

# Arlington Hgts SD 25 Regular

GASB Statement No. 68 Employer Reporting  
Accounting Schedules  
December 31, 2017



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April 6, 2018

Arlington Hgts SD 25  
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 Arlington Hgts SD 25 only in its entirety and only with the permission of Arlington Hgts SD 25. 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 Arlington Hgts SD 25. 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,



Mark Buis, FSA, EA, FCA, MAAA



Francois Pieterse, ASA, FCA, MAAA

**SECTION A**

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**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	June 30, 2018

### Membership

Number of	
- Retirees and Beneficiaries	276
- Inactive, Non-Retired Members	270
- Active Members	261
- Total	807
Covered Valuation Payroll <sup>(1)</sup>	\$ 7,779,557

### Net Pension Liability

Total Pension Liability/(Asset)	\$ 45,194,446
Plan Fiduciary Net Position	43,285,365
Net Pension Liability/(Asset)	\$ 1,909,081
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	95.78%
Net Pension Liability as a Percentage of Covered Valuation Payroll	24.54%

### 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 <sup>(2)</sup>	3.31%
Last year ending December 31 in the 2018 to 2117 projection period for which projected benefit payments are fully funded	2116
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) \$ 1,403,986

### 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	\$ 481,838	\$ 12,363
Changes in assumptions	2,329	994,981
Net difference between projected and actual earnings on pension plan investments	1,241,285	3,181,122
Total	\$ 1,725,452	\$ 4,188,466

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

<sup>(2)</sup> 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 2116 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**

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**FINANCIAL STATEMENTS**

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

### Calendar Year Ended December 31, 2017

#### A. Expense/(Income)

1. Service Cost	\$ 848,202
2. Interest on the Total Pension Liability	3,251,677
3. Current-Period Benefit Changes	0
4. Employee Contributions (made negative for addition here)	(365,413)
5. Projected Earnings on Plan Investments (made negative for addition here)	(2,804,542)
6. Other Changes in Plan Fiduciary Net Position	743,786
7. Recognition of Outflow (Inflow) of Resources due to Liabilities	(123,291)
8. Recognition of Outflow (Inflow) of Resources due to Assets	(146,433)
9. Total Pension Expense/(Income)	<u>\$ 1,403,986</u>

# 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	\$ 711,424
2. Assumption Changes (gains) or losses	\$ (1,388,230)
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	3.0127
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	\$ 236,142
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$ (460,793)
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	\$ (224,651)
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	\$ 475,282
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$ (927,437)
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	\$ (452,155)

## B. Outflows (Inflows) of Resources due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ (3,976,403)
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	\$ (795,281)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$ (3,181,122)

\* 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	\$ 412,368	\$ 535,659	\$ (123,291)
2. Due to Assets	648,848	795,281	(146,433)
3. Total	\$ 1,061,216	\$ 1,330,940	\$ (269,724)

## 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	\$ 332,066	\$ 11,582	\$ 320,484
2. Assumption changes	80,302	524,077	\$ (443,775)
3. Net difference between projected and actual earnings on pension plan investments	648,848	795,281	(146,433)
4. Total	\$ 1,061,216	\$ 1,330,940	\$ (269,724)

## 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	\$ 481,838	\$ 12,363	\$ 469,475
2. Assumption changes	2,329	994,981	\$ (992,652)
3. Net difference between projected and actual earnings on pension plan investments	1,241,285	3,181,122	(1,939,837)
4. Total	\$ 1,725,452	\$ 4,188,466	\$ (2,463,014)

## 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	\$ (437,065)
2019	(474,833)
2020	(755,837)
2021	(795,279)
2022	0
Thereafter	0
Total	\$ (2,463,014)

