

Village of Arlington Heights Regular

GASB Statement No. 68 Employer Reporting

Accounting Schedules

December 31, 2017



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April 6, 2018

Village of Arlington Heights
Illinois Municipal Retirement Fund

Ladies and Gentlemen:

The accounting schedules submitted in this report are required under the Governmental Accounting Standards Board (GASB) Statement No. 68 "Accounting and Financial Reporting for Pensions."

Our calculations for this report were prepared for the purpose of complying with the requirements of GASB Statement No. 68. These calculations have been made on a basis that is consistent with our understanding of these accounting standards. These results are subject to review by the fund's auditor and may be revised.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of satisfying the requirements of GASB Statement No. 68. The Net Pension Liability is not an appropriate measure for measuring the sufficiency of plan assets to cover the estimated cost of settling the employer's benefit obligation. The Net Pension Liability is not an appropriate measure for assessing the need for or amount of future employer contributions. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement Nos. 67 and 68 may produce significantly different results. This report may be provided to parties other than the Village of Arlington Heights only in its entirety and only with the permission of Village of Arlington Heights. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by IMRF, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. If your understanding of this information is different than ours, please let us know and do not use or distribute this report until those differences have been resolved to your satisfaction. This information was checked for internal consistency, but it was not audited.

This report complements the actuarial valuation report that was provided to the Illinois Municipal Retirement Fund and should be considered in conjunction with that report. Please see the actuarial valuation report as of December 31, 2017 for additional discussions of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

To the best of our knowledge, the information contained in this report is accurate, and fairly represents the GASB 68 information related to Village of Arlington Heights. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Mark Buis and Francois Pieterse are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the Academy of Actuaries to render the actuarial opinions herein. The signing actuaries are independent of the plan sponsor.

Respectfully submitted,

A handwritten signature in black ink that reads "Mark Buis".

Mark Buis, FSA, EA, FCA, MAAA

A handwritten signature in black ink that reads "Francois Pieterse".

Francois Pieterse, ASA, FCA, MAAA

SECTION A

EXECUTIVE SUMMARY

Executive Summary as of December 31, 2017

Actuarial Valuation Date	December 31, 2017
Measurement Date of the Net Pension Liability	December 31, 2017
Fiscal Year End	April 30, 2018

Membership

Number of	
- Retirees and Beneficiaries	456
- Inactive, Non-Retired Members	195
- Active Members	378
- Total	1,029
Covered Valuation Payroll ⁽¹⁾	\$ 25,690,842

Net Pension Liability

Total Pension Liability/(Asset)	\$ 175,215,716
Plan Fiduciary Net Position	170,132,349
Net Pension Liability/(Asset)	\$ 5,083,367
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	97.10%
Net Pension Liability as a Percentage of Covered Valuation Payroll	19.79%

Development of the Single Discount Rate as of December 31, 2017

Long-Term Expected Rate of Investment Return	7.50%
Long-Term Municipal Bond Rate ⁽²⁾	3.31%
Last year ending December 31 in the 2018 to 2117 projection period for which projected benefit payments are fully funded	2117
Resulting Single Discount Rate based on the above development	7.50%

Single Discount Rate calculated using December 31, 2016 Measurement Date 7.50%

Total Pension Expense/(Income) \$ 3,768,724

Deferred Outflows and Deferred Inflows of Resources by Source to be recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	\$ 750,806	\$ 192,898
Changes in assumptions	76,517	4,488,012
Net difference between projected and actual earnings on pension plan investments	4,533,709	12,675,290
Total	\$ 5,361,032	\$ 17,356,200

⁽¹⁾ Does not necessarily represent Covered Employee Payroll as defined in GASB Statement Nos. 67-68.

⁽²⁾ Source: Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" as of December 29, 2017. In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax exempt securities.

Discussion

Accounting Standard

For state and local government employers (as well as certain non-employers) that contribute to a Defined Benefit (DB) pension plan administered through a trust or equivalent arrangement, Governmental Accounting Standards Board (GASB) Statement No. 68 establishes standards for pension accounting and financial reporting. Under GASB Statement No. 68, the employer must account for and disclose the net pension liability, pension expense, and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements.

The following discussion provides a summary of the information that is required to be disclosed under these accounting standards. A number of these disclosure items are provided in this report. However, certain information is not included in this report if it is not actuarial in nature, such as the notes to the financial statements regarding accounting policies and investments. As a result, the retirement fund and/or plan sponsor is responsible for preparing and disclosing the non-actuarial information needed to comply with these accounting standards.

Financial Statements

GASB Statement No. 68 requires state and local government employers that contribute to DB pension plans to recognize the net pension liability and the pension expense on their financial statements, along with the related deferred outflows of resources and deferred inflows of resources. The net pension liability is the difference between the total pension liability and the plan's fiduciary net position. In traditional actuarial terms, this is analogous to the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

Paragraph 57 of GASB Statement No. 68 says, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to IMRF subsequent to the measurement date of December 31, 2017.

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the certain changes in the liability and investment experience.

Notes to Financial Statements

GASB Statement No. 68 requires the notes of the employer's financial statements to disclose the total pension expense, the pension plan's liabilities and assets, and deferred outflows of resources and inflows of resources related to pensions.

In addition, GASB Statement No. 68 requires the notes of the financial statements for the employers to include certain additional information, including (page numbers refer to page numbers from this report unless specified otherwise):

- a description of the types of benefits provided by the plan, as well as automatic or ad hoc COLAs (please see pages B-1 - B-5 of the December 31, 2017 Annual Actuarial Valuation report dated March 22, 2018);
- the number and classes of employees covered by the benefit terms (page 1);
- for the current year, sources of changes in the net pension liability (page 10);
- significant assumptions and methods used to calculate the total pension liability (page 15);
- inputs to the single discount rate (page 16);
- certain information about mortality assumptions and the dates of experience studies (page 13 and page 15);
- the date of the valuation used to determine the total pension liability (page 1);
- information about changes of assumptions or other inputs and benefit terms (pages 13 and 15);
- the basis for determining contributions to the plan, including a description of the plan's funding policy, as well as member and employer contribution requirements (please see page A-3, B-5 and Section D of the December 31, 2017 Annual Actuarial Valuation report dated March 22, 2018, as well as page 13);
- the total pension liability, fiduciary net position, net pension liability, and the pension plan's fiduciary net position as a percentage of the total pension liability (page 10);
- the net pension liability using a discount rate that is 1% higher and 1% lower than used to calculate the total pension liability and net pension liability for financial reporting purposes (page 10); and
- a description of the fund that administers the pension plan (to be provided by IMRF).

