

# Alsip Merrionette Pk Lib Dist Regular

GASB Statement No. 68 Employer Reporting

Accounting Schedules

December 31, 2017



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April 6, 2018

Alsip Merrionette Pk Lib Dist  
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 Alsip Merrionette Pk Lib Dist only in its entirety and only with the permission of Alsip Merrionette Pk Lib Dist. 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 Alsip Merrionette Pk Lib Dist. 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**

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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		25	
- Inactive, Non-Retired Members		19	
- Active Members		19	
- Total		63	
Covered Valuation Payroll <sup>(1)</sup>	\$	833,790	P-2 ↓

## Net Pension Liability

Total Pension Liability/(Asset)		\$ 4,725,511	
Plan Fiduciary Net Position		4,579,029	
Net Pension Liability/(Asset)	\$	146,482	P-2
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		96.90%	
Net Pension Liability as a Percentage of Covered Valuation Payroll		17.57%	

## 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		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)** \$ 213,528

## 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	\$ 13,628	\$ 76,097	
Changes in assumptions	499	106,077	
Net difference between projected and actual earnings on pension plan investments	133,282	345,813	
<b>Total</b>	<b>\$ 147,409</b>	<b>\$ 527,987</b>	P-2      P-2

<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 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**

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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	\$	83,677
2. Interest on the Total Pension Liability		352,926
3. Current-Period Benefit Changes		0
4. Employee Contributions (made negative for addition here)		(37,521)
5. Projected Earnings on Plan Investments (made negative for addition here)		(298,496)
6. Other Changes in Plan Fiduciary Net Position		188,358
7. Recognition of Outflow (Inflow) of Resources due to Liabilities		(58,144)
8. Recognition of Outflow (Inflow) of Resources due to Assets		(17,272)
<b>9. Total Pension Expense/(Income)</b>	<b>\$</b>	<b>213,528</b>

# 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	\$ (115,776)
2. Assumption Changes (gains) or losses	\$ (154,375)
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	2.9178
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	\$ (39,679)
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$ (52,908)
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	<u>\$ (92,587)</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	\$ (76,097)
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$ (101,467)
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	<u>\$ (177,564)</u>

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

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ (432,266)
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	\$ (86,453)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$ (345,813)

\* 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	\$ 37,896	\$ 96,040	\$ (58,144)
2. Due to Assets	69,181	86,453	(17,272)
<b>3. Total</b>	<b>\$ 107,077</b>	<b>\$ 182,493</b>	<b>\$ (75,416)</b>

## 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	\$ 22,019	\$ 39,679	\$ (17,660)
2. Assumption changes	15,877	56,361	\$ (40,484)
3. Net difference between projected and actual earnings on pension plan investments	69,181	86,453	(17,272)
<b>4. Total</b>	<b>\$ 107,077</b>	<b>\$ 182,493</b>	<b>\$ (75,416)</b>

## 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	\$ 13,628	\$ 76,097	\$ (62,469)
2. Assumption changes	499	106,077	\$ (105,578)
3. Net difference between projected and actual earnings on pension plan investments	133,282	345,813	(212,531)
<b>4. Total</b>	<b>\$ 147,409</b>	<b>\$ 527,987</b>	<b>\$ (380,578)</b>

## 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	\$ (101,818)
2019	(111,129)
2020	(81,177)
2021	(86,454)
2022	0
Thereafter	0
<b>Total</b>	<b>\$ (380,578)</b>

# 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	\$ 83,677
2. Interest on the Total Pension Liability	352,926
3. Changes of benefit terms	0
4. Difference between expected and actual experience of the Total Pension Liability	(115,776)
5. Changes of assumptions	(154,375)
6. Benefit payments, including refunds of employee contributions	(209,566)
7. Net change in total pension liability	\$ (43,114)
8. Total pension liability – beginning	4,768,625
9. Total pension liability – ending	<u><u>\$ 4,725,511</u></u>
<b>B. Plan fiduciary net position</b>	
1. Contributions – employer	\$ 97,054
2. Contributions – employee	37,521
3. Net investment income	730,762
4. Benefit payments, including refunds of employee contributions	(209,566)
5. Other (Net Transfer)	(188,358)
6. Net change in plan fiduciary net position	\$ 467,413
7. Plan fiduciary net position – beginning	4,111,616
8. Plan fiduciary net position – ending	<u><u>\$ 4,579,029</u></u>
<b>C. Net pension liability/(asset)</b>	<u><u>\$ 146,482</u></u>
<b>D. Plan fiduciary net position as a percentage of the total pension liability</b>	<b>96.90%</b>
<b>E. Covered Valuation payroll</b>	<b>\$ 833,790</b>
<b>F. Net pension liability as a percentage of covered valuation payroll</b>	<b>17.57%</b>

