279,444	653,859,938	37.09%	135,315,008	483.21%
2018	366,806,612	1,142,297,965	775,491,353	32.11%	133,112,100	582.59%
2019	349,960,428	1,170,602,980	820,642,552	29.90%	139,204,051	589.52%
2020	342,131,743	1,190,365,644	848,233,901	28.74%	138,942,498	610.50%
2021	388,163,499	1,211,991,973	823,828,474	32.03%	134,515,373	612.44%
2022	399,555,117	1,269,016,883	869,461,766	31.49%	136,917,648	635.03%
2023	423,327,172	1,269,798,400	846,471,228	33.34%	144,629,413	585.27%
2024	434,697,780	1,307,429,382	872,731,602	33.25%	168,925,363	516.64%



History of employer contributions

History of Employer Contributions
Actuarially Determined Employer Contribution (ADC) versus Actual Employer Contribution (AEC)

Year Ended December 31	ADC Amount	ADC as a Percentage of Projected Payroll	AEC Amount	AEC as a Percentage of Projected Payroll	Percent Contributed
2015	36,273,994	29.1%	30,588,976	24.5%	84.3%
2016	37,130,268	28.3%	30,890,241	23.5%	83.2%
2017	45,253,238	34.8%	20,920,614	16.1%	46.2%
2018	50,929,734	36.3%	27,638,402	19.7%	54.3%
2019	61,887,790	45.4%	27,682,089	20.3%	44.7%
2020	67,297,212	47.4%	33,939,927	23.9%	50.4%
2021	70,492,027	50.2%	83,349,261	59.3%	118.2%
2022	71,021,948	52.2%	67,128,978	49.4%	94.5%
2023	77,592,063	55.2%	70,405,922	50.1%	90.7%
2024	77,592,063	49.9%	59,697,606	38.4%	76.6%
2025	83,030,259	45.9%	—	—	—

Low-Default-Risk Obligation Measure (LDROM)

In December 2021, the Actuarial Standards Board issued a revision of Actuarial Standard of Practice No. 4 (ASOP 4) "Measuring Pension Obligations and Determining Pension Plan Costs or Contributions". One of the revisions to ASOP 4 requires the disclosure of a Low-Default-Risk Obligation Measure (LDROM) when performing a funding valuation. The LDROM presented in this report is calculated using the same methodology and assumptions used to determine the Actuarial Accrued Liability (AAL) used for funding, except for the discount rate. The LDROM is required to be calculated using "a discount rate…derived from low-default-risk fixed income securities whose cash flows are reasonably consistent with the pattern of benefits expected to be paid in the future."

The LDROM is a calculation assuming a plan's assets are invested in an all-bond portfolio, generally lowering expected long-term investment returns. The discount rate selected and used for this purpose is the Bond Buyer General Obligation 20-year Municipal Bond Index Rate, published at the end of each week. The last published rate in December of the measurement period, by The Bond Buyer (www.bondbuyer.com), is 4.08% for use effective December 31, 2024. This is the rate used to determine the discount rate for valuing reported public pension plan liabilities in accordance with Governmental Accounting Standards when plan assets are projected to be insufficient to make projected benefit payments, and the 20-year period reasonably approximates the duration of plan liabilities. The LDROM is not used to determine a plan's funded status or Actuarially Determined Contribution. The Fund's expected return on assets, currently 7.00%, is used for these calculations.

As of December 31, 2024, the LDROM for the Fund is $1,811,044,137. The difference between the Fund's AAL of $1,307,429,382 and the LDROM can be thought of as the increase in the AAL if the entire portfolio were invested in low-default-risk securities. Alternatively, this difference could also be viewed as representing the expected savings from investing in the plan's diversified portfolio compared to investing only in low-default-risk securities.

ASOP 4 requires commentary to help the intended user understand the significance of the LDROM with respect to the funded status of the plan, plan contributions, and the security of member benefits. In general, if plan assets were invested exclusively in low-default-risk securities, the funded status would be lower and the actuarially determined contribution would be higher. While investing in a portfolio with low-default-risk securities may be more likely to reduce investment volatility and the volatility of employer contributions, it also may be more likely to result in higher employer contributions or lower benefits.

Risk

The actuarial valuation results are dependent on a single set of assumptions; however, there is a risk that emerging results may differ significantly as actual experience proves to be different from the current assumptions.

We have not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the Fund's future financial condition but have included a brief discussion of some risks that may affect the Fund.

- Economic and Other Related Risks. Potential implications for the Fund due to the following economic effects (that were not reflected as of the valuation date) include:
  - Volatile financial markets and investment returns lower than assumed
  - High inflationary environment impacting salary increases and COLAs
  - Lingering direct and indirect effects of the COVID-19 pandemic
- Investment Risk (the risk that returns will be different than expected)

  If the actual return on fair value for the prior plan year were 1% different (either higher or lower), the unfunded actuarial liability would change by 0.45%, or about $3.9 million, disregarding the asset smoothing method.

  Since the Fund's assets are much larger than contributions, investment performance may create volatility in the actuarially determined contribution requirements. For example, for the prior plan year, if the actual return on fair value were 1% different, the actuarially determined contribution would increase or decrease by $0.3 million, disregarding the asset smoothing method.

  The fair value rate of return over the last 10 years has ranged from a low of -11.0% to a high of 17.0%.
- Longevity Risk (the risk that mortality experience will be different than expected)

  The actuarial valuation includes an expectation of future improvement in life expectancy. Emerging plan experience that does not match these expectations will result in either an increase or decrease in the actuarially determined contribution.
- Contribution Risk (the risk that actual contributions will be different from actuarially determined contribution)

  The Fund's funding policy calculates an actuarially determined contribution that is equal to the employer's normal cost and an amortization payment according to a schedule sufficient to pay down unfunded actuarial liability over time. If this policy were adhered to, contribution risk is negligible.

  Employer contribution requirements are set by statute and were increased with the enactment of P.A. 102-0263, effective August 6, 2021. Employer contributions to the Fund under P.A. 102-0263 target 100% funding of the total actuarial accrued liability of the Fund over a 35-year period ending December 31, 2057. Under this revised approach, if employer contribution requirements are adhered to, contribution risk would also be negligible.

Section 2: Actuarial Valuation Results

- Demographic Risk (the risk that member experience will be different than assumed)

  Examples of this risk include:

  – Actual retirements occurring earlier or later than assumed. The value of retirement plan benefits is sensitive to the rate of benefit accruals and any early retirement subsidies that apply.

  – More or less active member turnover than assumed.

  – Individual salary increases higher or lower than assumed.

- There are external factors including legislative or financial reporting changes that could impact the Fund's funding and disclosure requirements. While we do not assume any changes in such external factors, it is important to understand that they could have significant consequences for the Fund.

- Actual Experience Over the Last Ten Years

  Past experience can help demonstrate the sensitivity of key results to the Fund's actual experience. Over the past ten years:

  – The non-investment gain(loss) for a year has ranged from a loss of $15.2 million to a gain of $4.7 million.