Required Supplementary Information

The financial statements of employers also include required supplementary information showing the 10-year fiscal history of:

- sources of changes in the net pension liability (page 11);
- information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll (page 11); and
- comparison of actual employer contributions to the actuarially determined contributions based on the plan's funding policy (page 12).

These tables may be built prospectively as the information becomes available.

Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. For the employer's financial reporting purposes, the net pension liability and pension expense should be measured as of the employer's "measurement date" which may not be earlier than the employer's prior fiscal year-end date. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The total pension liability shown in this report is based on an actuarial valuation performed as of December 31, 2017 and a measurement date of December 31, 2017.

Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a single discount rate that reflects: (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the plan's projected fiduciary net position is not sufficient to pay benefits).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.50%; the municipal bond rate is 3.31% (based on the daily rate closest to but not later than the measurement date of the "20-Bond Go Index" described on page 1 and the resulting Single Discount Rate is 7.50%.

Other Observations

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status

Given the plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the plan earning 7.50% on the actuarial value of assets), it is expected that:

- (1) The employer normal cost as a percentage of pay will decrease to the level of Tier 2 normal cost as time passes as the majority of the active population will consist of Tier 2 members.
- (2) The unfunded liability will increase in dollar amount for several years before it begins to decrease.
- (3) The funded status of the plan will increase gradually towards a 100% funded ratio.

This funding policy results in a crossover date in 2117 and a discount rate of 7.50%. The projections in this report are strictly for the purposes of determining the GASB discount rate and are different from a funding projection for the ongoing plan.

Limitations of Assets as a Percent of Total Pension Liability Measurements

This report includes a measure of the plan fiduciary net position as a percent of total pension liability. Unless otherwise indicated, with regard to any such measurements presented in this report:

- (1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.
- (2) The measurement is inappropriate for assessing the need for or amount of future employer contributions.

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded ratio measurement presented in this report is based upon the actuarial accrued liability and the market value of assets. Unless otherwise indicated, with regard to any funded status measurements presented in this report:

- (1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations, in other words of transferring the obligations to a unrelated third party in an arm's length market value type transaction.
- (2) The measurement is dependent upon the actuarial cost method which, in combination with the plan's amortization policy, affects the timing and amounts of future contributions. The amount of future contributions will most certainly differ from those assumed in this report due to future actual experience differing from assumed experience based upon actuarial assumptions. A funded ratio measurement in this report of 100% is not synonymous with no required future contributions. If the funded ratio were 100%, the plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).

Limitation of Project Scope

Actuarial standards do not require the actuary to evaluate the ability of the plan sponsor or other contributing entity to make required contributions to the plan when due. Such an evaluation was not within the scope of this project and is not within the actuary's domain of expertise. Consequently, the actuary performed no such evaluation.

SECTION B

FINANCIAL STATEMENTS

Pension Expense/(Income) Under GASB Statement No. 68

Calendar Year Ended December 31, 2017

A. Expense/(Income)

1. Service Cost	\$	2,700,511
2. Interest on the Total Pension Liability		12,858,220
3. Current-Period Benefit Changes		0
4. Employee Contributions (made negative for addition here)		(1,158,454)
5. Projected Earnings on Plan Investments (made negative for addition here)		(11,028,745)
6. Other Changes in Plan Fiduciary Net Position		2,743,611
7. Recognition of Outflow (Inflow) of Resources due to Liabilities		(1,366,788)
8. Recognition of Outflow (Inflow) of Resources due to Assets		(979,631)
9. Total Pension Expense/(Income)	\$	3,768,724

Statement of Outflows and Inflows Arising from Current Reporting Period Calendar Year Ended December 31, 2017

A. Outflows (Inflows) of Resources due to Liabilities

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$ (92,058)
2. Assumption Changes (gains) or losses	\$ (5,760,640)
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	3.7101
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the Difference between expected and actual experience of the Total Pension Liability	\$ (24,813)
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$ (1,552,691)
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	<u>\$ (1,577,504)</u>
7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the Difference between expected and actual experience of the Total Pension Liability	\$ (67,245)
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$ (4,207,949)
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	<u>\$ (4,275,194)</u>

B. Outflows (Inflows) of Resources due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ (15,844,113)
2. Recognition period for Assets {in years}	5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	\$ (3,168,823)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$ (12,675,290)

* Please note that employer contributions made after the measurement date have not been reported as deferred outflows of resources. These employer contributions must be separately accounted for by the employer.

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Calendar Year Ended December 31, 2017

A. Outflows and Inflows of Resources due to Liabilities and Assets to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Due to Liabilities	\$ 551,082	\$ 1,917,870	\$ (1,366,788)
2. Due to Assets	2,189,192	3,168,823	(979,631)
3. Total	\$ 2,740,274	\$ 5,086,693	\$ (2,346,419)

B. Outflows and Inflows of Resources by Source to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ 444,869	\$ 199,235	\$ 245,634
2. Assumption changes	106,213	1,718,635	\$ (1,612,422)
3. Net difference between projected and actual earnings on pension plan investments	2,189,192	3,168,823	(979,631)
4. Total	\$ 2,740,274	\$ 5,086,693	\$ (2,346,419)

C. Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows of Resources
1. Differences between expected and actual experience	\$ 750,806	\$ 192,898	\$ 557,908
2. Assumption changes	76,517	4,488,012	\$ (4,411,495)
3. Net difference between projected and actual earnings on pension plan investments	4,533,709	12,675,290	(8,141,581)
4. Total	\$ 5,361,032	\$ 17,356,200	\$ (11,995,168)

D. Deferred Outflows and Deferred Inflows of Resources by Year to be Recognized in Future Pension Expenses

Year Ending December 31	Net Deferred Outflows of Resources
2018	\$ (2,327,346)
2019	(2,365,317)
2020	(4,133,684)
2021	(3,168,821)
2022	0
Thereafter	0
Total	\$ (11,995,168)