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

	1% Decrease <u>6.50%</u>	Current Single Discount Rate Assumption <u>7.50%</u>	1% Increase <u>8.50%</u>
Total Pension Liability	\$ 5,311,900	\$ 4,725,511	\$ 4,242,289
Plan Fiduciary Net Position	4,579,029	4,579,029	4,579,029
Net Pension Liability/(Asset)	\$ 732,871	\$ 146,482	\$ (336,740)

# 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	\$ 83,677	\$ 92,592	\$ 88,511	\$ 89,003						
Interest on the Total Pension Liability	352,926	334,517	315,641	284,241						
Benefit Changes	0	0	0	0						
Difference between Expected and Actual Experience	(115,776)	26,227	35,073	45,280						
Assumption Changes	(154,375)	(11,516)	5,578	183,111						
Benefit Payments and Refunds	(209,566)	(198,095)	(179,626)	(174,571)						
<b>Net Change in Total Pension Liability</b>	<b>(43,114)</b>	<b>243,725</b>	<b>265,177</b>	<b>427,064</b>						
<b>Total Pension Liability - Beginning</b>	<b>4,768,625</b>	<b>4,524,900</b>	<b>4,259,723</b>	<b>3,832,659</b>						
<b>Total Pension Liability - Ending (a)</b>	<b>\$ 4,725,511</b>	<b>\$ 4,768,625</b>	<b>\$ 4,524,900</b>	<b>\$ 4,259,723</b>						
<b>Plan Fiduciary Net Position</b>										
Employer Contributions	\$ 97,054	\$ 108,974	\$ 110,794	\$ 100,218						
Employee Contributions	37,521	36,565	39,854	34,928						
Pension Plan Net Investment Income	730,762	262,082	19,042	218,328						
Benefit Payments and Refunds	(209,566)	(198,095)	(179,626)	(174,571)						
Other	(188,358)	59,082	29,998	45,191						
<b>Net Change in Plan Fiduciary Net Position</b>	<b>467,413</b>	<b>268,608</b>	<b>20,062</b>	<b>224,094</b>						
<b>Plan Fiduciary Net Position - Beginning</b>	<b>4,111,616</b>	<b>3,843,008</b>	<b>3,822,946</b>	<b>3,598,852</b>						
<b>Plan Fiduciary Net Position - Ending (b)</b>	<b>\$ 4,579,029</b>	<b>\$ 4,111,616</b>	<b>\$ 3,843,008</b>	<b>\$ 3,822,946</b>						
<b>Net Pension Liability/(Asset) - Ending (a) - (b)</b>	<b>146,482</b>	<b>657,009</b>	<b>681,892</b>	<b>436,777</b>						
<b>Plan Fiduciary Net Position as a Percentage of Total Pension Liability</b>	<b>96.90%</b>	<b>86.22%</b>	<b>84.93%</b>	<b>89.75%</b>						
<b>Covered Valuation Payroll</b>	<b>\$ 833,790</b>	<b>\$ 812,561</b>	<b>\$ 885,645</b>	<b>\$ 800,174</b>						
<b>Net Pension Liability as a Percentage of Covered Valuation Payroll</b>	<b>17.57%</b>	<b>80.86%</b>	<b>76.99%</b>	<b>54.59%</b>						



# 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>
2014	\$ 95,861	\$ 100,218	\$ (4,357)	\$ 800,174	12.52%
2015	110,794	110,794	0	885,645	12.51%
2016	99,620	108,974	(9,354)	812,561	13.41%
2017	97,053 *	97,054	(1)	833,790	11.64%

\* Estimated based on contribution rate of 11.64% and covered valuation payroll of \$833,790.