# Schedule of Changes in Net Pension Liability and Related Ratios

## Current Period

### Calendar Year Ended December 31, 2017

<b>A. Total pension liability</b>	
1. Service Cost	\$ 848,202
2. Interest on the Total Pension Liability	3,251,677
3. Changes of benefit terms	0
4. Difference between expected and actual experience of the Total Pension Liability	711,424
5. Changes of assumptions	(1,388,230)
6. Benefit payments, including refunds of employee contributions	(2,320,450)
7. Net change in total pension liability	\$ 1,102,623
8. Total pension liability – beginning	44,091,823
9. Total pension liability – ending	<u><u>\$ 45,194,446</u></u>
<b>B. Plan fiduciary net position</b>	
1. Contributions – employer	\$ 919,875
2. Contributions – employee	365,413
3. Net investment income	6,780,945
4. Benefit payments, including refunds of employee contributions	(2,320,450)
5. Other (Net Transfer)	(743,786)
6. Net change in plan fiduciary net position	\$ 5,001,997
7. Plan fiduciary net position – beginning	38,283,368
8. Plan fiduciary net position – ending	<u><u>\$ 43,285,365</u></u>
<b>C. Net pension liability/(asset)</b>	<u><u>\$ 1,909,081</u></u>
<b>D. Plan fiduciary net position as a percentage of the total pension liability</b>	95.78%
<b>E. Covered Valuation payroll</b>	\$ 7,779,557
<b>F. Net pension liability as a percentage of covered valuation payroll</b>	24.54%

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

	1% Decrease 6.50%	Current Single Discount Rate Assumption 7.50%	1% Increase 8.50%
Total Pension Liability	\$ 50,192,885	\$ 45,194,446	\$ 41,029,550
Plan Fiduciary Net Position	43,285,365	43,285,365	43,285,365
Net Pension Liability/(Asset)	\$ 6,907,520	\$ 1,909,081	\$ (2,255,815)

# 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
<b>Total Pension Liability</b>										
Service Cost	\$ 848,202	\$ 866,048	\$ 869,695	\$ 915,435						
Interest on the Total Pension Liability	3,251,677	3,120,202	2,969,300	2,690,242						
Benefit Changes	0	0	0	0						
Difference between Expected and Actual Experience	711,424	(35,527)	265,732	347,151						
Assumption Changes	(1,388,230)	(194,112)	94,426	1,806,494						
Benefit Payments and Refunds	(2,320,450)	(2,115,056)	(2,021,132)	(1,798,506)						
<b>Net Change in Total Pension Liability</b>	<b>1,102,623</b>	<b>1,641,555</b>	<b>2,178,021</b>	<b>3,960,816</b>						
<b>Total Pension Liability - Beginning</b>	<b>44,091,823</b>	<b>42,450,268</b>	<b>40,272,247</b>	<b>36,311,431</b>						
<b>Total Pension Liability - Ending (a)</b>	<b>\$ 45,194,446</b>	<b>\$ 44,091,823</b>	<b>\$ 42,450,268</b>	<b>\$ 40,272,247</b>						
<b>Plan Fiduciary Net Position</b>										
Employer Contributions	\$ 919,875	\$ 943,309	\$ 896,167	\$ 916,975						
Employee Contributions	365,413	348,069	348,858	346,070						
Pension Plan Net Investment Income	6,780,945	2,489,530	180,413	2,091,460						
Benefit Payments and Refunds	(2,320,450)	(2,115,056)	(2,021,132)	(1,798,506)						
Other	(743,786)	384,179	358,469	360,607						
<b>Net Change in Plan Fiduciary Net Position</b>	<b>5,001,997</b>	<b>2,050,031</b>	<b>(237,225)</b>	<b>1,916,606</b>						
<b>Plan Fiduciary Net Position - Beginning</b>	<b>38,283,368</b>	<b>36,233,337</b>	<b>36,470,562</b>	<b>34,553,956</b>						
<b>Plan Fiduciary Net Position - Ending (b)</b>	<b>\$ 43,285,365</b>	<b>\$ 38,283,368</b>	<b>\$ 36,233,337</b>	<b>\$ 36,470,562</b>						
<b>Net Pension Liability/(Asset) - Ending (a) - (b)</b>	<b>1,909,081</b>	<b>5,808,455</b>	<b>6,216,931</b>	<b>3,801,685</b>						
<b>Plan Fiduciary Net Position as a Percentage of Total Pension Liability</b>										
	95.78%	86.83%	85.35%	90.56%						
<b>Covered Valuation Payroll</b>	<b>\$ 7,779,557</b>	<b>\$ 7,734,843</b>	<b>\$ 7,633,456</b>	<b>\$ 7,545,460</b>						
<b>Net Pension Liability as a Percentage of Covered Valuation Payroll</b>										
	24.54%	75.09%	81.44%	50.38%						