  – The investment gain(loss) on an actuarial value of assets-basis for a year has ranged from a loss of $19.5 million to a gain of $23.3 million.

Plan Year Ended	Investment Gain/(Loss)	All Other Gains/(Losses)
2015	-$19,526	-$529
2016	2,566	4,711
2017	23,346	-3,051
2018	-7,821	-3,354
2019	-2,267	-9,078
2020	2,439	1,911
2021	7,491	-415
2022	-11,524	-1,393
2023	-754	-5,560
2024	-5,916	-15,185

$ in thousands

  – The funded percentage on the actuarial value of assets has ranged from a low of 28.7% to a high of 43.7%.

Section 2: Actuarial Valuation Results

Maturity Measures

- As pension plans mature, the cash needed to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the Fund's asset allocation is aligned to meet emerging pension liabilities.
- Currently the Fund has a non-active to active member ratio of 0.89.
- For the prior year, benefits and expenses paid were $11.9 million more than contributions received. Funds with high levels of negative cash flows may have a need for a larger allocation to income generating assets, which can create a drag on investment return.

Section 3: Supplemental Information

Exhibit A: Table of plan demographics

Demographic Data	Year Ended December 31, 2024	Year Ended December 31, 2023	Change From Prior Year
Active members in valuation:			
• Number	3,270	3,027	8.0%
• Average age	42.0	42.7	-0.7
• Average years of service	9.2	9.8	-0.6
• Total salary supplied by Fund	$171,207,015	$147,475,826	16.1%
• Average salary	52,357	48,720	7.5%
• Total active vested members with at least 10 years of service	1,171	1,190	-1.6%
Inactive members:			
• Inactive vested members	201	187	7.5%
• Inactive nonvested members due a refund	5,378	5,237	2.7%
Retired members:			
• Number in pay status[1]	2,097	2,113	-0.8%
• Average age	73.0	72.8	0.2
• Average monthly benefit	$2,840	$2,756	2.7%
Beneficiaries:			
• Number in pay status	608	617	-1.5%
• Average age[2]	79.1	79.1	0.0
• Average monthly benefit[2]	$1,668	$1,617	3.2%
Total number of members:	**11,554**	**11,181**	**3.3%**

[1] Excluding QILDROs
[2] Excluding child beneficiaries

Exhibit B: Members in active service as of December 31, 2024 by age, years of service, and average salary provided by the Fund

Years of Service

Age	Total	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	583	561	22							
	$27,377	$27,122	$33,891							
25 - 29	315	205	106	4						
	$38,979	$35,954	$44,267	$53,887						
30 - 34	316	159	106	49	2					
	$49,760	$40,940	$58,209	$59,989	$52,458					
35 - 39	312	119	72	69	48	4				
	$58,158	$45,239	$63,072	$68,087	$67,293	$73,172				
40 - 44	333	131	46	37	58	50	11			
	$59,429	$38,564	$75,674	$75,071	$69,304	$72,678	$75,075			
45 - 49	296	104	46	46	38	23	36	3		
	$65,727	$49,828	$55,883	$89,670	$67,227	$87,447	$76,950	$80,532		
50 - 54	313	102	47	33	37	24	53	17		
	$65,824	$43,303	$64,121	$79,520	$68,576	$86,876	$80,356	$98,047		
55 - 59	346	97	42	26	44	43	56	32	5	1
	$62,612	$47,577	$60,403	$68,899	$57,923	$68,342	$78,771	$73,617	$72,949	$101,712
60 - 64	252	68	41	26	21	22	41	17	13	3
	$62,958	$41,336	$71,479	$56,664	$62,900	$78,405	$69,961	$88,952	$78,372	$68,522
65 - 69	127	24	16	17	12	13	19	11	4	11
	$58,646	$36,018	$47,780	$71,849	$64,597	$56,829	$62,341	$66,136	$62,587	$83,771
70 & over	77	9	12	10	8	8	15	7	5	3
	$55,489	$33,714	$43,285	$42,460	$54,976	$60,151	$59,133	$93,193	$74,637	$63,885
Total	**3,270**	**1,579**	**556**	**317**	**268**	**187**	**231**	**87**	**27**	**18**
	$52,357	**$36,557**	**$57,493**	**$70,316**	**$65,414**	**$74,366**	**$74,485**	**$82,255**	**$74,337**	**$78,912**

Exhibit C: History of active member valuation data

Year Ended December 31	Active Members	Percent Increase	Annual Salaries	Percent Increase	Average Salary	Percent Increase
2015	3,063	3.03%	$126,294,812	4.92%	$41,232	1.83%
2016	3,114	1.67%	124,502,908	-1.42%	39,982	-3.03%
2017	3,543	13.78%	134,258,328	7.84%	37,894	-5.22%
2018	3,187	-10.05%	129,923,175	-3.23%	40,767	7.58%
2019	3,132	1.73%	136,105,381	4.76%	43,456	6.60%
2020	2,890	-7.73%	135,162,943	-0.69%	46,769	7.62%
2021	2,694	-6.78%	131,000,642	-3.08%	48,627	3.97%
2022	2,818	4.60%	134,679,715	2.81%	47,793	-1.72%
2023	3,027	7.42%	147,475,826	9.50%	48,720	1.94%
2024	3,270	8.03%	171,207,015	16.09%	52,357	7.46%

Average Increase/(Decrease)	Active Members	Annual Salaries	Average Salary
Last 5 Years:	1.11%	4.93%	3.85%
Last 10 years:	1.22%	3.75%	2.70%

Exhibit D: Reconciliation of member data

	Active Members	Inactive Members	Retired Members	Beneficiaries	Total
Number as of December 31, 2023	**3,027**	**5,424**	**2,113**	**617**	**11,181**
New active members	571	N/A	N/A	N/A	571
Terminations	-207	207	-	-	-
Retirements	-54	-18	72	N/A	-
New disabilities	N/A	N/A	N/A	N/A	-
Died with beneficiary	-2	-1	-29	32	-
Died without beneficiary	-5	-8	-59	-41	-113
Refunds	-73	-23	-	-	-96
Rehire	13	-13	-	-	-
Data adjustments	-	11	-	-	11
Number as of December 31, 2024	**3,270**	**5,579**	**2,097**	**608**	**11,554**

Exhibit E: Schedule of pensioners and beneficiaries added to and removed from rolls

