

# Arlington Heights Park Dist Regular

GASB Statement No. 68 Employer Reporting

Accounting Schedules

December 31, 2017



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April 6, 2018

Arlington Heights Park 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 Arlington Heights Park Dist only in its entirety and only with the permission of Arlington Heights Park 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 Arlington Heights Park 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	April 30, 2018

## Membership

Number of	
- Retirees and Beneficiaries	167
- Inactive, Non-Retired Members	148
- Active Members	148
- Total	463
Covered Valuation Payroll <sup>(1)</sup>	\$ 7,016,964

## Net Pension Liability

Total Pension Liability/(Asset)	\$ 53,051,176
Plan Fiduciary Net Position	47,335,751
Net Pension Liability/(Asset)	\$ 5,715,425
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	89.23%
Net Pension Liability as a Percentage of Covered Valuation Payroll	81.45%

## 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)** \$ 2,168,691

## 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	\$ 926,813	\$ 303,793
Changes in assumptions	5,738	1,183,234
Net difference between projected and actual earnings on pension plan investments	1,340,489	3,667,734
<b>Total</b>	<b>\$ 2,273,040</b>	<b>\$ 5,154,761</b>

<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	\$	680,014
2. Interest on the Total Pension Liability		3,923,085
3. Current-Period Benefit Changes		0
4. Employee Contributions (made negative for addition here)		(332,779)
5. Projected Earnings on Plan Investments (made negative for addition here)		(3,078,636)
6. Other Changes in Plan Fiduciary Net Position		1,155,125
7. Recognition of Outflow (Inflow) of Resources due to Liabilities		104,620
8. Recognition of Outflow (Inflow) of Resources due to Assets		(282,738)
<b>9. Total Pension Expense/(Income)</b>	<b>\$</b>	<b>2,168,691</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	\$ (445,945)
2. Assumption Changes (gains) or losses	\$ (1,631,419)
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	3.1371
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	\$ (142,152)
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$ (520,040)
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	<u>\$ (662,192)</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	\$ (303,793)
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$ (1,111,379)
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	<u>\$ (1,415,172)</u>

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

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ (4,584,668)
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	\$ (916,934)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$ (3,667,734)

\* 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	\$ 824,489	\$ 719,869	\$ 104,620
2. Due to Assets	634,196	916,934	(282,738)
<b>3. Total</b>	<b>\$ 1,458,685</b>	<b>\$ 1,636,803</b>	<b>\$ (178,118)</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	\$ 806,747	\$ 142,152	\$ 664,595
2. Assumption changes	17,742	577,717	\$ (559,975)
3. Net difference between projected and actual earnings on pension plan investments	634,196	916,934	(282,738)
<b>4. Total</b>	<b>\$ 1,458,685</b>	<b>\$ 1,636,803</b>	<b>\$ (178,118)</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	\$ 926,813	\$ 303,793	\$ 623,020
2. Assumption changes	5,738	1,183,234	\$ (1,177,496)
3. Net difference between projected and actual earnings on pension plan investments	1,340,489	3,667,734	(2,327,245)
<b>4. Total</b>	<b>\$ 2,273,040</b>	<b>\$ 5,154,761</b>	<b>\$ (2,881,721)</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	\$ (247,506)
2019	(781,660)
2020	(935,623)
2021	(916,932)
2022	0
Thereafter	0
<b>Total</b>	<b>\$ (2,881,721)</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	\$ 680,014
2. Interest on the Total Pension Liability	3,923,085
3. Changes of benefit terms	0
4. Difference between expected and actual experience of the Total Pension Liability	(445,945)
5. Changes of assumptions	(1,631,419)
6. Benefit payments, including refunds of employee contributions	(2,884,700)
7. Net change in total pension liability	\$ (358,965)
8. Total pension liability – beginning	53,410,141
9. Total pension liability – ending	<u>\$ 53,051,176</u>
<b>B. Plan fiduciary net position</b>	
1. Contributions – employer	\$ 954,971
2. Contributions – employee	332,779
3. Net investment income	7,663,304
4. Benefit payments, including refunds of employee contributions	(2,884,700)
5. Other (Net Transfer)	(1,155,125)
6. Net change in plan fiduciary net position	\$ 4,911,229
7. Plan fiduciary net position – beginning	42,424,522
8. Plan fiduciary net position – ending	<u>\$ 47,335,751</u>
<b>C. Net pension liability/(asset)</b>	<u>\$ 5,715,425</u>
<b>D. Plan fiduciary net position as a percentage of the total pension liability</b>	<b>89.23%</b>
<b>E. Covered Valuation payroll</b>	<b>\$ 7,016,964</b>
<b>F. Net pension liability as a percentage of covered valuation payroll</b>	<b>81.45%</b>