# Multiyear Schedule of Contributions

## Last 10 Calendar Years

Calendar Year Ending December 31,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Valuation Payroll	Actual Contribution as a % of Covered Valuation Payroll
2014	\$ 909,982	\$ 916,975	\$ (6,993)	\$ 7,545,460	12.15%
2015	896,168	896,167	1	7,633,456	11.74%
2016	931,275	943,309	(12,034)	7,734,843	12.20%
2017	908,652 *	919,875	(11,223)	7,779,557	11.82%

\* Estimated based on contribution rate of 11.68% and covered valuation payroll of \$7,779,557.

## 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)	\$	7,032,189
2. Employer Contribution Reserve (EAF assets from IMRF)	\$	12,213,935
3. Annuitant Reserve	\$	24,042,794
4. Miscellaneous Adjustment*	\$	(3,553)
<b>5. Net Market Value</b>	\$	<b>43,285,365</b>

\* 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	\$	908,651
b.) Accelerated payments and Reserve Payments		11,224
	\$	<b>919,875</b>

#### 2. Member

a.) Wage Reporting	\$	350,081
b.) Member Payments (i.e. ERI, Pension Payments)		15,332
<b>Sub-total (Amount used for valuation on Schedule of Changes Page 10)</b>	\$	<b>365,413</b>

c.) Voluntary Additional Plan	\$	49,978
<b>Total Member Contributions (a+b+c)</b>	\$	<b>415,391</b>

<b>Total Employer and Member Contributions (1+2)</b>	\$	<b>1,335,266</b>
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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.
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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

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### 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	\$ 7,779,557				
2018	7,435,226	\$ 334,585	\$ 479,433	\$ 296,870	\$ 1,110,888
2019	6,833,515	307,508	374,819	260,169	942,496
2020	6,307,782	283,850	342,263	218,134	844,247
2021	5,853,561	263,410	317,041	170,097	750,548
2022	5,443,257	244,947	293,748	115,291	653,986
2023	5,081,424	228,664	272,724	118,173	619,561
2024	4,757,228	214,075	253,921	121,127	589,123
2025	4,462,716	200,822	236,447	124,155	561,424
2026	4,189,163	188,512	220,307	127,259	536,078
2027	3,926,190	176,679	205,319	130,441	512,439
2028	3,680,613	165,628	191,030	133,702	490,360
2029	3,453,642	155,414	178,232	137,044	470,690
2030	3,237,680	145,696	166,132	140,470	452,298
2031	3,029,109	136,310	154,537	143,982	434,829
2032	2,821,533	126,969	143,115	147,582	417,666
2033	2,616,909	117,761	131,964	151,271	400,996
2034	2,423,448	109,055	121,494	155,053	385,602
2035	2,216,609	99,747	110,471	158,929	369,147
2036	1,997,906	89,906	98,786	162,903	351,595
2037	1,795,450	80,795	88,070	166,975	335,840
2038	1,608,188	72,368	78,410	171,150	321,929
2039	1,444,134	64,986	69,702	175,428	310,116
2040	1,292,863	58,179	61,892	179,814	299,885
2041	1,148,640	51,689	54,537	184,309	290,534
2042	1,018,422	45,829	48,054	188,917	282,800
2043	903,716	40,667	42,197	0	82,864
2044	804,912	36,221	37,267	0	73,488
2045	718,935	32,352	32,792	0	65,144
2046	642,553	28,915	28,740	0	57,655
2047	571,441	25,715	24,941	0	50,656
2048	510,604	22,977	21,834	0	44,812
2049	447,785	20,150	18,796	0	38,946
2050	370,567	16,676	15,300	0	31,975
2051	300,058	13,503	12,359	0	25,862
2052	246,665	11,100	10,112	0	21,211
2053	191,896	8,635	7,810	0	16,445
2054	138,169	6,218	5,623	0	11,841
2055	105,124	4,731	4,330	0	9,061
2056	73,551	3,310	3,008	0	6,318
2057	37,702	1,697	1,549	0	3,246
2058	14,741	663	639	0	1,302
2059	7,461	336	370	0	705
2060	4,413	199	245	0	444
2061	2,875	129	170	0	299
2062	1,753	79	107	0	186
2063	1,175	53	72	0	125
2064	930	42	57	0	99
2065	737	33	45	0	78
2066	532	24	33	0	57
2067	366	16	22	0	39