Fiscal Year	Number Added to Rolls	Annual Allowances Added to Rolls	Number Removed from Rolls	Annual Allowances Removed from Rolls	Number of Rolls – End of Year[1]	Annual Allowances of Number of Rolls – End of Year	Increase in Average Annual Allowances	Average Annual Allowances
2015	94	$1,823,238	106	$2,271,591	2,864	$67,823,470	-0.7%	$23,681
2016	126	5,283,834	133	2,711,190	2,857	70,396,114	4.0%	24,640
2017	107	3,628,199	104	1,952,677	2,860	72,071,636	2.3%	25,200
2018	135	5,446,939	153	2,967,901	2,842	74,550,674	4.1%	26,232
2019	128	4,578,087	140	3,174,168	2,830	75,954,593	2.3%	26,839
2020	80	3,824,254	146	3,171,408	2,764	76,607,439	3.3%	27,716
2021	91	4,194,340	112	2,428,607	2,743	78,373,172	3.1%	28,572
2022	109	4,563,266	115	2,443,435	2,737	80,493,003	2.9%	29,409
2023	99	4,260,030	109	2,710,004	2,727	82,043,029	2.3%	30,085
2024	77	3,895,443	101	2,343,108	2,703	83,595,364	2.8%	30,927

[1] Does not include child beneficiaries receiving a pension or QILDROs

Exhibit F: Summary statement of income and expenses on a fair value basis

Income and Expenses for Years Ended December 31

Item	2024	2023
Net assets at fair value at the beginning of the year	**$399,623,396**	**$365,845,448**
Contribution and other income:		
• Employer contributions	$59,697,606	$70,405,922
• Employee contributions	16,465,467	13,800,598
• Less administrative expenses	-2,105,786	-2,202,778
• **Net contribution income**	**$74,057,287**	**$82,003,742**
• Securities lending income	$56,733	$26,039
• Other income	372	225
Investment income:		
• Interest, dividends, and partnership income	$5,947,409	5,894,996
• Asset appreciation	26,459,386	32,939,122
• Less investment expenses	-2,179,905	-1,755,351
• **Net investment income**	**$30,226,890**	**$37,078,767**
Less benefit payments:		
• Benefit payments and refunds	-$85,986,685	-$85,330,825
• **Net benefit payments and refunds**	**-$85,986,685**	**-$85,330,825**
Change in fair value of assets	**$18,354,597**	**$33,777,948**
Net assets at fair value at the end of the year	**$417,977,993**	**$399,623,396**

Exhibit G: Summary statement of plan assets

Statement of Plan Assets as of December 31

Item	2024	2023
Cash and accounts receivable:		
• Accounts receivable	$26,472,519	$25,847,449
• **Total cash and accounts receivable**	**$26,472,519**	**$25,847,449**
Investments at fair value:		
• Collective investment funds	$162,979,828	$151,160,590
• Bonds	66,597,674	24,317,437
• Common and preferred stocks	30,139,239	52,224,030
• Real estate	23,374,665	24,376,061
• Private equity partnerships	39,742,041	20,812,388
• Hedged equity	4,526,838	31,367,942
• Infrastructure	55,888,209	52,928,055
• Short-term investments	2,236,032	11,624,191
• **Total investments at fair value**	**$385,484,526**	**$368,810,694**
• **Other assets:**		
• Invested securities lending collateral	$31,377,556	$10,206,157
• Prepaid annuity benefits	5,992,850	5,904,035
• Net furniture and fixtures	1,563,604	1,511,923
• Prepaid expenses	83,171	59,284
• **Total other assets**	**$39,017,181**	**$17,681,399**
• **Total assets**	**$450,974,226**	**$412,339,542**

Section 3: Supplemental Information

Item	2024	2023
Accounts payable:		
• Accounts payable	-$314,418	-$434,565
• Accrued benefits and member contributions payable	-114,960	-866,976
• Securities lending collateral	-31,377,556	-10,206,157
• Unclaimed Checks	-299,304	-226,691
• Lease Liability	-889,995	-981,757
• **Total accounts payable**	**-$32,996,233**	**-$12,716,146**
Net assets at fair value	**$417,977,993**	**$399,623,396**
Net assets at actuarial value	**$434,697,780**	**$423,327,172**

Exhibit H: Development of the fund through December 31, 2024

Year Ended December 31	Employer Contributions	Employee Contributions	Net Investment Return[1]	Admin. Expenses	Benefit Payments	Fair Value of Assets at Year-End	Actuarial Value of Assets at Year-End	Actuarial Value as a Percent of Fair Value
2015	$30,588,976	$12,368,636	$31,067,518	$1,533,700	$70,602,016	$393,155,338	$395,652,106	100.6%
2016	30,890,241	12,246,115	30,432,110	1,537,699	74,077,876	391,698,922	393,604,997	100.5%
2017	20,920,614	13,675,292	37,038,766	1,682,136	78,138,027	397,648,758	385,419,506	96.9%
2018	27,638,402	12,125,457	19,651,105	1,501,039	76,526,820	342,255,873	366,806,612	107.2%
2019	27,682,089	12,664,855	22,886,182	1,528,861	78,550,449	354,556,288	349,960,428	98.7%
2020	33,939,927	12,634,900	26,564,866	1,598,370	79,370,008	348,294,515	342,131,743	98.2%
2021	83,349,261	12,226,998	32,776,353	1,718,012	80,602,844	414,658,650	388,163,499	93.6%
2022	67,128,978	12,669,678	16,435,102	2,002,020	82,840,120	365,845,448	399,555,117	109.2%
2023	70,405,922	13,800,598	27,099,138	2,202,778	85,330,825	399,623,396	423,327,172	105.9%
2024	59,697,606	16,465,467	23,300,006	2,105,786	85,986,685	417,977,993	434,697,780	104.0%

[1] On an actuarial basis, net of investment fees, and includes other income

Exhibit I: Summary of actuarial valuation results

The valuation was made with respect to the following data supplied to us:

1.	Pensioners as of the valuation date (including 606 beneficiaries and 2 dependent children, excluding 21 QILDROs)		2,705
2.	Members inactive as of the valuation date with vested rights		201
3.	Members active as of the valuation date		3,270
	Fully vested	1,171	
	Not vested	2,099	
4.	Other non-vested inactive members as of the valuation date		**5,378**

The actuarial factors as of the valuation date are as follows:

1.	Employer normal cost, including administrative expenses		$9,139,191
2.	Actuarial accrued liability		1,307,429,382
	Retirees and beneficiaries	$846,419,215	
	Inactive members with vested rights	44,828,796	
	Active members	416,181,371	
3.	Actuarial value of assets ($417,977,993 at fair value)		434,697,780
4.	**Unfunded actuarial accrued liability: (2) − (3)**		**872,731,602**
5.	**Funded ratio: (3) ÷ (2)**		**33.2%**