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

	1% Decrease	Current Single Discount Rate Assumption	1% Increase
	6.50%	7.50%	8.50%
Total Pension Liability	\$ 59,364,409	\$ 53,051,176	\$ 47,867,655
Plan Fiduciary Net Position	47,335,751	47,335,751	47,335,751
Net Pension Liability/(Asset)	\$ 12,028,658	\$ 5,715,425	\$ 531,904

# 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	\$ 680,014	\$ 809,218	\$ 789,221							
Interest on the Total Pension Liability	3,923,085	3,609,206	3,429,032							
Benefit Changes	0	0	0							
Difference between Expected and Actual Experience	(445,945)	2,343,249	281,872							
Assumption Changes	(1,631,419)	(187,209)	58,964							
Benefit Payments and Refunds	(2,884,700)	(2,151,447)	(2,040,059)							
<b>Net Change in Total Pension Liability</b>	<b>(358,965)</b>	<b>4,423,017</b>	<b>2,519,030</b>							
<b>Total Pension Liability - Beginning</b>	<b>53,410,141</b>	<b>48,987,124</b>	<b>46,468,094</b>							
<b>Total Pension Liability - Ending (a)</b>	<b>\$ 53,051,176</b>	<b>\$ 53,410,141</b>	<b>\$ 48,987,124</b>							
<b>Plan Fiduciary Net Position</b>										
Employer Contributions	\$ 954,971	\$ 1,118,470	\$ 1,105,091							
Employee Contributions	332,779	349,656	350,591							
Pension Plan Net Investment Income	7,663,304	2,641,923	199,453							
Benefit Payments and Refunds	(2,884,700)	(2,151,447)	(2,040,059)							
Other	(1,155,125)	184,143	483,935							
<b>Net Change in Plan Fiduciary Net Position</b>	<b>4,911,229</b>	<b>2,142,745</b>	<b>99,011</b>							
<b>Plan Fiduciary Net Position - Beginning</b>	<b>42,424,522</b>	<b>40,281,777</b>	<b>40,182,766</b>							
<b>Plan Fiduciary Net Position - Ending (b)</b>	<b>\$ 47,335,751</b>	<b>\$ 42,424,522</b>	<b>\$ 40,281,777</b>							
<b>Net Pension Liability/(Asset) - Ending (a) - (b)</b>	<b>5,715,425</b>	<b>10,985,619</b>	<b>8,705,347</b>							
<b>Plan Fiduciary Net Position as a Percentage of Total Pension Liability</b>	<b>89.23%</b>	<b>79.43%</b>	<b>82.23%</b>							
<b>Covered Valuation Payroll</b>	<b>\$ 7,016,964</b>	<b>\$ 7,767,307</b>	<b>\$ 7,574,305</b>							
<b>Net Pension Liability as a Percentage of Covered Valuation Payroll</b>	<b>81.45%</b>	<b>141.43%</b>	<b>114.93%</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>
2015	\$ 1,105,091	\$ 1,105,091	\$ 0	\$ 7,574,305	14.59%
2016	1,118,492	1,118,470	22	7,767,307	14.40%
2017	962,727 *	954,971	7,756	7,016,964	13.61%

\* Estimated based on contribution rate of 13.72% and covered valuation payroll of \$7,016,964.

# 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)	\$	7,208,118
2. Employer Contribution Reserve (EAF assets from IMRF)	\$	8,267,159
3. Annuitant Reserve	\$	31,864,359
4. Miscellaneous Adjustment*	\$	(3,885)
<b>5. Net Market Value</b>	\$	<b>47,335,751</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	\$	954,971
b.) Accelerated payments and Reserve Payments		-
	\$	<b>954,971</b>

#### 2. Member

a.) Wage Reporting	\$	313,352
b.) Member Payments (i.e. ERI, Pension Payments)		19,427
<b>Sub-total (Amount used for valuation on Schedule of Changes Page 10)</b>	\$	<b>332,779</b>

c.) Voluntary Additional Plan	\$	40,506
<b>Total Member Contributions (a+b+c)</b>	\$	<b>373,285</b>