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	\$ 288	\$ 13	\$ 18	\$ 0	\$ 31
2069	130	6	8	0	14
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
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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 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)
2018	\$ 43,285,365	\$ 1,110,888	\$ 2,543,473	\$ 3,193,652	\$ 45,046,431
2019	45,046,431	942,496	2,761,556	3,311,501	46,538,873
2020	46,538,873	844,247	2,937,482	3,413,338	47,858,976
2021	47,858,976	750,548	3,119,292	3,502,201	48,992,434
2022	48,992,434	653,986	3,291,637	3,577,309	49,932,092
2023	49,932,092	619,561	3,440,275	3,641,042	50,752,420
2024	50,752,420	589,124	3,562,544	3,696,944	51,475,943
2025	51,475,943	561,425	3,706,194	3,744,899	52,076,073
2026	52,076,073	536,078	3,836,172	3,784,189	52,560,169
2027	52,560,169	512,439	3,959,299	3,815,092	52,928,402
2028	52,928,402	490,360	4,066,614	3,837,945	53,190,092
2029	53,190,092	470,690	4,167,138	3,853,146	53,346,790
2030	53,346,790	452,298	4,263,844	3,860,660	53,395,905
2031	53,395,905	434,829	4,352,291	3,860,444	53,338,887
2032	53,338,887	417,666	4,435,835	3,852,459	53,173,176
2033	53,173,176	400,996	4,505,971	3,836,835	52,905,036
2034	52,905,036	385,602	4,565,634	3,813,960	52,538,965
2035	52,538,965	369,148	4,649,384	3,782,815	52,041,544
2036	52,041,544	351,595	4,724,687	3,742,090	51,410,542
2037	51,410,542	335,840	4,773,942	3,692,371	50,664,810
2038	50,664,810	321,928	4,804,638	3,634,798	49,816,899
2039	49,816,899	310,116	4,811,722	3,570,509	48,885,803
2040	48,885,803	299,885	4,805,061	3,500,545	47,881,172
2041	47,881,172	290,535	4,787,891	3,425,486	46,809,302
2042	46,809,302	282,800	4,754,826	3,346,028	45,683,304
2043	45,683,304	82,864	4,721,592	3,255,440	44,300,017
2044	44,300,017	73,488	4,668,292	3,153,311	42,858,524
2045	42,858,524	65,144	4,590,554	3,047,754	41,380,868
2046	41,380,868	57,655	4,502,192	2,939,908	39,876,238
2047	39,876,238	50,656	4,406,419	2,830,330	38,350,805
2048	38,350,805	44,812	4,296,375	2,719,759	36,819,002
2049	36,819,002	38,946	4,200,397	2,608,192	35,265,743
2050	35,265,743	31,975	4,101,552	2,495,080	33,691,247
2051	33,691,247	25,862	3,983,836	2,381,103	32,114,375
2052	32,114,375	21,211	3,854,608	2,267,425	30,548,403
2053	30,548,403	16,445	3,739,705	2,154,032	28,979,176
2054	28,979,176	11,841	3,615,645	2,040,739	27,416,111
2055	27,416,111	9,061	3,472,661	1,928,671	25,881,181
2056	25,881,181	6,318	3,338,129	1,818,404	24,367,774
2057	24,367,774	3,246	3,210,051	1,709,502	22,870,471
2058	22,870,471	1,302	3,063,881	1,602,515	21,410,407
2059	21,410,407	705	2,907,740	1,498,738	20,002,110
2060	20,002,110	444	2,752,830	1,398,810	18,648,533
2061	18,648,533	299	2,601,452	1,302,860	17,350,240
2062	17,350,240	186	2,454,370	1,210,900	16,106,955
2063	16,106,955	125	2,310,918	1,122,933	14,919,096
2064	14,919,096	99	2,171,224	1,038,987	13,786,958
2065	13,786,958	78	2,035,761	959,064	12,710,338
2066	12,710,338	57	1,904,750	883,141	11,688,785
2067	11,688,785	39	1,778,028	811,190	10,721,985