Exhibit J: Actuarially determined contribution split by tier

	Component	2025 Amount	2025 Percent of Projected Payroll	Tier 1 Amount	Tier 1 Percent of Projected Payroll	Tier 2 Amount	Tier 2 Percent of Projected Payroll	Tier 3 Amount	Tier 3 Percent of Projected Payroll
1.	Total normal cost	$24,474,160	13.54%	$14,570,314	17.53%	$4,458,563	9.72%	$5,445,282	10.51%
2.	Administrative expenses[1]	2,114,138	1.17%	2,017,492	2.43%	68,295	0.15%	28,351	0.05%
3.	Expected employee contributions	-17,449,107	-9.65%	-7,531,601	-9.06%	-4,164,467	-9.08%	-5,753,040	-11.10%
4.	Employer normal cost: (1) + (2) + (3)	9,139,191	5.06%	9,056,205	10.90%	362,391	0.79%	-279,406	-0.54%
5.	Employer normal cost, adjusted for timing[2]	9,451,862	5.23%	9,366,037	11.27%	374,789	0.82%	-288,965	-0.56%
6.	Actuarial accrued liability	1,307,429,382		1,247,661,078		42,235,261		17,533,043	
7.	Actuarial value of assets	434,697,780							
8.	Unfunded actuarial accrued liability: (6) – (7)	$872,731,602							
9.	Payment on unfunded actuarial accrued liability, adjusted for timing	73,578,397	40.70%						
10.	**Actuarially determined contribution: (5) + (9)**	**$83,030,259**	**45.93%**						
11.	Projected payroll	$180,794,325		$83,104,132		$45,872,495		$51,817,698	

[1] Administrative expenses are allocated by percent of accrued liability.
[2] Recommended contributions are assumed to be paid at the middle of every month.

Exhibit K: Solvency test on December 31

Item	2024	2023	2022	2021	2020
Actuarial Accrued Liability (AAL):					
Active member contributions	$171,845,893	$168,869,903	$170,509,528	$175,568,599	$174,600,431
Retirees and beneficiaries	846,419,215	837,252,527	853,075,017	814,929,192	795,731,449
Active and inactive members (employer financed)	289,164,274	263,675,970	245,432,338	221,494,182	220,033,764
Total AAL	**$1,307,429,382**	**$1,269,798,400**	**$1,269,016,883**	**$1,211,991,973**	**$1,190,365,644**
Actuarial Value of Assets (AVA)	**434,697,780**	**423,327,172**	**399,555,117**	**388,163,499**	**342,131,743**
Cumulative portion of AAL covered:					
Active member contributions	100.0%	100.0%	100.0%	100.0%	100.0%
Retirees and beneficiaries	31.1%	30.4%	26.8%	26.1%	21.1%
Active and inactive members (employer financed)	0.0%	0.0%	0.0%	0.0%	0.0%

Item	2019	2018	2017	2016	2015
Actuarial Accrued Liability (AAL):					
Active member contributions	$173,843,745	$164,316,381	$173,903,043	$172,808,623	$173,241,768
Retirees and beneficiaries	789,231,586	778,565,525	706,084,520	694,881,116	625,396,307
Active and inactive members (employer financed)	207,527,649	199,416,059	159,291,881	137,803,354	111,622,285
Total AAL	**$1,170,602,980**	**$1,142,297,965**	**$1,039,279,444**	**$1,005,493,093**	**$910,260,360**
Actuarial Value of Assets (AVA)	**349,960,428**	**366,806,612**	**385,419,506**	**393,604,997**	**395,652,106**
Cumulative portion of AAL covered:					
Active member contributions	100.0%	100.0%	100.0%	100.0%	100.0%
Retirees and beneficiaries	22.3%	26.0%	30.0%	31.8%	35.6%
Active and inactive members (employer financed)	0.0%	0.0%	0.0%	0.0%	0.0%

Exhibit L: Projection of contributions, liabilities, and assets

Based on the results of the December 31, 2024, actuarial valuation, we have projected valuation results for a 40-year period (the "projection period") commencing with Fiscal Year 2025.

For purposes of the projections, all assets, contributions, and benefit payments have been included. Our projections of contributions, liabilities, and assets are based on the actuarial assumptions, membership data and benefit provisions that were used for the regular actuarial valuation.

In order to determine projected contributions, liabilities, and assets, certain calculations needed to be made that are not normally required in a regular actuarial valuation. Benefit payout requirements, actuarial liabilities, and payroll were estimated over the projection period from 2024 through 2064 by projecting the membership of the Fund over the projection period, taking into account the impact of new entrants into the Fund over the projection period.

To make the required projections, assumptions needed to be made regarding the age and salary distribution of new entrants as well as the size of the active membership of the Fund. The assumptions regarding the profile of new entrants to the Fund were based on the recent experience of the Fund with regard to new entrants. The size of the active membership of the Fund was assumed to remain constant over the projection period. The results of our projections are shown on the following pages.

For purposes of this projection, budgeted supplemental contributions for future years are included, if applicable. It reflects a budgeted employer contribution of $59.7 million and no supplemental contribution for 2025.

Plan provisions for Tier 3 are effective December 31, 2021, per HB 417 legislation. Tier 1 and 2 member contributions are 9% and Tier 3 member contributions are 11%. Employer Contributions are Employer Normal Cost plus a 33-year closed period amortization of unfunded actuarial accrued Liability as of December 31, 2024.

Exhibit L: Projection of contributions, liabilities, and assets (continued)

Fiscal Year	Employee Contributions	Employer Contributions	Payroll	Normal Cost	Benefit Payouts	Admin. Expenses	Total Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Liability	Funded Ratio
2024							$1,307,429.4	$434,697.8	$872,731.6	33.2%
2025	$17,449.1	$59,679.4	$180,794.3	$24,474.2	$91,681.7	$2,179.5	1,330,246.2	440,857.1	889,389.1	33.1%
2026	17,403.6	63,332.4	179,243.8	24,192.4	93,633.8	2,255.8	1,352,338.3	443,364.2	908,974.0	32.8%
2027	17,391.2	65,184.8	178,113.9	23,938.2	95,411.2	2,334.7	1,373,865.3	460,389.3	913,476.0	33.5%
2028	17,415.9	66,184.8	177,368.1	23,710.4	97,363.9	2,416.4	1,394,634.4	475,701.3	918,933.1	34.1%
2029	17,461.7	67,202.1	176,791.3	23,381.5	99,152.3	2,501.0	1,414,654.4	491,025.8	923,628.5	34.7%
2030	17,544.6	68,312.9	176,623.1	23,136.8	101,415.0	2,588.5	1,433,472.1	506,457.6	927,014.5	35.3%
2031	17,600.7	69,401.0	176,178.8	22,827.9	103,605.1	2,679.1	1,451,009.7	521,945.9	929,063.8	36.0%
2032	17,679.4	70,524.4	175,982.2	22,555.6	105,556.6	2,772.9	1,467,463.8	537,631.8	929,832.0	36.6%
2033	17,786.2	71,690.6	176,080.7	22,321.9	107,323.0	2,870.0	1,482,991.5	553,813.6	929,177.9	37.3%
2034	17,882.4	72,859.1	176,085.7	22,050.1	109,050.1	2,970.4	1,497,527.6	570,553.0	926,974.6	38.1%
2035	17,957.7	74,045.5	175,907.8	21,744.7	110,728.9	3,074.4	1,511,017.0	587,927.3	923,089.7	38.9%
2036	18,063.3	75,290.6	176,058.0	21,496.1	112,786.6	3,182.0	1,523,054.9	605,675.3	917,379.6	39.8%
2037	18,155.4	76,535.1	176,045.6	21,202.8	114,551.9	3,293.4	1,533,794.5	624,107.0	909,687.5	40.7%
2038	18,298.9	77,832.1	176,572.8	20,981.4	116,309.8	3,408.6	1,543,229.5	643,381.4	899,848.1	41.7%
2039	18,457.4	79,175.1	177,233.1	20,789.0	117,989.5	3,527.9	1,551,380.7	663,697.3	887,683.4	42.8%
2040	18,620.9	80,540.9	177,951.4	20,593.7	119,453.2	3,651.4	1,558,378.5	685,375.4	873,003.1	44.0%
2041	18,798.6	81,978.7	178,859.5	20,452.7	120,600.1	3,779.2	1,564,528.3	708,923.7	855,604.6	45.3%
2042	19,017.7	83,487.6	180,186.7	20,393.3	121,508.4	3,911.5	1,570,104.8	734,831.8	835,273.0	46.8%
2043	19,257.5	85,038.1	181,758.2	20,367.3	122,131.6	4,048.4	1,575,398.9	763,619.8	811,779.2	48.5%
2044	19,526.9	86,652.0	183,658.4	20,406.3	122,712.6	4,190.1	1,580,504.0	795,624.2	784,879.9	50.3%