Schedule of Changes in Net Pension Liability and Related Ratios

Current Period

Calendar Year Ended December 31, 2017

A. Total pension liability	
1. Service Cost	\$ 2,700,511
2. Interest on the Total Pension Liability	12,858,220
3. Changes of benefit terms	0
4. Difference between expected and actual experience of the Total Pension Liability	(92,058)
5. Changes of assumptions	(5,760,640)
6. Benefit payments, including refunds of employee contributions	(9,165,978)
7. Net change in total pension liability	\$ 540,055
8. Total pension liability – beginning	174,675,661
9. Total pension liability – ending	<u><u>\$ 175,215,716</u></u>
B. Plan fiduciary net position	
1. Contributions – employer	\$ 3,170,250
2. Contributions – employee	1,158,454
3. Net investment income	26,872,858
4. Benefit payments, including refunds of employee contributions	(9,165,978)
5. Other (Net Transfer)	(2,743,611)
6. Net change in plan fiduciary net position	\$ 19,291,973
7. Plan fiduciary net position – beginning	150,840,376
8. Plan fiduciary net position – ending	<u><u>\$ 170,132,349</u></u>
C. Net pension liability/(asset)	<u><u>\$ 5,083,367</u></u>
D. Plan fiduciary net position as a percentage of the total pension liability	97.10%
E. Covered Valuation payroll	\$ 25,690,842
F. Net pension liability as a percentage of covered valuation payroll	19.79%

Sensitivity of Net Pension Liability/(Asset) to the Single Discount Rate Assumption

	1% Decrease	Current Single Discount Rate Assumption	1% Increase
	<u>6.50%</u>	<u>7.50%</u>	<u>8.50%</u>
Total Pension Liability	\$ 196,129,748	\$ 175,215,716	\$ 157,818,476
Plan Fiduciary Net Position	170,132,349	170,132,349	170,132,349
Net Pension Liability/(Asset)	\$ 25,997,399	\$ 5,083,367	\$ (12,313,873)

Schedules of Required Supplementary Information

Multiyear Schedule of Changes in Net Pension Liability and Related Ratios

Last 10 Calendar Years

(schedule to be built prospectively from 2014)

Calendar year ending December 31,	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Total Pension Liability										
Service Cost	\$ 2,700,511	\$ 2,639,543	\$ 2,640,660							
Interest on the Total Pension Liability	12,858,220	12,281,628	11,869,028							
Benefit Changes	0	0	0							
Difference between Expected and Actual Experience	(92,058)	1,640,544	(648,919)							
Assumption Changes	(5,760,640)	(611,951)	395,156							
Benefit Payments and Refunds	(9,165,978)	(8,734,040)	(7,881,295)							
Net Change in Total Pension Liability	540,055	7,215,724	6,374,630							
Total Pension Liability - Beginning	174,675,661	167,459,937	161,085,307							
Total Pension Liability - Ending (a)	\$175,215,716	\$174,675,661	\$167,459,937							
Plan Fiduciary Net Position										
Employer Contributions	\$ 3,170,250	\$ 3,257,572	\$ 3,168,474							
Employee Contributions	1,158,454	1,145,096	1,182,657							
Pension Plan Net Investment Income	26,872,858	9,933,011	723,795							
Benefit Payments and Refunds	(9,165,978)	(8,734,040)	(7,881,295)							
Other	(2,743,611)	555,713	965,300							
Net Change in Plan Fiduciary Net Position	19,291,973	6,157,352	(1,841,069)							
Plan Fiduciary Net Position - Beginning	150,840,376	144,683,024	146,524,093							
Plan Fiduciary Net Position - Ending (b)	\$170,132,349	\$150,840,376	\$144,683,024							
Net Pension Liability/(Asset) - Ending (a) - (b)	5,083,367	23,835,285	22,776,913							
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	97.10%	86.35%	86.40%							
Covered Valuation Payroll	\$ 25,690,842	\$ 24,924,034	\$ 24,380,386							
Net Pension Liability as a Percentage of Covered Valuation Payroll	19.79%	95.63%	93.42%							

Multiyear Schedule of Contributions

Last 10 Calendar Years

<u>Calendar Year Ending December 31,</u>	<u>Actuarially Determined Contribution</u>	<u>Actual Contribution</u>	<u>Contribution Deficiency (Excess)</u>	<u>Covered Valuation Payroll</u>	<u>Actual Contribution as a % of Covered Valuation Payroll</u>
2015	\$ 3,159,698	\$ 3,168,474	\$ (8,776)	\$ 24,380,386	13.00%
2016	3,257,571	3,257,572	(1)	24,924,034	13.07%
2017	3,170,250 *	3,170,250	0	25,690,842	12.34%

* Estimated based on contribution rate of 12.34% and covered valuation payroll of \$25,690,842.

Notes to Schedule of Contributions

Summary of Actuarial Methods and Assumptions Used in the Calculation of the 2017 Contribution Rate*

Valuation Date:

Notes Actuarially determined contribution rates are calculated as of December 31 each year, which is 12 months prior to the beginning of the fiscal year in which contributions are reported.

Methods and Assumptions Used to Determine 2017 Contribution Rates:

Actuarial Cost Method	Aggregate Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	Non-Taxing bodies: 10-year rolling period. Taxing bodies (Regular, SLEP and ECO groups): 26-year closed period Early Retirement Incentive Plan liabilities: a period up to 10 years selected by the Employer upon adoption of ERI. SLEP supplemental liabilities attributable to Public Act 94-712 were financed over 21 years for most employers (two employers were financed over 30 years).
Asset Valuation Method	5-Year smoothed market; 20% corridor
Wage growth	3.50%
Price Inflation	2.75% -- approximate; No explicit price inflation assumption is used in this valuation.
Salary Increases	3.75% to 14.50% including inflation
Investment Rate of Return	7.50%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2014 valuation pursuant to an experience study of the period 2011-2013.
Mortality	For non-disabled retirees, an IMRF specific mortality table was used with fully generational projection scale MP-2014 (base year 2012). The IMRF specific rates were developed from the RP-2014 Blue Collar Health Annuitant Mortality Table with adjustments to match current IMRF experience. For disabled retirees, an IMRF specific mortality table was used with fully generational projection scale MP-2014 (base year 2012). The IMRF specific rates were developed from the RP-2014 Disabled Retirees Mortality Table applying the same adjustment that were applied for non-disabled lives. For active members, an IMRF specific mortality table was used with fully generational projection scale MP-2014 (base year 2012). The IMRF specific rates were developed from the RP-2014 Employee Mortality Table with adjustments to match current IMRF experience.

Other Information:

Notes There were no benefit changes during the year.