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	\$ 10,721,985	\$ 31	\$ 1,655,692	\$ 743,184	\$ 9,809,508
2069	9,809,508	14	1,538,020	679,081	8,950,583
2070	8,950,583	0	1,424,786	618,830	8,144,628
2071	8,144,628	0	1,316,187	562,382	7,390,823
2072	7,390,823	0	1,212,468	509,666	6,688,021
2073	6,688,021	0	1,113,795	460,589	6,034,815
2074	6,034,815	0	1,020,339	415,040	5,429,516
2075	5,429,516	0	932,246	372,886	4,870,157
2076	4,870,157	0	849,585	333,978	4,354,550
2077	4,354,550	0	772,298	298,154	3,880,406
2078	3,880,406	0	700,248	265,246	3,445,404
2079	3,445,404	0	633,246	235,088	3,047,246
2080	3,047,246	0	571,059	207,516	2,683,703
2081	2,683,703	0	513,418	182,373	2,352,658
2082	2,352,658	0	460,053	159,509	2,052,114
2083	2,052,114	0	410,705	138,786	1,780,195
2084	1,780,195	0	365,139	120,069	1,535,125
2085	1,535,125	0	323,135	103,236	1,315,226
2086	1,315,226	0	284,488	88,167	1,118,905
2087	1,118,905	0	249,039	74,748	944,613
2088	944,613	0	216,636	62,869	790,846
2089	790,846	0	187,132	52,423	656,136
2090	656,136	0	160,397	43,304	539,043
2091	539,043	0	136,302	35,409	438,150
2092	438,150	0	114,727	28,637	352,060
2093	352,060	0	95,560	22,886	279,386
2094	279,386	0	78,684	18,057	218,758
2095	218,758	0	63,980	14,051	168,829
2096	168,829	0	51,314	10,773	128,288
2097	128,288	0	40,543	8,129	95,874
2098	95,874	0	31,515	6,030	70,389
2099	70,389	0	24,075	4,393	50,707
2100	50,707	0	18,050	3,138	35,795
2101	35,795	0	13,263	2,196	24,728
2102	24,728	0	9,539	1,503	16,693
2103	16,693	0	6,705	1,005	10,993
2104	10,993	0	4,597	655	7,051
2105	7,051	0	3,069	416	4,398
2106	4,398	0	1,991	257	2,663
2107	2,663	0	1,254	154	1,563
2108	1,563	0	766	89	886
2109	886	0	452	50	484
2110	484	0	257	27	254
2111	254	0	140	14	128
2112	128	0	73	7	62
2113	62	0	37	3	29
2114	29	0	18	2	13
2115	13	0	8	1	5
2116	5	0	4	0	1
2117	1	0	2	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)-.5)	(g)=(e)*vf^((a)-.5)	(h)=(c)/(1+sdr)^((a)-.5)
2018	\$ 43,285,365	\$ 2,543,473	\$ 2,543,473	\$ 0	\$ 2,453,143	\$ 0	\$ 2,453,143
2019	45,046,431	2,761,556	2,761,556	0	2,477,657	0	2,477,657
2020	46,538,873	2,937,482	2,937,482	0	2,451,625	0	2,451,625
2021	47,858,976	3,119,292	3,119,292	0	2,421,734	0	2,421,734
2022	48,992,434	3,291,637	3,291,637	0	2,377,244	0	2,377,244
2023	49,932,092	3,440,275	3,440,275	0	2,311,248	0	2,311,248
2024	50,752,420	3,562,544	3,562,544	0	2,226,411	0	2,226,411
2025	51,475,943	3,706,194	3,706,194	0	2,154,590	0	2,154,590
2026	52,076,073	3,836,172	3,836,172	0	2,074,560	0	2,074,560
2027	52,560,169	3,959,299	3,959,299	0	1,991,764	0	1,991,764
2028	52,928,402	4,066,614	4,066,614	0	1,903,023	0	1,903,023
2029	53,190,092	4,167,138	4,167,138	0	1,814,014	0	1,814,014
2030	53,346,790	4,263,844	4,263,844	0	1,726,615	0	1,726,615
2031	53,395,905	4,352,291	4,352,291	0	1,639,471	0	1,639,471
2032	53,338,887	4,435,835	4,435,835	0	1,554,364	0	1,554,364
2033	53,173,176	4,505,971	4,505,971	0	1,468,782	0	1,468,782
2034	52,905,036	4,565,634	4,565,634	0	1,384,399	0	1,384,399
2035	52,538,965	4,649,384	4,649,384	0	1,311,437	0	1,311,437
2036	52,041,544	4,724,687	4,724,687	0	1,239,700	0	1,239,700
2037	51,410,542	4,773,942	4,773,942	0	1,165,231	0	1,165,231
2038	50,664,810	4,804,638	4,804,638	0	1,090,906	0	1,090,906
2039	49,816,899	4,811,722	4,811,722	0	1,016,292	0	1,016,292
2040	48,885,803	4,805,061	4,805,061	0	944,079	0	944,079
2041	47,881,172	4,787,891	4,787,891	0	875,075	0	875,075
2042	46,809,302	4,754,826	4,754,826	0	808,402	0	808,402
2043	45,683,304	4,721,592	4,721,592	0	746,745	0	746,745
2044	44,300,017	4,668,292	4,668,292	0	686,805	0	686,805
2045	42,858,524	4,590,554	4,590,554	0	628,250	0	628,250
2046	41,380,868	4,502,192	4,502,192	0	573,169	0	573,169
2047	39,876,238	4,406,419	4,406,419	0	521,838	0	521,838
2048	38,350,805	4,296,375	4,296,375	0	473,308	0	473,308
2049	36,819,002	4,200,397	4,200,397	0	430,451	0	430,451
2050	35,265,743	4,101,552	4,101,552	0	390,997	0	390,997
2051	33,691,247	3,983,836	3,983,836	0	353,279	0	353,279
2052	32,114,375	3,854,608	3,854,608	0	317,971	0	317,971
2053	30,548,403	3,739,705	3,739,705	0	286,970	0	286,970
2054	28,979,176	3,615,645	3,615,645	0	258,093	0	258,093
2055	27,416,111	3,472,661	3,472,661	0	230,592	0	230,592
2056	25,881,181	3,338,129	3,338,129	0	206,195	0	206,195
2057	24,367,774	3,210,051	3,210,051	0	184,450	0	184,450
2058	22,870,471	3,063,881	3,063,881	0	163,768	0	163,768
2059	21,410,407	2,907,740	2,907,740	0	144,579	0	144,579
2060	20,002,110	2,752,830	2,752,830	0	127,327	0	127,327
2061	18,648,533	2,601,452	2,601,452	0	111,930	0	111,930
2062	17,350,240	2,454,370	2,454,370	0	98,234	0	98,234
2063	16,106,955	2,310,918	2,310,918	0	86,040	0	86,040
2064	14,919,096	2,171,224	2,171,224	0	75,199	0	75,199
2065	13,786,958	2,035,761	2,035,761	0	65,588	0	65,588
2066	12,710,338	1,904,750	1,904,750	0	57,086	0	57,086
2067	11,688,785	1,778,028	1,778,028	0	49,570	0	49,570