<b>Total Employer and Member Contributions (1+2)</b>	\$	<b>1,328,256</b>
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## **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	\$ 7,016,964				
2018	6,790,744	\$ 305,584	\$ 458,470	\$ 554,648	\$ 1,318,701
2019	6,308,161	283,867	353,921	520,263	1,158,051
2020	5,912,441	266,060	328,811	480,188	1,075,059
2021	5,572,151	250,747	309,887	433,697	994,331
2022	5,261,967	236,788	292,636	379,954	909,379
2023	4,994,088	224,734	277,739	389,453	891,926
2024	4,766,400	214,488	264,139	399,190	877,817
2025	4,559,354	205,171	252,216	409,169	866,556
2026	4,368,624	196,588	240,806	419,399	856,793
2027	4,191,972	188,639	229,832	429,884	848,355
2028	4,012,840	180,578	219,221	440,631	840,430
2029	3,832,275	172,452	208,603	451,646	832,702
2030	3,671,693	165,226	199,140	462,938	827,304
2031	3,513,051	158,087	189,845	474,511	822,443
2032	3,341,762	150,379	179,602	486,374	816,356
2033	3,172,318	142,754	169,560	498,533	810,847
2034	2,999,486	134,977	159,437	510,996	805,410
2035	2,825,913	127,166	149,377	523,771	800,314
2036	2,678,209	120,519	140,516	536,866	797,901
2037	2,553,607	114,912	132,974	550,287	798,173
2038	2,436,570	109,646	126,160	564,044	799,850
2039	2,317,274	104,277	119,072	578,146	801,495
2040	2,203,187	99,143	112,343	592,599	804,085
2041	2,091,787	94,130	105,634	607,414	807,178
2042	1,971,480	88,717	98,395	622,600	809,711
2043	1,840,665	82,830	90,780	0	173,610
2044	1,696,785	76,355	82,516	0	158,871
2045	1,546,842	69,608	74,007	0	143,615
2046	1,409,746	63,439	66,061	0	129,500
2047	1,280,330	57,615	58,737	0	116,352
2048	1,133,588	51,012	51,002	0	102,013
2049	973,975	43,829	43,150	0	86,979
2050	820,144	36,906	36,012	0	72,919
2051	688,105	30,965	30,011	0	60,976
2052	566,917	25,511	24,447	0	49,958
2053	461,499	20,767	19,720	0	40,487
2054	370,491	16,672	15,685	0	32,357
2055	286,145	12,877	12,030	0	24,906
2056	211,876	9,534	8,907	0	18,442
2057	152,557	6,865	6,444	0	13,309
2058	115,740	5,208	4,946	0	10,154
2059	73,404	3,303	3,144	0	6,447
2060	36,169	1,628	1,602	0	3,230
2061	18,308	824	896	0	1,720
2062	11,379	512	625	0	1,137
2063	8,218	370	480	0	850
2064	5,922	267	357	0	624
2065	3,777	170	229	0	399
2066	1,994	90	121	0	210
2067	997	45	60	0	105

