

## ALSIP ELEMENTARY SD 126 REGULAR

GASB STATEMENT NO. 68 EMPLOYER REPORTING ACCOUNTING SCHEDULES DECEMBER 31, 2016

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April 17, 2017

Alsip Elementary SD 126 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 Elementary SD 126 only in its entirety and only with the permission of Alsip Elementary SD 126.

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.

Please see the actuarial valuation report for the Illinois Municipal Retirement Fund as of December 31, 2016 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 Elementary SD 126. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Mark Buis and Francois Pieterse are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the Academy of Actuaries to render the actuarial opinions herein. The signing actuaries are independent of the plan sponsor.

Respectfully submitted,

Mark Buis

FSA, EA, MAAA

Bv

Francois Pieterse ASA, MAAA



# EXECUTIVE SUMMARY AS OF DECEMBER 31, 2016

Actuarial Valuation Date  Measurement Date of the Net Pension Liability  Fiscal Year End	Dece	ember 31, 2016 ember 31, 2016 ine 30, 2017
Membership		
Number of		
- Retirees and Beneficiaries		243
- Inactive, Non-Retired Members		149
- Active Members		87
- Total		479
Covered Valuation Payroll <sup>(1)</sup>	\$	2,246,879
Net Pension Liability		
Total Pension Liability/(Asset)	\$	16,024,111
Plan Fiduciary Net Position		16,254,489
Net Pension Liability/(Asset)	\$	(230,378)
Plan Fiduciary Net Position as a Percentage		
of Total Pension Liability		101.44%
Net Pension Liability as a Percentage		
of Covered Valuation Payroll		(10.25)%
Development of the Single Discount Rate as of December 31, 2016		
Long-Term Expected Rate of Investment Return		7.50%
Long-Term Municipal Bond Rate <sup>(2)</sup>		3.78%
Last year ending December 31 in the 2017 to 2116 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, 2015 Measurement Date		7.47%
Total Pension Expense/(Income)	\$	290,965

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

		ed Outflows Resources	Deferred Inflows of Resources		
Difference between expected and actual experience	\$	0	\$	35,573	
Changes in assumptions		0		17,528	
Net difference between projected and actual earnings					
on pension plan investments	-	782,216		0	
Total	\$	782,216	\$	53,101	

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

<sup>(2)</sup> Source: "20-Bond GO Index" is the Bond Buyer Index, general obligation, 20 years to maturity, mixed quality. In describing this index, the Bond Buyer notes that the bonds' average credit quality is roughly equivalent to Moody's Investors Service's Aa2 rating and Standard & Poor's Corp.'s AA. The rate shown is as of December 29, 2016, the most recent date available on or before the measurement date.

### **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, 2016.

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, 2016 Annual Actuarial Valuation report dated March 22, 2017);
- 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, 2016 Annual Actuarial Valuation report dated March 22, 2017, 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, 2016 and a measurement date of December 31, 2016.

### **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 3.78% (based on the weekly 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 7.5%. 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.

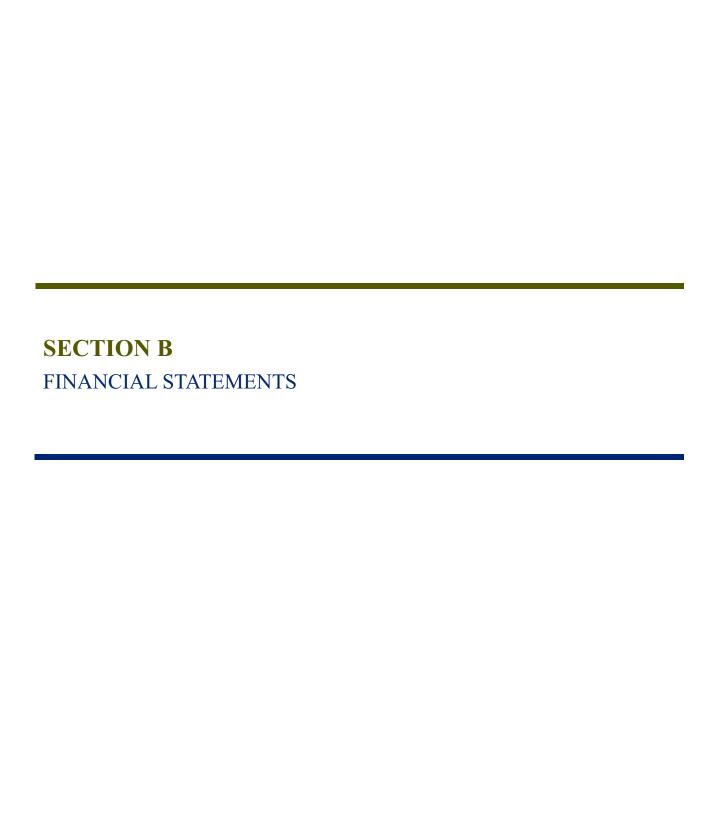
#### **Limitations of Funded Status Measurements**

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.