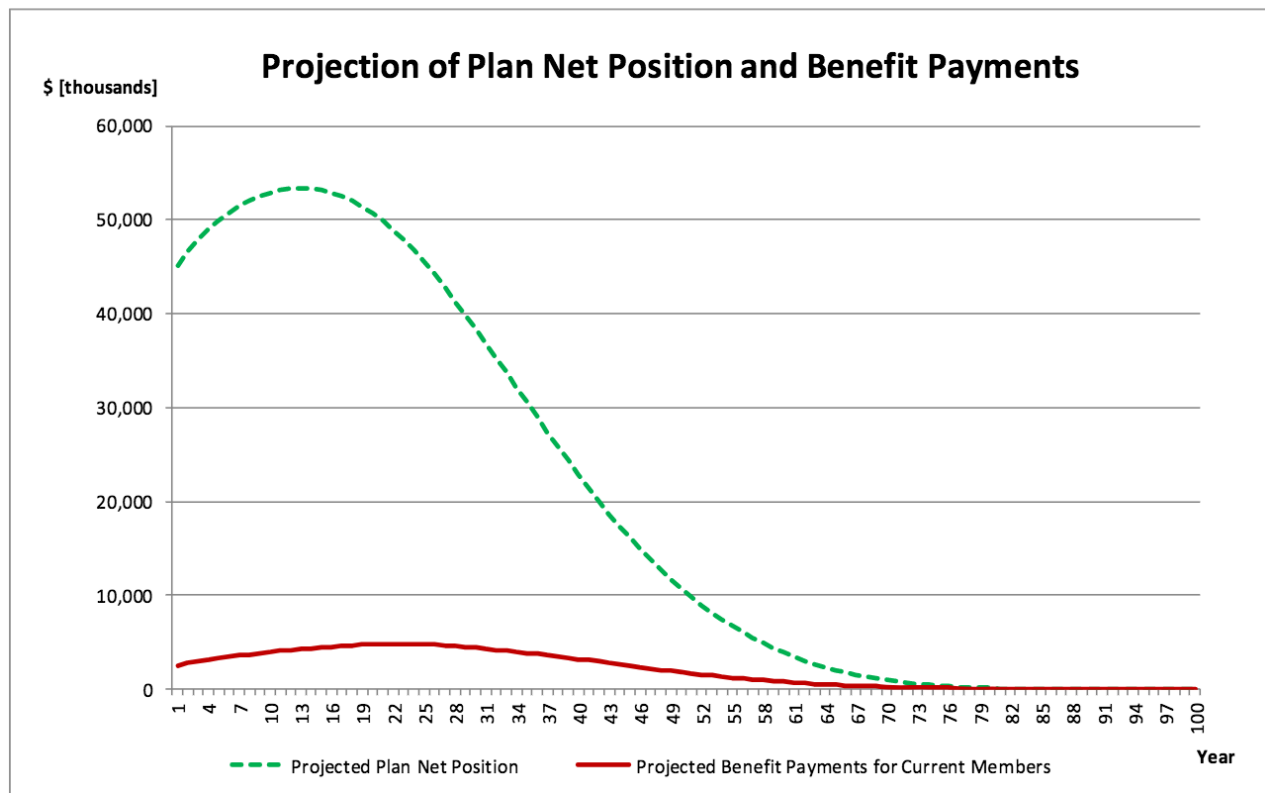
The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