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	\$ 542	\$ 24	\$ 33	\$ 0	\$ 58
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
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	\$	47,335,751	\$	1,318,701	\$	2,850,942	\$	3,493,761	\$	49,297,271
2019		49,297,271		1,158,051		3,002,133		3,629,392		51,082,582
2020		51,082,582		1,075,060		3,156,764		3,754,541		52,755,418
2021		52,755,418		994,331		3,303,172		3,871,640		54,318,216
2022		54,318,216		909,379		3,448,677		3,980,364		55,759,283
2023		55,759,283		891,926		3,617,295		4,081,592		57,115,506
2024		57,115,506		877,816		3,784,553		4,176,631		58,385,400
2025		58,385,400		866,557		3,944,533		4,265,568		59,572,991
2026		59,572,991		856,793		4,167,716		4,346,059		60,608,126
2027		60,608,126		848,354		4,380,664		4,415,543		61,491,359
2028		61,491,359		840,430		4,516,757		4,476,482		62,291,513
2029		62,291,513		832,702		4,649,861		4,531,308		63,005,662
2030		63,005,662		827,304		4,784,680		4,579,706		63,627,991
2031		63,627,991		822,443		4,937,719		4,620,566		64,133,281
2032		64,133,281		816,356		5,075,193		4,653,177		64,527,621
2033		64,527,621		810,847		5,191,436		4,678,269		64,825,301
2034		64,825,301		805,410		5,300,276		4,696,387		65,026,823
2035		65,026,823		800,314		5,407,802		4,707,354		65,126,689
2036		65,126,689		797,901		5,483,569		4,711,966		65,152,987
2037		65,152,987		798,173		5,547,079		4,711,609		65,115,691
2038		65,115,691		799,850		5,592,010		4,707,220		65,030,750
2039		65,030,750		801,495		5,633,722		4,699,374		64,897,896
2040		64,897,896		804,085		5,672,459		4,688,079		64,717,602
2041		64,717,602		807,178		5,708,378		4,673,348		64,489,749
2042		64,489,749		809,711		5,725,284		4,655,730		64,229,906
2043		64,229,906		173,610		5,744,005		4,612,129		63,271,640
2044		63,271,640		158,871		5,756,549		4,539,255		62,213,216
2045		62,213,216		143,615		5,747,992		4,459,626		61,068,465
2046		61,068,465		129,500		5,711,685		4,374,587		59,860,867
2047		59,860,867		116,352		5,662,499		4,285,344		58,600,065
2048		58,600,065		102,013		5,630,838		4,191,422		57,262,662
2049		57,262,662		86,979		5,610,574		4,091,309		55,830,376
2050		55,830,376		72,919		5,580,889		3,984,463		54,306,869
2051		54,306,869		60,976		5,514,649		3,872,200		52,725,395
2052		52,725,395		49,958		5,451,426		3,755,511		51,079,439
2053		51,079,439		40,487		5,370,705		3,634,688		49,383,909
2054		49,383,909		32,357		5,289,877		3,510,200		47,636,590
2055		47,636,590		24,906		5,197,850		3,382,266		45,845,912
2056		45,845,912		18,442		5,100,675		3,251,305		44,014,984
2057		44,014,984		13,309		4,979,208		3,118,269		42,167,354
2058		42,167,354		10,154		4,841,257		2,984,660		40,320,911
2059		40,320,911		6,447		4,723,984		2,850,359		38,453,733
2060		38,453,733		3,230		4,593,751		2,714,997		36,578,209
2061		36,578,209		1,720		4,436,676		2,580,061		34,723,315
2062		34,723,315		1,137		4,272,185		2,446,980		32,899,247
2063		32,899,247		850		4,106,752		2,316,256		31,109,601
2064		31,109,601		624		3,943,167		2,188,048		29,355,106
2065		29,355,106		399		3,781,543		2,062,403		27,636,365
2066		27,636,365		210		3,620,684		1,939,414		25,955,305
2067		25,955,305		105		3,459,727		1,819,257		24,314,941