Note: All dollar amounts are in thousands. Actuarial Liability and asset figures are as of end of year.

Exhibit L: Projection of contributions, liabilities, and assets (continued)

Fiscal Year	Employee Contributions	Employer Contributions	Payroll	Normal Cost	Benefit Payouts	Admin. Expenses	Total Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Liability	Funded Ratio
2045	$19,793.3	$88,305.5	$185,549.0	$20,456.6	$118,589.6	$4,336.7	$1,590,287.6	$835,971.4	754,316.2	52.6%
2046	20,115.4	89,998.0	188,027.8	20,579.6	118,856.7	4,488.5	1,600,611.2	880,794.6	719,816.6	55.0%
2047	20,425.5	91,738.8	190,375.8	20,720.0	118,818.7	4,645.6	1,611,847.1	930,754.8	681,092.2	57.7%
2048	20,762.0	93,529.8	193,023.0	20,923.7	118,833.5	4,808.2	1,624,072.1	986,230.6	637,841.5	60.7%
2049	21,113.0	95,334.1	195,783.1	21,150.5	118,969.7	4,976.5	1,637,254.6	1,047,505.2	589,749.3	64.0%
2050	21,463.7	97,141.8	198,548.2	21,386.5	119,045.6	5,150.7	1,651,533.7	1,115,044.2	536,489.5	67.5%
2051	21,823.4	98,941.3	201,445.1	21,644.8	119,226.2	5,330.9	1,666,901.9	1,189,172.2	477,729.7	71.3%
2052	22,198.4	100,706.7	204,447.5	21,930.0	119,351.0	5,517.5	1,683,521.8	1,270,382.3	413,139.5	75.5%
2053	22,588.8	102,404.5	207,628.6	22,246.4	119,536.6	5,710.6	1,701,451.6	1,359,046.3	342,405.2	79.9%
2054	22,994.8	103,954.7	210,953.1	22,581.2	119,953.0	5,910.5	1,720,563.7	1,455,303.6	265,260.0	84.6%
2055	23,405.5	105,228.4	214,338.3	22,926.3	120,337.1	6,117.4	1,740,985.4	1,559,430.7	181,554.7	89.6%
2056	23,845.0	105,909.4	217,971.7	23,313.3	120,840.0	6,331.5	1,762,730.3	1,671,264.2	91,466.0	94.8%
2057	24,300.5	101,338.2	221,762.3	23,724.3	121,255.4	6,553.1	1,786,007.1	1,786,007.1	0.0	100.0%
2058	24,778.8	6,986.1	225,776.1	24,165.4	121,567.7	6,782.4	1,811,062.0	1,811,062.0	0.0	100.0%
2059	25,287.5	7,209.3	230,115.4	24,643.6	122,147.9	7,019.8	1,837,782.0	1,837,782.0	0.0	100.0%
2060	25,803.6	7,460.3	234,555.7	25,148.1	122,645.2	7,265.5	1,866,397.3	1,866,397.3	0.0	100.0%
2061	26,357.0	7,727.0	239,370.5	25,695.3	123,431.8	7,519.8	1,896,787.2	1,896,787.2	0.0	100.0%
2062	26,920.3	8,012.7	244,265.8	26,262.0	124,108.7	7,783.0	1,929,210.1	1,929,210.1	0.0	100.0%
2063	27,514.3	8,319.6	249,489.7	26,869.9	124,870.2	8,055.4	1,963,765.0	1,963,765.0	0.0	100.0%
2064	28,134.7	8,644.0	254,967.1	27,511.0	126,012.0	8,337.4	2,000,242.9	2,000,242.9	0.0	100.0%

Note: All dollar amounts are in thousands. Actuarial Liability and asset figures are as of end of year.

Section 4: Actuarial Valuation Basis

Exhibit M: Actuarial assumptions, methods and models

Rationale for assumptions

The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the Experience Review, dated February 15, 2024, for the five-year period ending December 31, 2022. Current data is reviewed in conjunction with each annual valuation. See presentation for details.

Net investment return

7.00% per year, net of investment expenses. The net investment return assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes as provided by Fund staff.

Inflation

2.50% per year

Payroll growth

2.50% per year

Salary increases

Rates of assumed salary increase are shown below.

Years of Service	Rate (%)
0 – 0.99	20.00
1 – 1.99	7.50
2 – 2.99	5.00
3 – 3.99	3.50
4 – 4.99	3.50
5 – 24.99	2.75
25+	2.50

Mortality rates

Healthy Post-Retirement Mortality – Retirees: 100% of PubG-2010 Below Median Healthy Annuitant Amount-Weighted Table, with mortality improvements projected generationally using scale MP-2021.

Healthy Post-Retirement Mortality – Beneficiaries: 110% of PubG-2010 Below Median Contingent Survivor Amount-Weighted Table, with mortality improvements projected generationally using scale MP-2021.

Pre-retirement: 100% of PubG-2010 Below Median Employee Amount-Weighted Table, with mortality improvements projected generationally using scale MP-2021.

The mortality tables specified above were determined to contain provisions appropriate to reasonably reflect future mortality improvement, based on a review of mortality experience as of the most recent experience study date.

Termination rates before retirement

Select and ultimate termination rates are based on recent experience of the Fund. Ultimate rates are applicable for members with five or more years of service.

Select Termination Rates

Years of Service	Rate (%)
0 – 0.99	25.0
1 –1.99	12.5
2 – 2.99	11.0
3 – 3.99	10.0
4 – 4.99	9.0

Ultimate Termination Rates

Age	Rate (%)	Age	Rate (%)
Under 31	6.0	38	3.4
31	5.6	39	3.2
32	5.2	40	3.0
33	4.8	41	2.8
34	4.4	42	2.6
35	4.0	43	2.4
36	3.8	44	2.2
37	3.6	45+	2.5

Retirement rates

For employees first hired prior to January 1, 2011, rates of retirement for each age from 50 to 75 were used. Sample rates are shown below.