# 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)	\$	857,291
2. Employer Contribution Reserve (EAF assets from IMRF)	\$	1,610,490
3. Annuitant Reserve	\$	2,111,624
4. Miscellaneous Adjustment*	\$	(376)
<b>5. Net Market Value</b>	<b>\$</b>	<b>4,579,029</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	\$	97,054
b.) Accelerated payments and Reserve Payments		-
	<b>\$</b>	<b>97,054</b>

#### 2. Member

a.) Wage Reporting	\$	37,521
b.) Member Payments (i.e. ERI, Pension Payments)		-
<b>Sub-total (Amount used for valuation on Schedule of Changes Page 10)</b>	<b>\$</b>	<b>37,521</b>

c.) Voluntary Additional Plan	\$	17,442
<b>Total Member Contributions (a+b+c)</b>	<b>\$</b>	<b>54,963</b>

<b>Total Employer and Member Contributions (1+2)</b>	<b>\$</b>	<b>152,017</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.

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	\$ 833,790				
2018	843,130	\$ 37,941	\$ 57,460	\$ 24,341	\$ 119,742
2019	783,086	35,239	43,984	20,282	99,505
2020	733,680	33,016	40,993	15,654	89,663
2021	689,241	31,016	38,578	10,387	79,981
2022	646,924	29,112	36,209	4,399	69,720
2023	608,732	27,393	34,012	4,509	65,914
2024	571,307	25,709	31,808	4,622	62,139
2025	534,904	24,071	29,677	4,737	58,484
2026	503,486	22,657	27,736	4,856	55,249
2027	476,654	21,449	26,070	4,977	52,497
2028	451,431	20,314	24,513	5,102	49,930
2029	425,121	19,130	22,876	5,229	47,235
2030	400,441	18,020	21,351	5,360	44,731
2031	381,302	17,159	20,106	5,494	42,759
2032	364,784	16,415	19,056	5,631	41,102
2033	349,888	15,745	18,106	5,772	39,623
2034	338,980	15,254	17,375	5,916	38,545
2035	332,169	14,948	16,895	6,064	37,907
2036	326,977	14,714	16,535	6,216	37,465
2037	319,177	14,363	16,046	6,371	36,780
2038	310,327	13,965	15,480	6,530	35,974
2039	303,194	13,644	15,005	6,694	35,342
2040	296,566	13,345	14,560	6,861	34,767
2041	291,063	13,098	14,176	7,032	34,305
2042	286,664	12,900	13,877	7,208	33,985
2043	277,567	12,491	13,355	0	25,845
2044	260,827	11,737	12,421	0	24,158
2045	245,398	11,043	11,494	0	22,537
2046	211,044	9,497	9,698	0	19,195
2047	169,120	7,610	7,772	0	15,382
2048	147,218	6,625	6,823	0	13,448
2049	130,204	5,859	5,983	0	11,842
2050	116,204	5,229	5,260	0	10,489
2051	91,676	4,125	4,069	0	8,194
2052	61,475	2,766	2,734	0	5,501
2053	44,857	2,019	2,075	0	4,093
2054	37,502	1,688	1,782	0	3,470
2055	25,589	1,152	1,201	0	2,353
2056	13,070	588	634	0	1,222
2057	8,567	386	471	0	857
2058	6,375	287	377	0	664
2059	4,968	224	301	0	524
2060	3,930	177	242	0	418
2061	3,141	141	192	0	333
2062	2,427	109	148	0	257
2063	1,850	83	113	0	196
2064	1,135	51	70	0	121
2065	538	24	32	0	56
2066	428	19	26	0	45
2067	340	15	21	0	36