* Based on Valuation Assumptions used in the December 31, 2015 actuarial valuation

Development of Market Value of Assets

Market Value of Assets as of December 31, 2017

1. Employee Contribution Reserve (MDF Assets from IMRF)	\$	28,093,971
2. Employer Contribution Reserve (EAF assets from IMRF)	\$	48,915,558
3. Annuitant Reserve	\$	93,136,785
4. Miscellaneous Adjustment*	\$	(13,965)
5. Net Market Value	\$	170,132,349

* Includes an adjustment factor of (0.0000820765) on Items 1 through 3 to ensure that Market Value of Assets for all employers balances to the total Market Value of IMRF. Miscellaneous adjustments are due to various items such as suspended annuity reserve, disability benefit reserve, death benefit reserve, supplemental benefit reserve, employers with no assets, etc.

Schedule of Contributions

Total Contributions

1. Employer

a.) Wage Reporting	\$	3,170,250
b.) Accelerated payments and Reserve Payments		-
	\$	3,170,250

2. Member

a.) Wage Reporting	\$	1,156,089
b.) Member Payments (i.e. ERI, Pension Payments)		2,365
Sub-total (Amount used for valuation on Schedule of Changes Page 10)	\$	1,158,454

c.) Voluntary Additional Plan	\$	144,459
Total Member Contributions (a+b+c)	\$	1,302,913

Total Employer and Member Contributions (1+2)	\$	4,473,163
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Summary of Actuarial Methods and Assumptions Used in the Calculation of the Total Pension Liability

Methods and Assumptions Used to Determine Total Pension Liability:

Actuarial Cost Method	Entry Age Normal
Asset Valuation Method	Market Value of Assets
Price Inflation	2.50%
Salary Increases	3.39% to 14.25%
Investment Rate of Return	7.50%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2017 valuation pursuant to an experience study of the period 2014-2016.
Mortality	For non-disabled retirees, an IMRF specific mortality table was used with fully generational projection scale MP-2017 (base year 2015). The IMRF specific rates were developed from the RP-2014 Blue Collar Health Annuitant Mortality Table with adjustments to match current IMRF experience. For disabled retirees, an IMRF specific mortality table was used with fully generational projection scale MP-2017 (base year 2015). The IMRF specific rates were developed from the RP-2014 Disabled Retirees Mortality Table applying the same adjustment that were applied for non-disabled lives. For active members, an IMRF specific mortality table was used with fully generational projection scale MP-2017 (base year 2015). The IMRF specific rates were developed from the RP-2014 Employee Mortality Table with adjustments to match current IMRF experience.

Other Information:

Notes: There were no benefit changes during the year.

A detailed description of the actuarial assumptions and methods can be found in the December 31, 2017 Illinois Municipal Retirement Fund annual actuarial valuation report.

SECTION C

CALCULATION OF THE SINGLE DISCOUNT RATE

Calculation of the Single Discount Rate

GASB Statement No. 68 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a “risk-free” rate is required, as described in the following paragraph.

The *Single Discount Rate* (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating (which is published by the Federal Reserve) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.50%; the municipal bond rate is 3.31%; and the resulting single discount rate is 7.50%.

The tables in this section provide background for the development of the single discount rate.

The **Projection of Contributions** table shows the development of expected contributions in future years. Normal Cost contributions for future hires are not included (nor are their liabilities).

Expected Contributions are developed based on the following:

- Member Contributions for current members
- Normal Cost contributions for current members
- Unfunded Liability contributions for current and future members.

The **Projection of Plan Fiduciary Net Position** table shows the development of expected asset levels in future years.

The **Present Values of Projected Benefit Payments** table shows the development of the Single Discount Rate (SDR). It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR.

Single Discount Rate Development Projection of Contributions

Year	Payroll for Current Employees	Contributions from Current Employees	Normal Cost Contributions	UAL Contributions	Total Contributions
2017	\$ 25,690,842				
2018	25,026,824	\$ 1,126,207	\$ 1,710,471	\$ 906,110	\$ 3,742,788
2019	23,619,942	1,062,897	1,377,066	755,343	3,195,306
2020	22,333,963	1,005,028	1,288,896	583,443	2,877,367
2021	21,106,079	949,774	1,218,034	387,785	2,555,593
2022	19,927,790	896,750	1,150,035	165,351	2,212,137
2023	18,766,833	844,507	1,081,188	169,484	2,095,180
2024	17,650,667	794,280	1,013,408	173,721	1,981,409
2025	16,633,600	748,512	951,737	178,064	1,878,313
2026	15,697,717	706,397	893,550	182,516	1,782,464
2027	14,798,265	665,922	839,437	187,079	1,692,438
2028	13,969,787	628,640	788,314	191,756	1,608,711
2029	13,167,678	592,546	740,458	196,550	1,529,554
2030	12,378,544	557,034	692,426	201,464	1,450,924
2031	11,613,277	522,598	647,331	206,500	1,376,429
2032	10,878,675	489,540	603,170	211,663	1,304,374
2033	10,206,743	459,303	562,899	216,954	1,239,157
2034	9,536,825	429,157	523,136	222,378	1,174,671
2035	8,840,571	397,826	482,332	227,938	1,108,096
2036	8,141,921	366,386	441,007	233,636	1,041,030
2037	7,460,146	335,707	400,406	239,477	975,589
2038	6,837,023	307,666	363,595	245,464	916,725
2039	6,268,305	282,074	329,646	251,600	863,320
2040	5,726,407	257,688	298,329	257,890	813,907
2041	5,204,842	234,218	267,569	264,338	766,125
2042	4,704,128	211,686	238,586	270,946	721,217
2043	4,218,987	189,854	211,072	0	400,926
2044	3,752,803	168,876	185,162	0	354,038
2045	3,334,835	150,068	161,913	0	311,980
2046	2,951,560	132,820	140,688	0	273,508
2047	2,522,283	113,503	117,991	0	231,493
2048	2,112,886	95,080	97,799	0	192,879
2049	1,788,117	80,465	81,710	0	162,175
2050	1,480,287	66,613	66,769	0	133,382
2051	1,211,680	54,526	54,176	0	108,701
2052	926,315	41,684	41,052	0	82,736
2053	650,894	29,290	28,910	0	58,200
2054	440,257	19,812	19,945	0	39,756
2055	275,109	12,380	12,788	0	25,168
2056	168,301	7,574	8,171	0	15,745
2057	100,016	4,501	5,181	0	9,682
2058	66,816	3,007	3,784	0	6,790
2059	46,876	2,109	2,811	0	4,921
2060	32,342	1,455	1,981	0	3,436
2061	22,517	1,013	1,390	0	2,404
2062	14,859	669	915	0	1,583
2063	10,237	461	634	0	1,095
2064	7,196	324	446	0	770
2065	4,669	210	286	0	497
2066	2,570	116	159	0	275
2067	1,657	75	101	0	176