Age	Retirement Probability with < 30 Years of Service (%)	Retirement Probability with 30+ Years of Service (%)
50	2.5	30.0
55	5.0	20.0
60	7.5	12.5
65	15.0	20.0
70	15.0	25.0
75	100.0	100.0

For employees first hired on or after January 1, 2011, but before January 1, 2022, rates of retirement for each age from 62 to 75 were used. Sample rates are shown below.

Age	Retirement Probability (%)
62	50.0
65	20.0
67	50.0
70	20.0
75	100.0

Retirement rates (continued)

For employees first hired on or after January 1, 2022, rates of retirement for each age from 60 to 75 were used. Sample rates are shown below.

Age	Retirement Probability (%)
60	50.0
65	20.0
67	50.0
70	20.0
75	100.0

Valuation of inactive vested members

The liability for an inactive member is equal to his or her existing account balance, or, if the member has at least 10 years of service then:

3.0 times the existing account balance if in Tier 1

2.5 times the existing account balance if in Tiers 2 or 3

Disability benefit valuation

Disability benefits are valued in normal cost by adding 0.2% of projected payroll.

Unknown data for members

Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.

Percent married

67% of males and 50% of females are assumed to be married.

Age of spouse

Spouses of male members are female and three years younger and spouses of female members are male and three years older.

Administrative expenses

Equal to actual expenses for the prior year, increased by 3.5% each year.

Covered Payroll

Calculated as follows: Total employee contributions less estimated total death benefit contributions, divided by the average employee contribution rate.

Actuarial value of assets

The actuarial value of assets was determined by smoothing unexpected gains and losses over a period of 5 years. The gain or loss for a year is calculated as the total investment income on the fair value of assets, minus expected investment return on the prior actuarial value of assets. The final actuarial value is equal to the expected actuarial value plus (or minus) 20% of the calculated gain (or loss) in the prior 5 years.

Actuarial cost method

The Entry Age Normal actuarial cost method is used. Under this method, a normal cost is calculated for each employee that is the level annual contribution as a percent of pay required to be made from the employee's date of hire (determined as the valuation date less service provided in the data) for as long as he/she remains active so that sufficient assets will be accumulated to provide his/her benefit. The accrued liability is the difference between the present value of all future benefits and the present value of all future normal costs.

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. Deterministic cost projections are based on a proprietary forecasting model. 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.

The blended discount rate used for calculating total pension liability is based on a model developed by our Actuarial Technology and Systems unit, comprised of both actuaries and programmers. The model allows the client team, under the supervision of the responsible actuary, control over the entry of future expected contribution income, benefit payments and administrative expenses. The projection of fiduciary net position and the discounting of benefits is part of the model.

Justification for change in actuarial assumptions

There have been no changes in actuarial assumptions since the last valuation.

Exhibit N: Summary of plan provisions

This exhibit summarizes the major provisions of the Fund included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan year

January 1 through December 31. Prior to December 31, 2012, the plan year was July 1 through June 30.

Membership

Any person employed by the Chicago Park District in a position requiring service for 6 months or more in a calendar year is required to become a member of the Fund as a condition of employment.

Tiers

Tier 1: First hired before January 1, 2011.

Tier 2: First hired on or after January 1, 2011 and prior to January 1, 2022.

Tier 3: First hired on or after January 1, 2022.

Retirement pension

Eligibility: An employee may retire at age 50 with at least 10 years of service or at age 60 with 4 years of service. If retirement occurs before age 60, the retirement pension is reduced ¼ of 1% of each month that the age of the member is below 60. However, there is no reduction if the employee has at least 30 years of service.

Amount: The retirement pension is based on the average of the 4 highest consecutive years of salary within the last 10 years. For an employee who withdraws from service on or after December 31, 2003, the amount of the retirement pension is 2.4% of highest average salary for each year of service.

The maximum pension payable is 80% of the highest annual salary.

An employee who was a member before July 1, 1971, is entitled to the pension provided under the money purchase formula if it provides a greater pension than that provided under the above fixed benefit formula.

Retirement pension (continued)

An employee who first becomes a member on or after January 1, 2011, and prior to January 1, 2022, is subject to the following provisions:

- The highest salary for annuity purposes is equal to the average monthly salary obtained by dividing the member's total salary during the 96 consecutive months of service within the last 120 months of service in which the total compensation was the highest by the number of months in that period.
- For 2025, the annual salary is limited to $127,283.01. Limitations for future years shall automatically be increased by the lesser of 3% or one-half the percentage change in the Consumer Price Index-U during the preceding calendar year.
- A member is eligible to retire with unreduced benefits after attainment of age 67 with at least 10 years of service credit. However, a member may elect to retire at age 62 with at least 10 years of service credit and receive a retirement annuity reduced by ½ of 1% for each month that the age of the member is below 67.

An employee who first becomes a member on or after January 1, 2022, or elects Tier 3 is subject to the following provision:

- A member is eligible to retire with unreduced benefits after attainment of age 65 with at least 10 years of service credit. However, a member may elect to retire at age 60 with at least 10 years of service credit and receive a retirement annuity reduced by ½ of 1% for each month that the age of the member is below 65; otherwise, the same as Tier 2.

Post-retirement increase:

An employee retiring at age 60 or over, or an employee with 30 or more years of service, is entitled to automatic annual increases of 3% of the originally granted pension following one year's receipt of pension payments. In the case of an employee with less than 30 years of service who retires before age 60, the increases begin following the later of attainment of age 60 and receipt of one year's pension payments.

Automatic annual increases (AAI) in the retirement annuity for employees who first became a member on or after January 1, 2011, are equal to the lesser of 3% or one-half the annual change in the Consumer Price Index-U, whichever is less, based on the originally granted retirement annuity.

Surviving spouse's pension

A surviving spouse is entitled to a pension upon the death of an employee while in service or on retirement. If the surviving spouse is age 60 or over and the employee or retiree had at least 20 years of service, the minimum surviving spouse's pension is 50% of the deceased employee's or retired employee's pension at the date of death. If the age of the surviving spouse is less than 60, the

pension is reduced ½ of 1% for each month the surviving spouse is under age 60. If the employee had less than 20 years of service, the surviving spouse is entitled to a pension under the money purchase formula, taking into account employee and employer contributions toward the surviving spouse's pension.

Surviving spouse's pensions are subject to annual increases of 3% per year based on the current amount of pension.

For employees who first become a member on or after January 1, 2011, the initial survivor's annuity is equal to 66 2/3% of the member's earned retirement annuity at the date of death, subject to automatic annual increases of the lesser of 3% or one-half of the increase in the Consumer Price Index-U during the preceding calendar year, based on the originally granted survivor's annuity.