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	\$ 270	\$ 12	\$ 17	\$ 0	\$ 29
2069	123	6	7	0	13
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	\$	4,579,029	\$	119,742	\$	226,535	\$	339,495	\$	4,811,730
2019		4,811,730		99,505		258,324		355,032		5,007,943
2020		5,007,943		89,663		278,694		368,635		5,187,548
2021		5,187,548		79,981		297,235		381,066		5,351,359
2022		5,351,359		69,720		317,005		392,246		5,496,320
2023		5,496,320		65,914		335,025		402,315		5,629,524
2024		5,629,524		62,139		352,700		411,515		5,750,478
2025		5,750,478		58,485		370,643		419,792		5,858,111
2026		5,858,111		55,248		387,102		427,139		5,953,397
2027		5,953,397		52,497		401,588		433,651		6,037,957
2028		6,037,957		49,929		416,119		439,363		6,111,130
2029		6,111,130		47,235		431,157		444,198		6,171,407
2030		6,171,407		44,731		444,841		448,123		6,219,419
2031		6,219,419		42,758		454,939		451,279		6,258,518
2032		6,258,518		41,102		463,499		453,835		6,289,957
2033		6,289,957		39,623		470,472		455,882		6,314,989
2034		6,314,989		38,545		474,381		457,576		6,336,729
2035		6,336,729		37,907		474,608		459,174		6,359,203
2036		6,359,203		37,465		473,840		460,872		6,383,700
2037		6,383,700		36,780		479,601		462,472		6,403,351
2038		6,403,351		35,975		483,570		463,770		6,419,526
2039		6,419,526		35,342		488,632		464,773		6,431,008
2040		6,431,008		34,767		492,687		465,464		6,438,552
2041		6,438,552		34,306		487,903		466,189		6,451,144
2042		6,451,144		33,985		481,369		467,362		6,471,122
2043		6,471,122		25,845		479,056		468,646		6,486,558
2044		6,486,558		24,158		494,709		469,165		6,485,173
2045		6,485,173		22,537		507,607		468,527		6,468,630
2046		6,468,630		19,195		527,326		466,437		6,426,935
2047		6,426,935		15,382		541,451		462,649		6,363,515
2048		6,363,515		13,448		545,580		457,669		6,289,052
2049		6,289,052		11,842		546,243		452,001		6,206,653
2050		6,206,653		10,489		544,723		445,827		6,118,246
2051		6,118,246		8,194		559,081		438,584		6,005,942
2052		6,005,942		5,501		567,495		429,752		5,873,700
2053		5,873,700		4,093		561,351		420,008		5,736,450
2054		5,736,450		3,470		551,374		410,059		5,598,605
2055		5,598,605		2,353		554,525		399,563		5,445,995
2056		5,445,995		1,222		553,981		388,096		5,281,332
2057		5,281,332		857		542,861		376,142		5,115,469
2058		5,115,469		664		530,590		364,147		4,949,690
2059		4,949,690		524		518,158		352,166		4,784,223
2060		4,784,223		418		506,034		340,199		4,618,807
2061		4,618,807		333		494,313		328,221		4,453,048
2062		4,453,048		257		483,057		316,201		4,286,449
2063		4,286,449		196		471,894		304,115		4,118,866
2064		4,118,866		121		461,599		291,922		3,949,311
2065		3,949,311		56		450,956		279,595		3,778,007
2066		3,778,007		45		440,178		267,144		3,605,019
2067		3,605,019		36		429,523		254,562		3,430,094

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	\$ 3,430,094	\$ 29	\$ 418,885	\$ 241,834	\$ 3,253,072					
2069	3,253,072	13	408,406	228,943	3,073,622					
2070	3,073,622	0	397,398	215,889	2,892,113					
2071	2,892,113	0	385,812	202,702	2,709,003					
2072	2,709,003	0	373,612	189,418	2,524,809					
2073	2,524,809	0	360,640	176,081	2,340,250					
2074	2,340,250	0	346,766	162,750	2,156,234					
2075	2,156,234	0	331,898	149,496	1,973,833					
2076	1,973,833	0	315,990	136,402	1,794,245					
2077	1,794,245	0	299,054	123,557	1,618,748					
2078	1,618,748	0	281,155	111,053	1,448,646					
2079	1,448,646	0	262,406	98,986	1,285,227					
2080	1,285,227	0	242,947	87,446	1,129,727					
2081	1,129,727	0	222,946	76,520	983,301					
2082	983,301	0	202,639	66,286	846,947					
2083	846,947	0	182,298	56,808	721,458					
2084	721,458	0	162,224	48,136	607,370					
2085	607,370	0	142,706	40,298	504,963					
2086	504,963	0	123,983	33,307	414,286					
2087	414,286	0	106,285	27,158	335,159					
2088	335,159	0	89,828	21,829	267,160					
2089	267,160	0	74,791	17,283	209,652					
2090	209,652	0	61,297	13,467	161,822					
2091	161,822	0	49,401	10,318	122,738					
2092	122,738	0	39,106	7,765	91,398					
2093	91,398	0	30,378	5,736	66,755					
2094	66,755	0	23,142	4,155	47,768					
2095	47,768	0	17,266	2,947	33,449					
2096	33,449	0	12,596	2,045	22,898					
2097	22,898	0	8,977	1,387	15,308					
2098	15,308	0	6,247	918	9,979					
2099	9,979	0	4,238	592	6,334					
2100	6,334	0	2,797	372	3,909					
2101	3,909	0	1,792	227	2,344					
2102	2,344	0	1,115	135	1,364					
2103	1,364	0	673	78	769					
2104	769	0	393	43	420					
2105	420	0	222	23	222					
2106	222	0	121	12	112					
2107	112	0	64	6	54					
2108	54	0	33	3	25					
2109	25	0	15	1	11					
2110	11	0	6	1	5					
2111	5	0	3	0	2					
2112	2	0	2	0	0					
2113	0	0	1	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