The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

Single Discount Rate Development Projection of Contributions (Concluded)

Year	Payroll for Current Employees	Contributions from Current Employees	Normal Cost Contributions	UAL Contributions	Total Contributions
2068	\$ 995	\$ 45	\$ 61	\$ 0	\$ 106
2069	261	12	16	0	27
2070	0	0	0	0	0
2071	0	0	0	0	0
2072	0	0	0	0	0
2073	0	0	0	0	0
2074	0	0	0	0	0
2075	0	0	0	0	0
2076	0	0	0	0	0
2077	0	0	0	0	0
2078	0	0	0	0	0
2079	0	0	0	0	0
2080	0	0	0	0	0
2081	0	0	0	0	0
2082	0	0	0	0	0
2083	0	0	0	0	0
2084	0	0	0	0	0
2085	0	0	0	0	0
2086	0	0	0	0	0
2087	0	0	0	0	0
2088	0	0	0	0	0
2089	0	0	0	0	0
2090	0	0	0	0	0
2091	0	0	0	0	0
2092	0	0	0	0	0
2093	0	0	0	0	0
2094	0	0	0	0	0
2095	0	0	0	0	0
2096	0	0	0	0	0
2097	0	0	0	0	0
2098	0	0	0	0	0
2099	0	0	0	0	0
2100	0	0	0	0	0
2101	0	0	0	0	0
2102	0	0	0	0	0
2103	0	0	0	0	0
2104	0	0	0	0	0
2105	0	0	0	0	0
2106	0	0	0	0	0
2107	0	0	0	0	0
2108	0	0	0	0	0
2109	0	0	0	0	0
2110	0	0	0	0	0
2111	0	0	0	0	0
2112	0	0	0	0	0
2113	0	0	0	0	0
2114	0	0	0	0	0
2115	0	0	0	0	0
2116	0	0	0	0	0
2117	0	0	0	0	0

The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

Single Discount Rate Development

Projection of Plan Fiduciary Net Position

Year	Projected Beginning		Projected Total		Projected Benefit		Projected		Projected Ending Plan	
	Plan	Net Position	Contributions	Payments	Investment	Earnings at 7.50%	Net Position			
	(a)	(b)	(c)	(d)	(e)=(a)+(b)-(c)+(d)					
2018	\$	170,132,349	\$	3,742,788	\$	9,423,702	\$	12,550,743	\$	177,002,178
2019		177,002,178		3,195,306		9,852,700		13,030,024		183,374,808
2020		183,374,808		2,877,367		10,441,353		13,474,589		189,285,412
2021		189,285,412		2,555,593		11,021,561		13,884,671		194,704,114
2022		194,704,114		2,212,136		11,608,913		14,256,800		199,564,137
2023		199,564,137		2,095,180		12,224,578		14,594,325		204,029,065
2024		204,029,065		1,981,409		12,880,362		14,900,858		208,030,969
2025		208,030,969		1,878,314		13,475,954		15,175,274		211,608,602
2026		211,608,602		1,782,464		14,062,010		15,418,487		214,747,543
2027		214,747,543		1,692,438		14,652,848		15,628,837		217,415,969
2028		217,415,969		1,608,711		15,260,662		15,803,505		219,567,522
2029		219,567,522		1,529,553		15,798,306		15,942,159		221,240,929
2030		221,240,929		1,450,924		16,282,421		16,046,943		222,456,375
2031		222,456,375		1,376,429		16,708,377		16,119,674		223,244,102
2032		223,244,102		1,304,373		17,096,662		16,161,803		223,613,616
2033		223,613,616		1,239,157		17,433,534		16,174,711		223,593,949
2034		223,593,949		1,174,671		17,812,893		16,156,892		223,112,620
2035		223,112,620		1,108,095		18,235,512		16,102,780		222,087,983
2036		222,087,983		1,041,030		18,594,056		16,010,260		220,545,217
2037		220,545,217		975,589		18,924,714		15,879,967		218,476,058
2038		218,476,058		916,725		19,119,039		15,715,458		215,989,201
2039		215,989,201		863,320		19,265,094		15,521,599		213,109,027
2040		213,109,027		813,907		19,396,872		15,298,914		209,824,976
2041		209,824,976		766,124		19,457,901		15,048,603		206,181,802
2042		206,181,802		721,218		19,457,971		14,773,709		202,218,758
2043		202,218,758		400,926		19,411,383		14,466,403		197,674,704
2044		197,674,704		354,038		19,320,058		14,127,235		192,835,919
2045		192,835,919		311,980		19,171,907		13,768,232		187,744,224
2046		187,744,224		273,508		18,980,817		13,391,975		182,428,890
2047		182,428,890		231,493		18,804,818		12,998,259		176,853,824
2048		176,853,824		192,879		18,557,673		12,587,807		171,076,838
2049		171,076,838		162,175		18,268,943		12,164,034		165,134,104
2050		165,134,104		133,382		17,984,605		11,727,739		159,010,620
2051		159,010,620		108,701		17,653,922		11,279,745		152,745,145
2052		152,745,145		82,736		17,361,236		10,819,656		146,286,301
2053		146,286,301		58,200		17,004,160		10,347,487		139,687,828
2054		139,687,828		39,756		16,614,227		9,866,281		132,979,639
2055		132,979,639		25,168		16,158,628		9,379,406		126,225,584
2056		126,225,584		15,745		15,638,405		8,891,660		119,494,584
2057		119,494,584		9,682		15,071,133		8,407,500		112,840,633
2058		112,840,633		6,790		14,464,089		7,930,700		106,314,035
2059		106,314,035		4,921		13,851,671		7,463,687		99,930,971
2060		99,930,971		3,436		13,236,034		7,007,571		93,705,945
2061		93,705,945		2,404		12,621,462		6,563,286		87,650,172
2062		87,650,172		1,583		12,008,746		6,131,634		81,774,644
2063		81,774,644		1,095		11,399,433		5,713,388		76,089,694
2064		76,089,694		770		10,796,469		5,309,207		70,603,201
2065		70,603,201		497		10,202,649		4,919,576		65,320,624
2066		65,320,624		275		9,618,270		4,544,892		60,247,522
2067		60,247,522		176		9,043,722		4,185,562		55,389,537