Children's pension

Unmarried children of a deceased employee under the age of 18 are entitled to a children's pension. If either parent is living, the pension is $100.00 per month. If no parent survives, the pension for each child is $150.00 per month. The total amount payable to a spouse or children may not exceed 60% of the employee's final salary.

Single sum death benefit

A death benefit is payable upon the death of an employee in service in addition to any other benefits payable to the surviving spouse or minor children. The death benefit payable is as follows:

- $3,000 benefit during the first year of service,
- $4,000 benefit during the second year of service,
- $5,000 benefit during the third year of service,
- $6,000 benefit during the fourth through ninth year of service, and
- $10,000 benefit if death occurs after ten or more years of service.

Upon the death of a retired member with ten or more years of service, the $10,000 maximum benefit is reduced to $6,000 if death occurs during the first year of retirement. Thereafter, it is reduced by $1,500 for each year or fraction of a year while on retirement, but shall not be less than $3,000.

Ordinary disability benefit

An ordinary disability benefit is payable after eight consecutive days of absence for illness without pay. The amount of the benefit is 45% of salary. The benefit is payable for a period not to exceed ¼ of the length of service or five years, whichever is less.

Occupational death benefit

Upon disability resulting from an injury incurred while on duty, an employee is entitled to a disability benefit of 75% of salary from the first day of absence without pay. The benefit is payable during the period of disability until the employee attains age 65 if disability is incurred before age 60, or for a period of five years if disability is incurred after age 60.

Refunds

An employee who terminates employment before qualifying for a pension is entitled to a refund of employee contributions. The refund is payable to any employee who withdraws before age 55, regardless of the length of service. It is also payable to an employee who withdraws between age 55 and 60 with less than 10 years of service, and to an employee who withdraws after age 60 with less than 5 years of service.

An employee who is unmarried at date of retirement is entitled to a refund of the full amount contributed for the spouse's pension, without interest.

Employee contributions

All members of Tier 1 and Tier 2 are required to contribute 9% of salary to the Fund as follows: 7% for the retirement pension, 1% for the spouse's pension, and 1% for the automatic increases in the retirement pension. All members of Tier 3 are required to contribute 11% of salary to the Fund as follows: 9% for the retirement pension, 1% for the spouse's pension, and 1% for the automatic increases in the retirement pension. In addition, all employees are required to contribute $3.60 per month toward the cost of the single sum death benefit.

Employer contributions

Per HB 417 establishing Public Act 102-0263.

Changes in plan provisions

There have been no changes in plan provisions since the last valuation.

Section 5: GASB 67 Information

Exhibit O: Net Pension Liability

Components of the Net Pension Liability	Current	Prior
Measurement date and reporting date for the Plan under GASB 67	December 31, 2024	December 31, 2023
Total Pension Liability	$1,307,429,382	$1,269,798,400
Plan Fiduciary Net Position	417,977,993	399,623,396
Net Pension Liability	889,451,389	870,175,004
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	31.97%	31.47%

Actuarial assumptions. The Total Pension Liability (TPL) as of December 31, 2024, used the following actuarial assumptions, applied to all periods included in the measurement:

Assumption Type	Assumption
Inflation	2.50%
Salary increases	Ranging from 2.50% to 20.00%, based on service
Net investment rate of return	7.00%, net of pension plan investment expense, including inflation
Cost of living adjustments	3% of original benefit for employees who first became a member before January 1, 2011; the lesser of 3% and 1/2 of CPI of original benefit for employees and beneficiaries of employees who first became a member on or after January 1, 2011; 3% compounded for beneficiaries of employees who first became a member by January 1, 2011.
Mortality	For healthy retirees, mortality rates were based on 100% of PubG-2010 Below Median Healthy Annuitant Table, with mortality improvements projected generationally using scale MP-2021. For healthy beneficiaries, mortality rates were based on 110% of PubG-2010 Below Median Contingent Survivor Table, with mortality improvements projected generationally using scale MP-2021. For active members, mortality rates were based on 100% of PubG-2010 Below Median Employee Table, with mortality improvements projected generationally using scale MP-2021.

The actuarial assumptions used in the December 31, 2024, valuation are based on the results of the Experience Review, dated February 15, 2024, for the five-year period ending December 31, 2022.

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, 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*
U.S. Equity	24.00%	6.10%
Non - U.S. Equity	18.00%	6.20%
Emerging Market	6.00%	7.40%
Fixed Income	15.00%	1.90%
Real Estate	10.00%	3.50%
Hedge Funds	3.00%	2.90%
Infrastructure	8.00%	6.10%
Private Equity	7.00%	9.65%
Private Debt	5.00%	6.10%
Short-term TIPS	4.00%	1.10%
Total	**100.00%**	

* Geometric real rates of return are net of inflation of 2.40% as reported by Segal Marco Advisors.

Discount rate. The discount rate used to measure the Total Pension Liability (TPL) was 7.00% as of December 31, 2024, and December 31, 2023. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at a 9% contribution rate for Tier 1 and Tier 2, and 11% for Tier 3, and that employer contributions will be made per statute. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions and contributions from future plan members that are intended to fund the service costs of future plan members and their beneficiaries are not included. Based on those assumptions, the Plan Fiduciary Net Position (FNP) was projected to be available to make all projected future benefit payments for current plan members. Therefore, the projected benefit payments were discounted at the long-term expected rate of return (7.00%) to determine the TPL as of both December 31, 2024, and December 31, 2023. No projected benefit payments were discounted at the municipal bond index (4.08%, based on the Bond Buyer 20-GO Municipal Bond Index as of December 31, 2024).

Discount rate sensitivity

Sensitivity of the Net Pension Liability to changes in the discount rate. The following presents the Net Pension Liability (NPL) of the Fund as of December 31, 2024, calculated using the discount rate of 7.00%, as well as what the Fund's NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (6.00%) or 1-percentage-point higher (8.00%) than the current rate.