## 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 <sup>(a)-.5</sup>	(g)=(e)*vf <sup>(a)-.5</sup>	(h)=(c)/(1+sdr) <sup>(a)-.5</sup>
2018	\$ 4,579,029	\$ 226,535	\$ 226,535	\$ 0	\$ 218,490	\$ 0	\$ 218,490
2019	4,811,730	258,324	258,324	0	231,767	0	231,767
2020	5,007,943	278,694	278,694	0	232,598	0	232,598
2021	5,187,548	297,235	297,235	0	230,765	0	230,765
2022	5,351,359	317,005	317,005	0	228,943	0	228,943
2023	5,496,320	335,025	335,025	0	225,077	0	225,077
2024	5,629,524	352,700	352,700	0	220,420	0	220,420
2025	5,750,478	370,643	370,643	0	215,473	0	215,473
2026	5,858,111	387,102	387,102	0	209,340	0	209,340
2027	5,953,397	401,588	401,588	0	202,023	0	202,023
2028	6,037,957	416,119	416,119	0	194,728	0	194,728
2029	6,111,130	431,157	431,157	0	187,689	0	187,689
2030	6,171,407	444,841	444,841	0	180,135	0	180,135
2031	6,219,419	454,939	454,939	0	171,372	0	171,372
2032	6,258,518	463,499	463,499	0	162,415	0	162,415
2033	6,289,957	470,472	470,472	0	153,357	0	153,357
2034	6,314,989	474,381	474,381	0	143,843	0	143,843
2035	6,336,729	474,608	474,608	0	133,871	0	133,871
2036	6,359,203	473,840	473,840	0	124,330	0	124,330
2037	6,383,700	479,601	479,601	0	117,062	0	117,062
2038	6,403,351	483,570	483,570	0	109,796	0	109,796
2039	6,419,526	488,632	488,632	0	103,205	0	103,205
2040	6,431,008	492,687	492,687	0	96,801	0	96,801
2041	6,438,552	487,903	487,903	0	89,173	0	89,173
2042	6,451,144	481,369	481,369	0	81,841	0	81,841
2043	6,471,122	479,056	479,056	0	75,765	0	75,765
2044	6,486,558	494,709	494,709	0	72,782	0	72,782
2045	6,485,173	507,607	507,607	0	69,470	0	69,470
2046	6,468,630	527,326	527,326	0	67,133	0	67,133
2047	6,426,935	541,451	541,451	0	64,122	0	64,122
2048	6,363,515	545,580	545,580	0	60,104	0	60,104
2049	6,289,052	546,243	546,243	0	55,978	0	55,978
2050	6,206,653	544,723	544,723	0	51,928	0	51,928
2051	6,118,246	559,081	559,081	0	49,578	0	49,578
2052	6,005,942	567,495	567,495	0	46,813	0	46,813
2053	5,873,700	561,351	561,351	0	43,076	0	43,076
2054	5,736,450	551,374	551,374	0	39,358	0	39,358
2055	5,598,605	554,525	554,525	0	36,822	0	36,822
2056	5,445,995	553,981	553,981	0	34,219	0	34,219
2057	5,281,332	542,861	542,861	0	31,193	0	31,193
2058	5,115,469	530,590	530,590	0	28,361	0	28,361
2059	4,949,690	518,158	518,158	0	25,764	0	25,764
2060	4,784,223	506,034	506,034	0	23,406	0	23,406
2061	4,618,807	494,313	494,313	0	21,268	0	21,268
2062	4,453,048	483,057	483,057	0	19,334	0	19,334
2063	4,286,449	471,894	471,894	0	17,569	0	17,569
2064	4,118,866	461,599	461,599	0	15,987	0	15,987
2065	3,949,311	450,956	450,956	0	14,529	0	14,529
2066	3,778,007	440,178	440,178	0	13,192	0	13,192
2067	3,605,019	429,523	429,523	0	11,975	0	11,975