The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

Single Discount Rate Development

Projection of Plan Fiduciary Net Position (Concluded)

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Investment Earnings at 7.50%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)=(a)+(b)-(c)+(d)
2068	\$ 55,389,537	\$ 106	\$ 8,481,449	\$ 3,841,915	\$ 50,750,109
2069	50,750,109	27	7,931,804	3,514,194	46,332,527
2070	46,332,527	0	7,394,991	3,202,641	42,140,176
2071	42,140,176	0	6,872,138	2,907,467	38,175,505
2072	38,175,505	0	6,364,297	2,628,816	34,440,024
2073	34,440,024	0	5,872,489	2,366,765	30,934,299
2074	30,934,299	0	5,397,871	2,121,312	27,657,740
2075	27,657,740	0	4,941,502	1,892,374	24,608,612
2076	24,608,612	0	4,504,166	1,679,793	21,784,239
2077	21,784,239	0	4,086,671	1,483,338	19,180,907
2078	19,180,907	0	3,689,743	1,302,704	16,793,868
2079	16,793,868	0	3,314,058	1,137,510	14,617,320
2080	14,617,320	0	2,960,287	987,295	12,644,328
2081	12,644,328	0	2,628,931	851,522	10,866,918
2082	10,866,918	0	2,320,361	729,578	9,276,136
2083	9,276,136	0	2,034,881	620,782	7,862,037
2084	7,862,037	0	1,772,596	524,382	6,613,823
2085	6,613,823	0	1,533,338	439,576	5,520,061
2086	5,520,061	0	1,316,679	365,522	4,568,904
2087	4,568,904	0	1,121,931	301,356	3,748,329
2088	3,748,329	0	948,235	246,209	3,046,302
2089	3,046,302	0	794,559	199,215	2,450,958
2090	2,450,958	0	659,691	159,531	1,950,799
2091	1,950,799	0	542,300	126,341	1,534,840
2092	1,534,840	0	441,032	98,873	1,192,681
2093	1,192,681	0	354,545	76,396	914,532
2094	914,532	0	281,464	58,226	691,294
2095	691,294	0	220,420	43,731	514,605
2096	514,605	0	170,084	32,332	376,853
2097	376,853	0	129,179	23,507	271,182
2098	271,182	0	96,452	16,787	191,516
2099	191,516	0	70,702	11,760	132,575
2100	132,575	0	50,807	8,072	89,840
2101	89,840	0	35,747	5,422	59,514
2102	59,514	0	24,590	3,558	38,482
2103	38,482	0	16,512	2,278	24,248
2104	24,248	0	10,805	1,421	14,864
2105	14,864	0	6,876	862	8,851
2106	8,851	0	4,248	507	5,110
2107	5,110	0	2,544	290	2,855
2108	2,855	0	1,473	160	1,541
2109	1,541	0	823	85	804
2110	804	0	444	44	403
2111	403	0	231	22	194
2112	194	0	115	10	89
2113	89	0	55	5	39
2114	39	0	25	2	15
2115	15	0	11	1	5
2116	5	0	4	0	1
2117	1	0	1	0	0

The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

Single Discount Rate Development

Present Values of Projected Benefits

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v ^a ((a)-.5)	(g)=(e)*vf ^a ((a)-.5)	(h)=(c)/(1+sdr) ^a ((a)-.5)
2018	\$ 170,132,349	\$ 9,423,702	\$ 9,423,702	\$ 0	\$ 9,089,026	\$ 0	\$ 9,089,026
2019	177,002,178	9,852,700	9,852,700	0	8,839,803	0	8,839,803
2020	183,374,808	10,441,353	10,441,353	0	8,714,362	0	8,714,362
2021	189,285,412	11,021,561	11,021,561	0	8,556,842	0	8,556,842
2022	194,704,114	11,608,913	11,608,913	0	8,384,043	0	8,384,043
2023	199,564,137	12,224,578	12,224,578	0	8,212,726	0	8,212,726
2024	204,029,065	12,880,362	12,880,362	0	8,049,577	0	8,049,577
2025	208,030,969	13,475,954	13,475,954	0	7,834,225	0	7,834,225
2026	211,608,602	14,062,010	14,062,010	0	7,604,584	0	7,604,584
2027	214,747,543	14,652,848	14,652,848	0	7,371,258	0	7,371,258
2028	217,415,969	15,260,662	15,260,662	0	7,141,419	0	7,141,419
2029	219,567,522	15,798,306	15,798,306	0	6,877,224	0	6,877,224
2030	221,240,929	16,282,421	16,282,421	0	6,593,457	0	6,593,457
2031	222,456,375	16,708,377	16,708,377	0	6,293,902	0	6,293,902
2032	223,244,102	17,096,662	17,096,662	0	5,990,852	0	5,990,852
2033	223,613,616	17,433,534	17,433,534	0	5,682,694	0	5,682,694
2034	223,593,949	17,812,893	17,812,893	0	5,401,256	0	5,401,256
2035	223,112,620	18,235,512	18,235,512	0	5,143,631	0	5,143,631
2036	222,087,983	18,594,056	18,594,056	0	4,878,851	0	4,878,851
2037	220,545,217	18,924,714	18,924,714	0	4,619,174	0	4,619,174
2038	218,476,058	19,119,039	19,119,039	0	4,341,028	0	4,341,028
2039	215,989,201	19,265,094	19,265,094	0	4,069,014	0	4,069,014
2040	213,109,027	19,396,872	19,396,872	0	3,811,020	0	3,811,020
2041	209,824,976	19,457,901	19,457,901	0	3,556,289	0	3,556,289
2042	206,181,802	19,457,971	19,457,971	0	3,308,188	0	3,308,188
2043	202,218,758	19,411,383	19,411,383	0	3,070,016	0	3,070,016
2044	197,674,704	19,320,058	19,320,058	0	2,842,393	0	2,842,393
2045	192,835,919	19,171,907	19,171,907	0	2,623,811	0	2,623,811
2046	187,744,224	18,980,817	18,980,817	0	2,416,427	0	2,416,427
2047	182,428,890	18,804,818	18,804,818	0	2,226,996	0	2,226,996
2048	176,853,824	18,557,673	18,557,673	0	2,044,398	0	2,044,398
2049	171,076,838	18,268,943	18,268,943	0	1,872,177	0	1,872,177
2050	165,134,104	17,984,605	17,984,605	0	1,714,454	0	1,714,454
2051	159,010,620	17,653,922	17,653,922	0	1,565,516	0	1,565,516
2052	152,745,145	17,361,236	17,361,236	0	1,432,150	0	1,432,150
2053	146,286,301	17,004,160	17,004,160	0	1,304,832	0	1,304,832
2054	139,687,828	16,614,227	16,614,227	0	1,185,963	0	1,185,963
2055	132,979,639	16,158,628	16,158,628	0	1,072,969	0	1,072,969
2056	126,225,584	15,638,405	15,638,405	0	965,977	0	965,977
2057	119,494,584	15,071,133	15,071,133	0	865,987	0	865,987
2058	112,840,633	14,464,089	14,464,089	0	773,122	0	773,122
2059	106,314,035	13,851,671	13,851,671	0	688,733	0	688,733
2060	99,930,971	13,236,034	13,236,034	0	612,207	0	612,207
2061	93,705,945	12,621,462	12,621,462	0	543,052	0	543,052
2062	87,650,172	12,008,746	12,008,746	0	480,641	0	480,641
2063	81,774,644	11,399,433	11,399,433	0	424,422	0	424,422
2064	76,089,694	10,796,469	10,796,469	0	373,928	0	373,928
2065	70,603,201	10,202,649	10,202,649	0	328,708	0	328,708
2066	65,320,624	9,618,270	9,618,270	0	288,261	0	288,261
2067	60,247,522	9,043,722	9,043,722	0	252,132	0	252,132