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	\$ 24,314,941	\$ 58	\$ 3,299,847	\$ 1,702,116	\$ 22,717,268
2069	22,717,268	14	3,141,172	1,588,131	21,164,241
2070	21,164,241	0	2,983,578	1,477,457	19,658,120
2071	19,658,120	0	2,827,529	1,370,244	18,200,835
2072	18,200,835	0	2,673,228	1,266,629	16,794,235
2073	16,794,235	0	2,520,797	1,166,747	15,440,185
2074	15,440,185	0	2,370,407	1,070,731	14,140,509
2075	14,140,509	0	2,222,258	978,710	12,896,960
2076	12,896,960	0	2,076,609	890,807	11,711,158
2077	11,711,158	0	1,933,703	807,134	10,584,589
2078	10,584,589	0	1,793,737	727,795	9,518,647
2079	9,518,647	0	1,656,985	652,885	8,514,547
2080	8,514,547	0	1,523,802	582,481	7,573,227
2081	7,573,227	0	1,394,519	516,643	6,695,350
2082	6,695,350	0	1,269,443	455,408	5,881,315
2083	5,881,315	0	1,148,906	398,794	5,131,202
2084	5,131,202	0	1,033,294	346,792	4,444,700
2085	4,444,700	0	923,028	299,365	3,821,037
2086	3,821,037	0	818,539	256,437	3,258,935
2087	3,258,935	0	720,264	217,898	2,756,569
2088	2,756,569	0	628,611	183,596	2,311,555
2089	2,311,555	0	543,910	153,339	1,920,983
2090	1,920,983	0	466,399	126,900	1,581,484
2091	1,581,484	0	396,195	104,023	1,289,312
2092	1,289,312	0	333,304	84,425	1,040,433
2093	1,040,433	0	277,599	67,811	830,645
2094	830,645	0	228,801	53,873	655,717
2095	655,717	0	186,526	42,311	511,502
2096	511,502	0	150,320	32,828	394,009
2097	394,009	0	119,683	25,144	299,470
2098	299,470	0	94,076	18,996	224,391
2099	224,391	0	72,940	14,143	165,594
2100	165,594	0	55,727	10,368	120,234
2101	120,234	0	41,915	7,474	85,793
2102	85,793	0	31,002	5,293	60,083
2103	60,083	0	22,518	3,677	41,243
2104	41,243	0	16,035	2,503	27,710
2105	27,710	0	11,180	1,667	18,196
2106	18,196	0	7,622	1,084	11,659
2107	11,659	0	5,072	688	7,275
2108	7,275	0	3,287	425	4,412
2109	4,412	0	2,071	255	2,596
2110	2,596	0	1,266	148	1,478
2111	1,478	0	749	83	812
2112	812	0	428	45	429
2113	429	0	236	24	217
2114	217	0	126	12	103
2115	103	0	64	5	44
2116	44	0	32	2	14
2117	14	0	15	1	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	\$ 47,335,751	\$ 2,850,942	\$ 2,850,942	\$ 0	\$ 2,749,693	\$ 0	\$ 2,749,693
2019	49,297,271	3,002,133	3,002,133	0	2,693,501	0	2,693,501
2020	51,082,582	3,156,764	3,156,764	0	2,634,638	0	2,634,638
2021	52,755,418	3,303,172	3,303,172	0	2,564,494	0	2,564,494
2022	54,318,216	3,448,677	3,448,677	0	2,490,660	0	2,490,660
2023	55,759,283	3,617,295	3,617,295	0	2,430,174	0	2,430,174
2024	57,115,506	3,784,553	3,784,553	0	2,365,155	0	2,365,155
2025	58,385,400	3,944,533	3,944,533	0	2,293,148	0	2,293,148
2026	59,572,991	4,167,716	4,167,716	0	2,253,856	0	2,253,856
2027	60,608,126	4,380,664	4,380,664	0	2,203,736	0	2,203,736
2028	61,491,359	4,516,757	4,516,757	0	2,113,673	0	2,113,673
2029	62,291,513	4,649,861	4,649,861	0	2,024,150	0	2,024,150
2030	63,005,662	4,784,680	4,784,680	0	1,937,524	0	1,937,524
2031	63,627,991	4,937,719	4,937,719	0	1,859,996	0	1,859,996
2032	64,133,281	5,075,193	5,075,193	0	1,778,402	0	1,778,402
2033	64,527,621	5,191,436	5,191,436	0	1,692,218	0	1,692,218
2034	64,825,301	5,300,276	5,300,276	0	1,607,159	0	1,607,159
2035	65,026,823	5,407,802	5,407,802	0	1,525,361	0	1,525,361
2036	65,126,689	5,483,569	5,483,569	0	1,438,821	0	1,438,821
2037	65,152,987	5,547,079	5,547,079	0	1,353,940	0	1,353,940
2038	65,115,691	5,592,010	5,592,010	0	1,269,680	0	1,269,680
2039	65,030,750	5,633,722	5,633,722	0	1,189,908	0	1,189,908
2040	64,897,896	5,672,459	5,672,459	0	1,114,502	0	1,114,502
2041	64,717,602	5,708,378	5,708,378	0	1,043,311	0	1,043,311
2042	64,489,749	5,725,284	5,725,284	0	973,396	0	973,396
2043	64,229,906	5,744,005	5,744,005	0	908,446	0	908,446
2044	63,271,640	5,756,549	5,756,549	0	846,911	0	846,911
2045	62,213,216	5,747,992	5,747,992	0	786,653	0	786,653
2046	61,068,465	5,711,685	5,711,685	0	727,148	0	727,148
2047	59,860,867	5,662,499	5,662,499	0	670,592	0	670,592
2048	58,600,065	5,630,838	5,630,838	0	620,319	0	620,319
2049	57,262,662	5,610,574	5,610,574	0	574,964	0	574,964
2050	55,830,376	5,580,889	5,580,889	0	532,020	0	532,020
2051	54,306,869	5,514,649	5,514,649	0	489,029	0	489,029
2052	52,725,395	5,451,426	5,451,426	0	449,695	0	449,695
2053	51,079,439	5,370,705	5,370,705	0	412,127	0	412,127
2054	49,383,909	5,289,877	5,289,877	0	377,604	0	377,604
2055	47,636,590	5,197,850	5,197,850	0	345,149	0	345,149
2056	45,845,912	5,100,675	5,100,675	0	315,066	0	315,066
2057	44,014,984	4,979,208	4,979,208	0	286,105	0	286,105
2058	42,167,354	4,841,257	4,841,257	0	258,771	0	258,771
2059	40,320,911	4,723,984	4,723,984	0	234,886	0	234,886
2060	38,453,733	4,593,751	4,593,751	0	212,475	0	212,475
2061	36,578,209	4,436,676	4,436,676	0	190,893	0	190,893
2062	34,723,315	4,272,185	4,272,185	0	170,991	0	170,991
2063	32,899,247	4,106,752	4,106,752	0	152,902	0	152,902
2064	31,109,601	3,943,167	3,943,167	0	136,569	0	136,569
2065	29,355,106	3,781,543	3,781,543	0	121,834	0	121,834
2066	27,636,365	3,620,684	3,620,684	0	108,513	0	108,513
2067	25,955,305	3,459,727	3,459,727	0	96,455	0	96,455