# 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 <sup>a</sup> ((a)-.5)	(g)=(e)*vf <sup>a</sup> ((a)-.5)	(h)=(c)/(1+sdr) <sup>a</sup> ((a)-.5)
2068	\$ 10,721,985	\$ 1,655,692	\$ 1,655,692	\$ 0	\$ 42,939	\$ 0	\$ 42,939
2069	9,809,508	1,538,020	1,538,020	0	37,104	0	37,104
2070	8,950,583	1,424,786	1,424,786	0	31,975	0	31,975
2071	8,144,628	1,316,187	1,316,187	0	27,477	0	27,477
2072	7,390,823	1,212,468	1,212,468	0	23,546	0	23,546
2073	6,688,021	1,113,795	1,113,795	0	20,120	0	20,120
2074	6,034,815	1,020,339	1,020,339	0	17,146	0	17,146
2075	5,429,516	932,246	932,246	0	14,573	0	14,573
2076	4,870,157	849,585	849,585	0	12,354	0	12,354
2077	4,354,550	772,298	772,298	0	10,447	0	10,447
2078	3,880,406	700,248	700,248	0	8,811	0	8,811
2079	3,445,404	633,246	633,246	0	7,412	0	7,412
2080	3,047,246	571,059	571,059	0	6,218	0	6,218
2081	2,683,703	513,418	513,418	0	5,200	0	5,200
2082	2,352,658	460,053	460,053	0	4,335	0	4,335
2083	2,052,114	410,705	410,705	0	3,600	0	3,600
2084	1,780,195	365,139	365,139	0	2,977	0	2,977
2085	1,535,125	323,135	323,135	0	2,451	0	2,451
2086	1,315,226	284,488	284,488	0	2,007	0	2,007
2087	1,118,905	249,039	249,039	0	1,634	0	1,634
2088	944,613	216,636	216,636	0	1,323	0	1,323
2089	790,846	187,132	187,132	0	1,063	0	1,063
2090	656,136	160,397	160,397	0	847	0	847
2091	539,043	136,302	136,302	0	670	0	670
2092	438,150	114,727	114,727	0	524	0	524
2093	352,060	95,560	95,560	0	406	0	406
2094	279,386	78,684	78,684	0	311	0	311
2095	218,758	63,980	63,980	0	235	0	235
2096	168,829	51,314	51,314	0	176	0	176
2097	128,288	40,543	40,543	0	129	0	129
2098	95,874	31,515	31,515	0	93	0	93
2099	70,389	24,075	24,075	0	66	0	66
2100	50,707	18,050	18,050	0	46	0	46
2101	35,795	13,263	13,263	0	32	0	32
2102	24,728	9,539	9,539	0	21	0	21
2103	16,693	6,705	6,705	0	14	0	14
2104	10,993	4,597	4,597	0	9	0	9
2105	7,051	3,069	3,069	0	5	0	5
2106	4,398	1,991	1,991	0	3	0	3
2107	2,663	1,254	1,254	0	2	0	2
2108	1,563	766	766	0	1	0	1
2109	886	452	452	0	1	0	1
2110	484	257	257	0	0	0	0
2111	254	140	140	0	0	0	0
2112	128	73	73	0	0	0	0
2113	62	37	37	0	0	0	0
2114	29	18	18	0	0	0	0
2115	13	8	8	0	0	0	0
2116	5	4	4	0	0	0	0
2117	1	2	1	0	0	0	0
<b>Totals</b>					\$ 50,438,505	\$ -	\$ 50,438,505