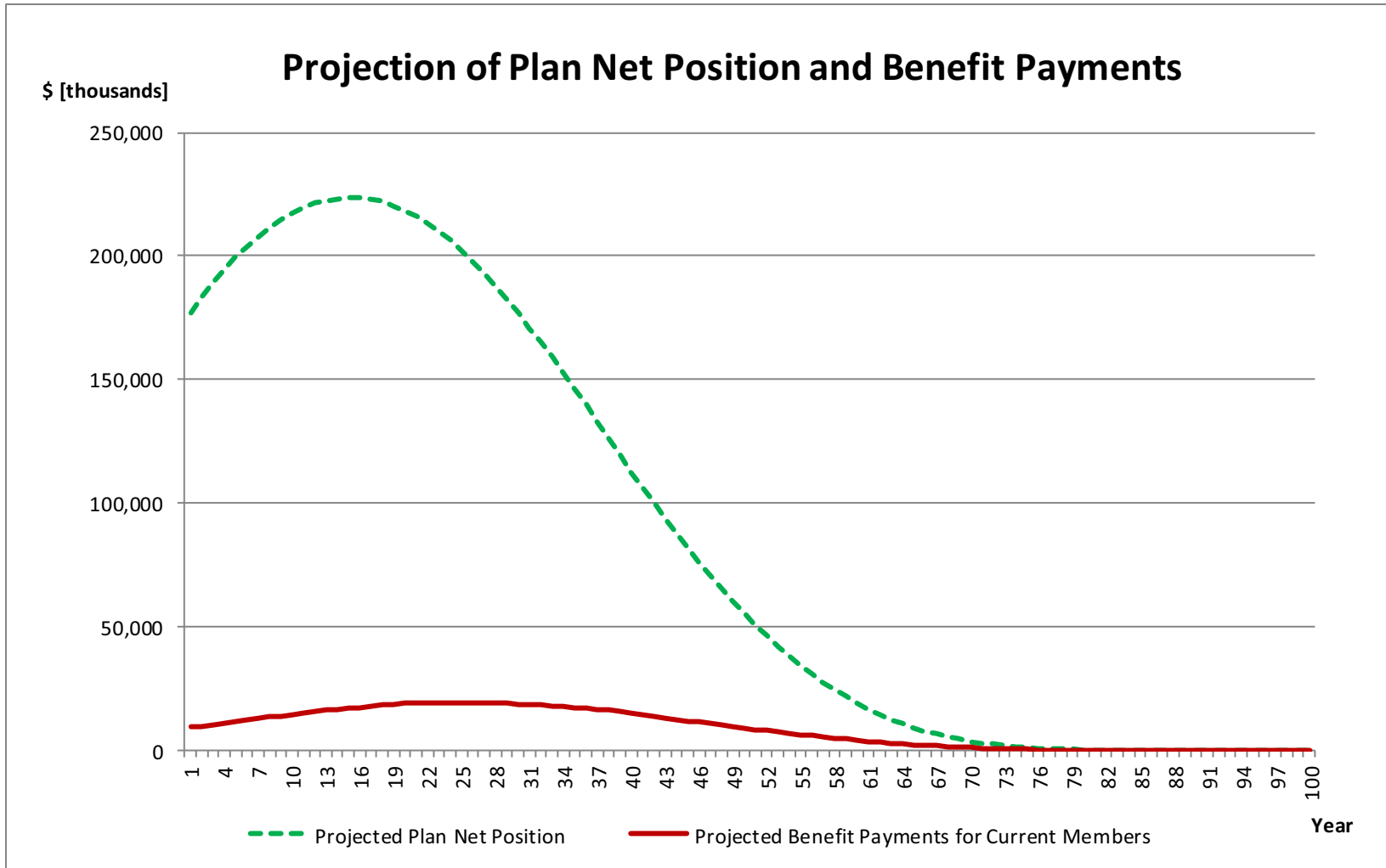
The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

Single Discount Rate Development

Present Values of Projected Benefits (Concluded)