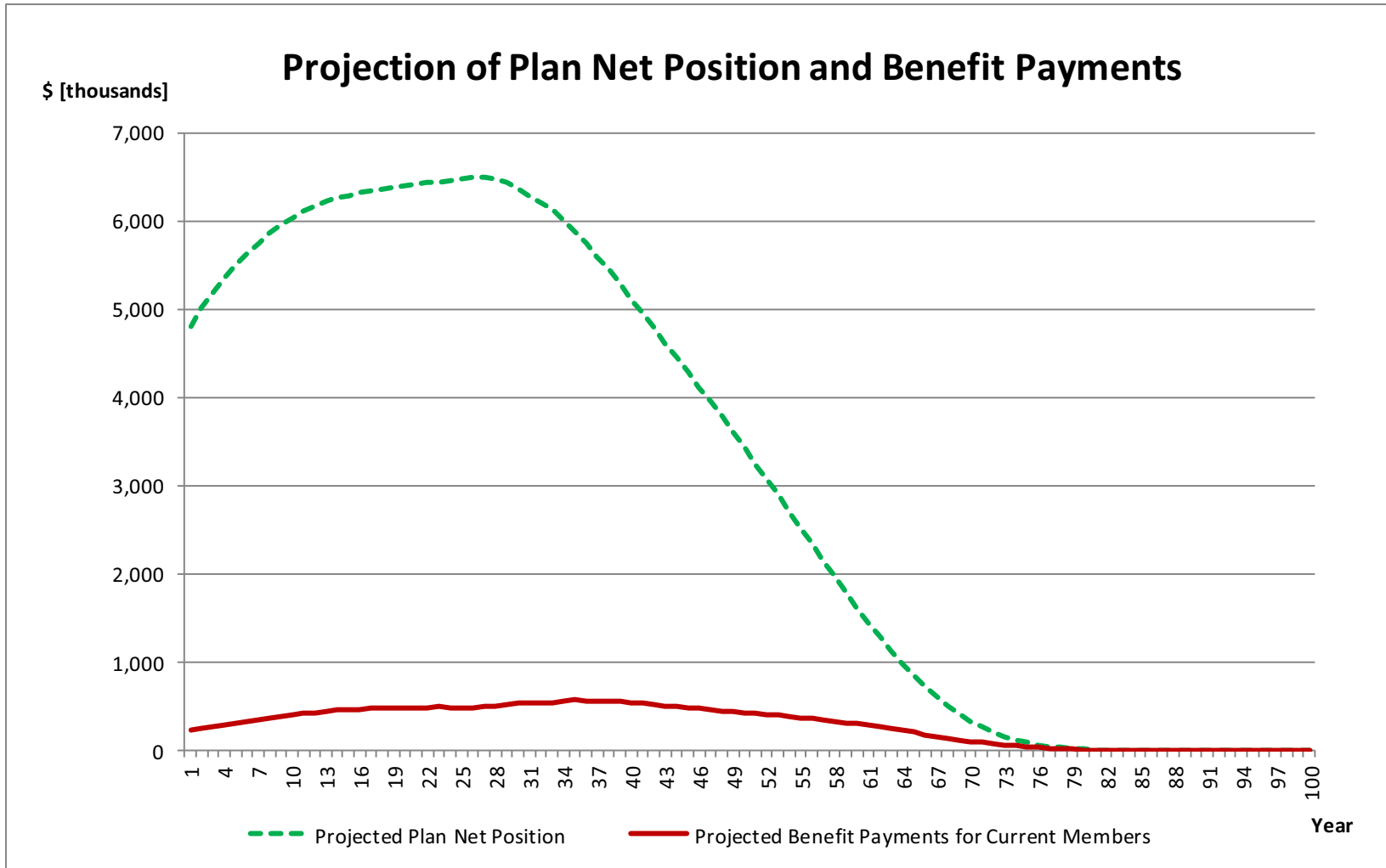
The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