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**

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**GLOSSARY OF TERMS**

## Glossary of Terms

<b>Actuarial Accrued Liability (AAL)</b>	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."
<b>Actuarial Assumptions</b>	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.
<b>Accrued Service</b>	Service credited under the fund which was rendered before the date of the actuarial valuation.
<b>Actuarial Equivalent</b>	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.
<b>Actuarial Cost Method</b>	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.
<b>Actuarial Gain (Loss)</b>	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.
<b>Actuarial Present Value (APV)</b>	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.
<b>Actuarial Valuation</b>	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.
<b>Actuarial Valuation Date</b>	The date as of which an actuarial valuation is performed.
<b>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</b>	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)

<b>Amortization Payment</b>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<b>Amortization Method</b>	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).
<b>Cost-of-Living Adjustments</b>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<b>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</b>	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.
<b>Covered Valuation Payroll</b>	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.
<b>Deferred Inflows and Outflows</b>	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.
<b>Discount Rate</b>	<p>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:</p> <ol style="list-style-type: none"><li>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; and</li><li>2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.</li></ol>
<b>Entry Age Actuarial Cost Method (EAN)</b>	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)

<b><i>GASB</i></b>	The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.
<b><i>Fiduciary Net Position</i></b>	The fiduciary net position is the value of the assets of the trust.
<b><i>Long-Term Expected Rate of Return</i></b>	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.
<b><i>Money-Weighted Rate of Return</i></b>	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.
<b><i>Multiple-Employer Defined Benefit Pension Plan</i></b>	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
<b><i>Municipal Bond Rate</i></b>	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.
<b><i>Net Pension Liability (NPL)</i></b>	The NPL is the liability of employers and non-employer contribution entities to plan members for benefits provided through a defined benefit pension plan.
<b><i>Non-Employer Contribution Entities</i></b>	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.
<b><i>Normal Cost</i></b>	The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.
<b><i>Other Postemployment Benefits (OPEB)</i></b>	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.
<b><i>Real Rate of Return</i></b>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<b><i>Service Cost</i></b>	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.