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v ^{-(a)-.5}	(g)=(e)*vf ^{-(a)-.5}	(h)=(c)/(1+sdr) ^{-(a)-.5}
2068	\$ 55,389,537	\$ 8,481,449	\$ 8,481,449	\$ 0	\$ 219,959	\$ 0	\$ 219,959
2069	50,750,109	7,931,804	7,931,804	0	191,353	0	191,353
2070	46,332,527	7,394,991	7,394,991	0	165,956	0	165,956
2071	42,140,176	6,872,138	6,872,138	0	143,463	0	143,463
2072	38,175,505	6,364,297	6,364,297	0	123,592	0	123,592
2073	34,440,024	5,872,489	5,872,489	0	106,085	0	106,085
2074	30,934,299	5,397,871	5,397,871	0	90,708	0	90,708
2075	27,657,740	4,941,502	4,941,502	0	77,245	0	77,245
2076	24,608,612	4,504,166	4,504,166	0	65,497	0	65,497
2077	21,784,239	4,086,671	4,086,671	0	55,280	0	55,280
2078	19,180,907	3,689,743	3,689,743	0	46,428	0	46,428
2079	16,793,868	3,314,058	3,314,058	0	38,792	0	38,792
2080	14,617,320	2,960,287	2,960,287	0	32,233	0	32,233
2081	12,644,328	2,628,931	2,628,931	0	26,628	0	26,628
2082	10,866,918	2,320,361	2,320,361	0	21,863	0	21,863
2083	9,276,136	2,034,881	2,034,881	0	17,835	0	17,835
2084	7,862,037	1,772,596	1,772,596	0	14,453	0	14,453
2085	6,613,823	1,533,338	1,533,338	0	11,630	0	11,630
2086	5,520,061	1,316,679	1,316,679	0	9,290	0	9,290
2087	4,568,904	1,121,931	1,121,931	0	7,363	0	7,363
2088	3,748,329	948,235	948,235	0	5,789	0	5,789
2089	3,046,302	794,559	794,559	0	4,513	0	4,513
2090	2,450,958	659,691	659,691	0	3,485	0	3,485
2091	1,950,799	542,300	542,300	0	2,665	0	2,665
2092	1,534,840	441,032	441,032	0	2,016	0	2,016
2093	1,192,681	354,545	354,545	0	1,508	0	1,508
2094	914,532	281,464	281,464	0	1,113	0	1,113
2095	691,294	220,420	220,420	0	811	0	811
2096	514,605	170,084	170,084	0	582	0	582
2097	376,853	129,179	129,179	0	411	0	411
2098	271,182	96,452	96,452	0	286	0	286
2099	191,516	70,702	70,702	0	195	0	195
2100	132,575	50,807	50,807	0	130	0	130
2101	89,840	35,747	35,747	0	85	0	85
2102	59,514	24,590	24,590	0	55	0	55
2103	38,482	16,512	16,512	0	34	0	34
2104	24,248	10,805	10,805	0	21	0	21
2105	14,864	6,876	6,876	0	12	0	12
2106	8,851	4,248	4,248	0	7	0	7
2107	5,110	2,544	2,544	0	4	0	4
2108	2,855	1,473	1,473	0	2	0	2
2109	1,541	823	823	0	1	0	1
2110	804	444	444	0	1	0	1
2111	403	231	231	0	0	0	0
2112	194	115	115	0	0	0	0
2113	89	55	55	0	0	0	0
2114	39	25	25	0	0	0	0
2115	15	11	11	0	0	0	0
2116	5	4	4	0	0	0	0
2117	1	1	1	0	0	0	0
Totals					\$ 193,823,098	\$ -	\$ 193,823,098

The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.



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SECTION D

GLOSSARY OF TERMS

Glossary of Terms

<i>Actuarial Accrued Liability (AAL)</i>	The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as "accrued liability" or "actuarial liability."
<i>Actuarial Assumptions</i>	These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption for a long-term average rate of inflation.
<i>Accrued Service</i>	Service credited under the fund which was rendered before the date of the actuarial valuation.
<i>Actuarial Equivalent</i>	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.
<i>Actuarial Cost Method</i>	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method.
<i>Actuarial Gain (Loss)</i>	The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.
<i>Actuarial Present Value (APV)</i>	The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future payments at predetermined rates of interest and probabilities of payment.
<i>Actuarial Valuation</i>	The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions.
<i>Actuarial Valuation Date</i>	The date as of which an actuarial valuation is performed.
<i>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</i>	A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically the Actuarially Determined Contribution has a normal cost payment and an amortization payment.

Glossary of Terms (Continued)

<i>Amortization Payment</i>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<i>Amortization Method</i>	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be “open” (meaning, reset each year) or “closed” (the number of years remaining will decline each year).
<i>Cost-of-Living Adjustments</i>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i>	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
<i>Covered Valuation Payroll</i>	The earnings of covered employees for the year ended on the valuation date, which is typically only the pensionable pay and does not include pay above any pay cap. It is not necessarily the same as payroll actually paid because it excludes all pay for people who exited during the year.
<i>Deferred Inflows and Outflows</i>	The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.
<i>Discount Rate</i>	For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically: <ol style="list-style-type: none">1. The benefit payments to be made while the pension plans’ fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.
<i>Entry Age Actuarial Cost Method (EAN)</i>	The EAN is a funding method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit ages(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.

Glossary of Terms (Continued)

<i>GASB</i>	The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.
<i>Fiduciary Net Position</i>	The fiduciary net position is the value of the assets of the trust.
<i>Long-Term Expected Rate of Return</i>	The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.
<i>Money-Weighted Rate of Return</i>	The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 68, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.
<i>Multiple-Employer Defined Benefit Pension Plan</i>	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
<i>Municipal Bond Rate</i>	The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.
<i>Net Pension Liability (NPL)</i>	The NPL is the liability of employers and non-employer contribution entities to plan members for benefits provided through a defined benefit pension plan.
<i>Non-Employer Contribution Entities</i>	Non-employer contribution entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB Accounting statement plan members are not considered non-employer contribution entities.
<i>Normal Cost</i>	The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.
<i>Other Postemployment Benefits (OPEB)</i>	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other post-employment benefits do not include termination benefits.
<i>Real Rate of Return</i>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<i>Service Cost</i>	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.

Glossary of Terms (Concluded)

Total Pension Expense

The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year:

1. Service Cost;
2. Interest on the Total Pension Liability;
3. Current-Period Benefit Changes;
4. Employee Contributions (made negative for addition here);
5. Projected Earnings on Plan Investments (made negative for addition here);
6. Pension Plan Administrative Expense;
7. Other Changes in Plan Fiduciary Net Position;
8. Recognition of Outflow (Inflow) of Resources due to Liabilities;
and
9. Recognition of Outflow (Inflow) of Resources due to Assets.

Total Pension Liability (TPL)

The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.

Unfunded Actuarial Accrued Liability (UAAL)

The UAAL is the difference between actuarial accrued liability and valuation assets.

Valuation Assets

The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of the GASB Statement No. 68, the valuation asset is equal to the market value of assets.