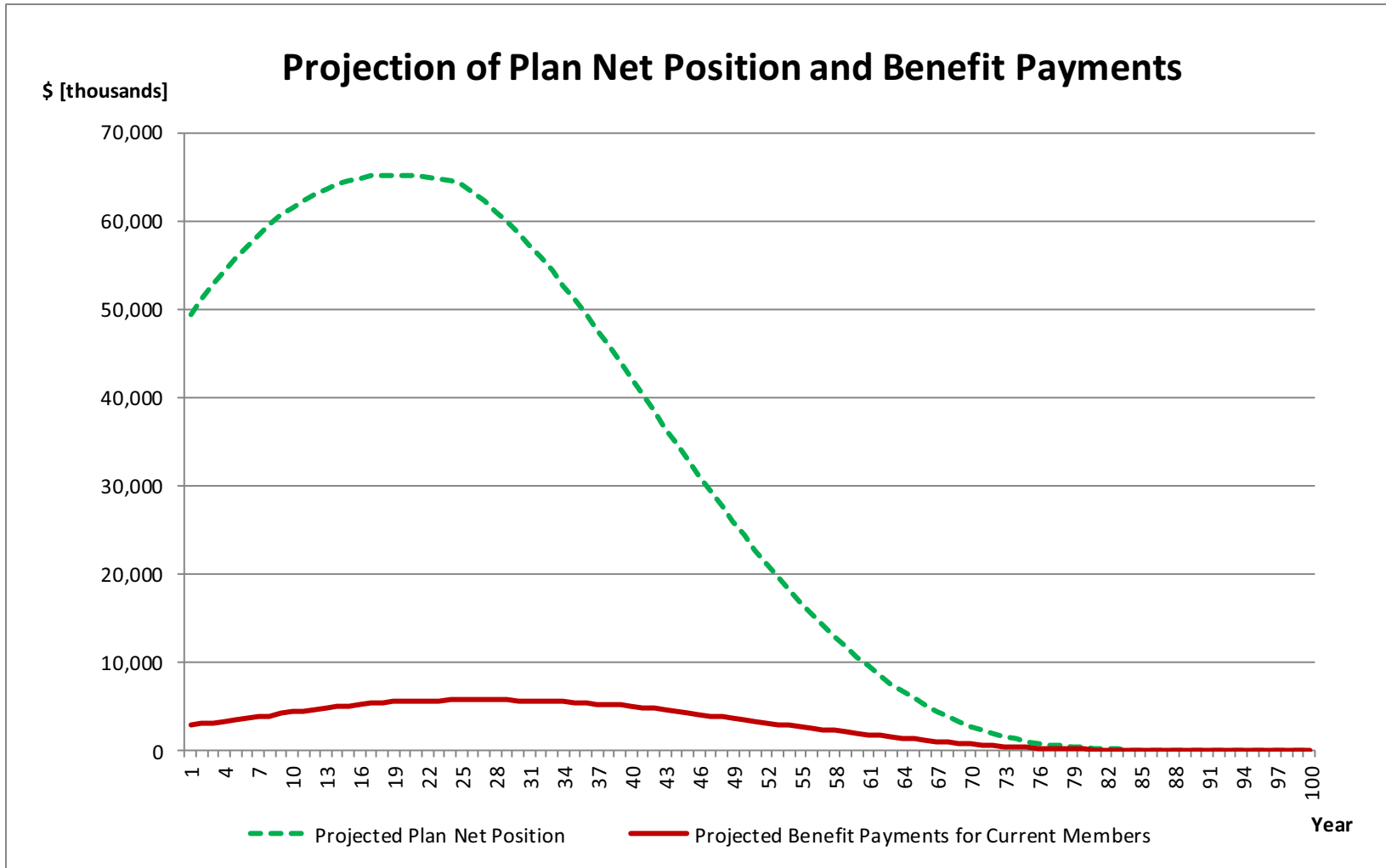
The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