Item	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
Net Pension Liability	$1,032,526,263	$889,451,389	$769,133,628

Exhibit P: Schedule of changes in Net Pension Liability

Components of the Net Pension Liability	Current	Prior
Measurement Date		
Measurement date and reporting date for the Plan under GASB 67	December 31, 2024	December 31, 2023
Total Pension Liability		
Service cost	$20,670,693	$18,511,656
Interest	87,323,303	87,140,419
Change of benefit terms	0	0
Differences between expected and actual experience	15,623,671	5,708,342
Changes of assumptions	0	-25,248,075
Benefit payments, including refunds of member contributions	-85,986,685	-85,330,825
Net change in Total Pension Liability	**$37,630,982**	**$781,517**
Total Pension Liability — beginning	1,269,798,400	1,269,016,883
Total Pension Liability — ending	**$1,307,429,382**	**$1,269,798,400**
Plan Fiduciary Net Position		
Contributions — employer	$59,697,606	$70,405,922
Contributions — employee	16,465,467	13,800,598
Net investment income	30,283,623	37,104,806
Benefit payments, including refunds of member contributions	-85,986,685	-85,330,825
Administrative expense	-2,105,786	-2,202,778
Other	372	225
Net change in Plan Fiduciary Net Position	**$18,354,597**	**$33,777,948**
Plan Fiduciary Net Position — beginning	399,623,396	365,845,448
Plan Fiduciary Net Position — ending	**$417,977,993**	**$399,623,396**

Section 5: GASB Information

Components of the Net Pension Liability	Current	Prior
Net Pension Liability		
Net Pension Liability — ending	$889,451,389	$870,175,004
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	31.97%	31.47%
Covered payroll	$168,925,363	$144,629,413
Plan Net Pension Liability as percentage of covered payroll	526.54%	601.66%

Exhibit Q: 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
2015	$36,273,994	$30,588,976	$5,685,018	$122,382,584	24.99%
2016	37,130,268	30,890,241	6,240,027	121,126,918	25.50%
2017	45,253,238	20,920,614	24,332,624	135,315,008	15.46%
2018	50,929,734	27,638,402	23,291,332	133,112,100	20.76%
2019	61,887,790	27,682,089	34,205,701	139,204,051	19.89%
2020	67,297,212	33,939,927	33,357,285	138,942,498	24.43%
2021	70,492,027	83,349,261	-12,857,234	134,515,373	61.96%
2022	71,021,948	67,128,978	3,892,970	136,917,648	49.03%
2023	77,592,063	70,405,922	7,186,141	144,629,413	48.68%
2024	77,234,872	59,697,606	17,537,266	168,925,363	35.34%

Notes to schedule:

- **Valuation date:** Actuarially determined contribution is calculated using a December 31 valuation date as of the beginning of the fiscal year in which contributions are reported
- **Actuarial cost method:** Entry Age Normal
- **Amortization method:** The Board sets the funding policy used to calculate the actuarially determined contribution based on a closed amortization period of 30 years, which ends on December 31, 2042. As of December 31, 2023, there are 19 years remaining on this schedule. Amortization payments are calculated on a level percentage of payroll basis.
- **Asset valuation method:** 5-year smoothed fair value
- **Investment rate of return:** 7.00%, net of pension plan investment expense, including inflation
- **Inflation rate:** 2.50%

Section 5: GASB Information

Notes to schedule (continued):

- **Projected salary increases:** Ranging from 2.75% to 20.00%, based on service
- **Mortality:** For healthy annuitants, mortality rates were based on 100% of PubG-2010 Below Median Healthy Annuitant Amount-Weighted Table, with mortality improvements projected generationally using scale MP-2021. For healthy beneficiaries, mortality rates were based on 110% of PubG-2010 Below Median Contingent Survivor Table, with mortality improvements projected generationally using scale MP-2021. For active members, mortality rates were based on 100% of PubG-2010 Below Median Employee Amount-Weighted Table, with mortality improvements projected generationally using scale MP-2021.
- **Cost of living adjustments:** 3% of original benefit for employees who first became a member before January 1, 2011; the lesser of 3% and 1/2 of CPI of original benefit for employees and beneficiaries of employees who first became a member on or after January 1, 2011; 3% compounded for beneficiaries of employees who first became a member by January 1, 2011.
- **Other information:** Same as those used in the December 31, 2023, actuarial funding valuation based on the results of an experience study for the five-year period ending December 31, 2022.

Appendix: Definition of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Term	Definition
Actuarial Accrued Liability for actives	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial Accrued Liability for retirees and beneficiaries	Actuarial Present Value of lifetime benefits to existing retirees and beneficiaries. This sum takes account of life expectancies appropriate to the ages of the annuitants and the interest that the sum is expected to earn before it is entirely paid out in benefits.
Actuarial cost method	A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the actuarially determined contribution.
Actuarial gain or loss	A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield actuarial liabilities that are larger than projected.
Actuarially equivalent	Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is: • Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.) • Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and • Discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Appendix A: Definition of Pension Terms

Term	Definition
Actuarial Present Value of Future Benefits	The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund of member contributions or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.
Actuarial valuation	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan, as well as Actuarially Determined Contributions.
Actuarial Value of Assets (AVA)	The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of Fund assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the Actuarially Determined Contribution.
Actuarially determined	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the Fund.
Actuarially Determined Contribution (ADC)	The employer's contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the Fund's funding policy. The ADC consists of the Employer Normal Cost and the Amortization Payment.
Amortization method	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the Unfunded Actuarial Accrued Liability. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the Unfunded Actuarial Accrued Liability. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.
Amortization payment	The portion of the pension plan contribution, or ADC, that is intended to pay off the Unfunded Actuarial Accrued Liability.
Assumptions or Actuarial Assumptions	The estimates upon which the cost of the Fund is calculated, including: **Investment return** — the rate of investment yield that the Fund will earn over the long-term future; **Mortality rates** — the rate or probability of death at a given age for employees and retirees; **Retirement rates** — the rate or probability of retirement at a given age or service; **Disability rates** — the rate or probability of disability retirement at a given age; **Withdrawal rates** — the rate or probability at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; **Salary increase rates** — the rates of salary increase due to inflation, real wage growth and merit and promotion increases.

Appendix A: Definition of Pension Terms

Term	Definition
Closed amortization period	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 20 years, it is 19 years at the end of one year, 18 years at the end of two years, etc. See Open Amortization Period.
Decrements	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.
Defined benefit plan	A retirement plan in which benefits are defined by a formula based on the member's compensation, age and/or years of service.
Defined contribution plan	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
Employer Normal Cost	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
Experience study	A periodic review and analysis of the actual experience of the Fund that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified based on recommendations from the Actuary.
Funded ratio	The ratio of the Actuarial Value of Assets (AVA) to the Actuarial Accrued Liability (AAL). Plans sometimes also calculate a fair value funded ratio, using the Fair Value of Assets (FVA), rather than the AVA.
GASB 67 and GASB 68	Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves.
Investment return	The rate of earnings of the Fund from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.
Net Pension Liability (NPL)	The Net Pension Liability is equal to the Total Pension Liability minus the Plan Fiduciary Net Position.
Normal Cost	The portion of the Actuarial Present Value of Future Benefits and expenses, if applicable, allocated to a valuation year by the Actuarial Cost Method. Any payment with respect to an Unfunded Actuarial Accrued Liability is not part of the Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of member contributions and employer Normal Cost unless otherwise specifically stated.
Open amortization period	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in each future year in determining the Amortization Period.

Appendix A: Definition of Pension Terms

Term	Definition
Plan Fiduciary Net Position	Fair value of assets.
Service costs	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Total Pension Liability (TPL)	The actuarial accrued liability under the entry age normal cost method and based on the blended discount rate as described in GASB 67 and 68.
Unfunded Actuarial Accrued Liability (UAAL)	The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative, in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus or an Overfunded Actuarial Accrued Liability.
Valuation date or actuarial valuation date	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

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