# 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)-.5)</sup>	(g)=(e)*vf <sup>((a)-.5)</sup>	(h)=(c)/(1+sdr) <sup>((a)-.5)</sup>
2068	\$ 3,430,094	\$ 418,885	\$ 418,885	\$ 0	\$ 10,863	\$ 0	\$ 10,863
2069	3,253,072	408,406	408,406	0	9,853	0	9,853
2070	3,073,622	397,398	397,398	0	8,918	0	8,918
2071	2,892,113	385,812	385,812	0	8,054	0	8,054
2072	2,709,003	373,612	373,612	0	7,255	0	7,255
2073	2,524,809	360,640	360,640	0	6,515	0	6,515
2074	2,340,250	346,766	346,766	0	5,827	0	5,827
2075	2,156,234	331,898	331,898	0	5,188	0	5,188
2076	1,973,833	315,990	315,990	0	4,595	0	4,595
2077	1,794,245	299,054	299,054	0	4,045	0	4,045
2078	1,618,748	281,155	281,155	0	3,538	0	3,538
2079	1,448,646	262,406	262,406	0	3,072	0	3,072
2080	1,285,227	242,947	242,947	0	2,645	0	2,645
2081	1,129,727	222,946	222,946	0	2,258	0	2,258
2082	983,301	202,639	202,639	0	1,909	0	1,909
2083	846,947	182,298	182,298	0	1,598	0	1,598
2084	721,458	162,224	162,224	0	1,323	0	1,323
2085	607,370	142,706	142,706	0	1,082	0	1,082
2086	504,963	123,983	123,983	0	875	0	875
2087	414,286	106,285	106,285	0	698	0	698
2088	335,159	89,828	89,828	0	548	0	548
2089	267,160	74,791	74,791	0	425	0	425
2090	209,652	61,297	61,297	0	324	0	324
2091	161,822	49,401	49,401	0	243	0	243
2092	122,738	39,106	39,106	0	179	0	179
2093	91,398	30,378	30,378	0	129	0	129
2094	66,755	23,142	23,142	0	92	0	92
2095	47,768	17,266	17,266	0	64	0	64
2096	33,449	12,596	12,596	0	43	0	43
2097	22,898	8,977	8,977	0	29	0	29
2098	15,308	6,247	6,247	0	19	0	19
2099	9,979	4,238	4,238	0	12	0	12
2100	6,334	2,797	2,797	0	7	0	7
2101	3,909	1,792	1,792	0	4	0	4
2102	2,344	1,115	1,115	0	2	0	2
2103	1,364	673	673	0	1	0	1
2104	769	393	393	0	1	0	1
2105	420	222	222	0	0	0	0
2106	222	121	121	0	0	0	0
2107	112	64	64	0	0	0	0
2108	54	33	33	0	0	0	0
2109	25	15	15	0	0	0	0
2110	11	6	6	0	0	0	0
2111	5	3	3	0	0	0	0
2112	2	2	2	0	0	0	0
2113	0	1	1	0	0	0	0
2114	0	0	0	0	0	0	0
2115	0	0	0	0	0	0	0
2116	0	0	0	0	0	0	0
2117	0	0	0	0	0	0	0
<b>Totals</b>					\$ 5,346,473	\$ -	\$ 5,346,473

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><i>Actuarial Accrued Liability (AAL)</i></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><i>Actuarial Assumptions</i></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><i>Accrued Service</i></b>	Service credited under the fund which was rendered before the date of the actuarial valuation.
<b><i>Actuarial Equivalent</i></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><i>Actuarial Cost Method</i></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><i>Actuarial Gain (Loss)</i></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><i>Actuarial Present Value (APV)</i></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><i>Actuarial Valuation</i></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><i>Actuarial Valuation Date</i></b>	The date as of which an actuarial valuation is performed.
<b><i>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</i></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><i>Amortization Payment</i></b>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<b><i>Amortization Method</i></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><i>Cost-of-Living Adjustments</i></b>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<b><i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i></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><i>Covered Valuation Payroll</i></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><i>Deferred Inflows and Outflows</i></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><i>Discount Rate</i></b>	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"><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><i>Entry Age Actuarial Cost Method (EAN)</i></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.