# 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	\$ 24,314,941	\$ 3,299,847	\$ 3,299,847	\$ 0	\$ 85,579	\$ 0	\$ 85,579
2069	22,717,268	3,141,172	3,141,172	0	75,780	0	75,780
2070	21,164,241	2,983,578	2,983,578	0	66,957	0	66,957
2071	19,658,120	2,827,529	2,827,529	0	59,027	0	59,027
2072	18,200,835	2,673,228	2,673,228	0	51,913	0	51,913
2073	16,794,235	2,520,797	2,520,797	0	45,537	0	45,537
2074	15,440,185	2,370,407	2,370,407	0	39,833	0	39,833
2075	14,140,509	2,222,258	2,222,258	0	34,738	0	34,738
2076	12,896,960	2,076,609	2,076,609	0	30,197	0	30,197
2077	11,711,158	1,933,703	1,933,703	0	26,157	0	26,157
2078	10,584,589	1,793,737	1,793,737	0	22,571	0	22,571
2079	9,518,647	1,656,985	1,656,985	0	19,395	0	19,395
2080	8,514,547	1,523,802	1,523,802	0	16,592	0	16,592
2081	7,573,227	1,394,519	1,394,519	0	14,125	0	14,125
2082	6,695,350	1,269,443	1,269,443	0	11,961	0	11,961
2083	5,881,315	1,148,906	1,148,906	0	10,070	0	10,070
2084	5,131,202	1,033,294	1,033,294	0	8,425	0	8,425
2085	4,444,700	923,028	923,028	0	7,001	0	7,001
2086	3,821,037	818,539	818,539	0	5,775	0	5,775
2087	3,258,935	720,264	720,264	0	4,727	0	4,727
2088	2,756,569	628,611	628,611	0	3,838	0	3,838
2089	2,311,555	543,910	543,910	0	3,089	0	3,089
2090	1,920,983	466,399	466,399	0	2,464	0	2,464
2091	1,581,484	396,195	396,195	0	1,947	0	1,947
2092	1,289,312	333,304	333,304	0	1,524	0	1,524
2093	1,040,433	277,599	277,599	0	1,181	0	1,181
2094	830,645	228,801	228,801	0	905	0	905
2095	655,717	186,526	186,526	0	686	0	686
2096	511,502	150,320	150,320	0	515	0	515
2097	394,009	119,683	119,683	0	381	0	381
2098	299,470	94,076	94,076	0	279	0	279
2099	224,391	72,940	72,940	0	201	0	201
2100	165,594	55,727	55,727	0	143	0	143
2101	120,234	41,915	41,915	0	100	0	100
2102	85,793	31,002	31,002	0	69	0	69
2103	60,083	22,518	22,518	0	46	0	46
2104	41,243	16,035	16,035	0	31	0	31
2105	27,710	11,180	11,180	0	20	0	20
2106	18,196	7,622	7,622	0	13	0	13
2107	11,659	5,072	5,072	0	8	0	8
2108	7,275	3,287	3,287	0	5	0	5
2109	4,412	2,071	2,071	0	3	0	3
2110	2,596	1,266	1,266	0	2	0	2
2111	1,478	749	749	0	1	0	1
2112	812	428	428	0	0	0	0
2113	429	236	236	0	0	0	0
2114	217	126	126	0	0	0	0
2115	103	64	64	0	0	0	0
2116	44	32	32	0	0	0	0
2117	14	15	14	1	0	0	0
<b>Totals</b>					\$ 58,281,023	\$ -	\$ 58,281,023

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.