# PENSION EXPENSE/(INCOME) UNDER GASB STATEMENT No. 68 CALENDAR YEAR ENDED DECEMBER 31, 2016

## A. Expense/(Income)

1. Service Cost	\$ 265,102
2. Interest on the Total Pension Liability	1,150,341
3. Current-Period Benefit Changes	0
4. Employee Contributions (made negative for addition here)	(101,156)
5. Projected Earnings on Plan Investments (made negative for addition here)	(1,108,414)
6. Other Changes in Plan Fiduciary Net Position	(125,546)
7. Recognition of Outflow (Inflow) of Resources due to Liabilities	(55,543)
8. Recognition of Outflow (Inflow) of Resources due to Assets	 266,181
9. Total Pension Expense/(Income)	\$ 290,965

## STATEMENT OF OUTFLOWS AND INFLOWS ARISING FROM CURRENT REPORTING PERIOD

## CALENDAR YEAR ENDED DECEMBER 31, 2016

A. Outflows (Inflows) of Resources due to Liabilities	
1. Difference between expected and actual experience	
of the Total Pension Liability (gains) or losses	\$ (100,251)
2. Assumption Changes (gains) or losses	\$ (49,397)
3. Recognition period for Liabilities: Average of the	
expected remaining service lives of all employees {in years}	1.5500
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	\$ (64,678)
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for	
Assumption Changes	\$ (31,869)
6. Outflow (Inflow) of Resources to be recognized in the current pension expense	
due to Liabilities	\$ (96,547)
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	\$ (35,573)
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for	
Assumption Changes	\$ (17,528)
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses	
due to Liabilities	\$ (53,101)
B. Outflows (Inflows) of Resources due to Assets	
1. Net difference between projected and actual earnings on	
pension plan investments (gains) or losses	\$ 118,844
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	\$ 23,769
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses	
due to Assets	\$ 95,075

<sup>\*</sup> 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, 2016

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

	O	utflows	I	nflows	Net Outflows		
	of F	of R	esources	of Resources			
1. Due to Liabilities	\$	41,004	\$	96,547	\$	(55,543)	
2. Due to Assets		266,181		0		266,181	
3. Total	\$	307,185	\$	96,547	\$	210,638	

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

	Outflows	Inflows	N	et Outflows
	of Resources	of Resources	of	f Resources
1. Differences between expected and actual experience \$	28,594	\$ 64,678	\$	(36,084)
2. Assumption changes	12,410	31,869	\$	(19,459)
3. Net difference between projected and actual				
earnings on pension plan investments	266,181	0		266,181
4. Total \$	307,185	\$ 96,547	\$	210,638

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

	Deferred Outflows of Resources	red Inflows esources	erred Outflows Resources
1. Differences between expected and actual experience	6 0	\$ 35,573	\$ (35,573)
2. Assumption changes	0	17,528	\$ (17,528)
3. Net difference between projected and actual			
earnings on pension plan investments	782,216	 0	 782,216
4. Total	782,216	\$ 53,101	\$ 729,115

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

Year Ending December 31	erred Outflows Resources
2017	\$ 213,080
2018	266,182
2019	226,085
2020	23,768
2021	0
Thereafter	0
Total	\$ 729,115

## SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS CURRENT PERIOD

## CALENDAR YEAR ENDED DECEMBER 31, 2016

A. Total pension liability	
1. Service Cost	\$ 265,102
2. Interest on the Total Pension Liability	1,150,341
3. Changes of benefit terms	0
4. Difference between expected and actual experience of the Total Pension Liability	(100,251)
5. Changes of assumptions	(49,397)
6. Benefit payments, including refunds	
of employee contributions	(1,017,226)
7. Net change in total pension liability	\$ 248,569
8. Total pension liability – beginning	15,775,542
9. Total pension liability – ending	\$ 16,024,111
B. Plan fiduciary net position	
1. Contributions – employer	\$ 1,762,661
2. Contributions – employee	101,156
3. Net investment income	989,570
4. Benefit payments, including refunds	
of employee contributions	(1,017,226)
5. Other (Net Transfer)	 125,546
6. Net change in plan fiduciary net position	\$ 1,961,707
7. Plan fiduciary net position – beginning	 14,292,782
8. Plan fiduciary net position – ending	\$ 16,254,489
C. Net pension liability/(asset)	\$ (230,378)
D. Plan fiduciary net position as a percentage	
of the total pension liability	101.44%
E. Covered Valuation payroll	\$ 2,246,879
F. Net pension liability as a percentage	
of covered valuation payroll	(10.25)%

## SENSITIVITY OF NET PENSION LIABILITY/(ASSET) TO THE SINGLE DISCOUNT RATE ASSUMPTION

	Current Single Discount								
	1	% Decrease	Rat	e Assumption		1% Increase			
		6.50%		7.50%	8.50%				
Total Pension Liability	\$	17,797,278	\$	16,024,111	\$	14,556,970			
Plan Fiduciary Net Position		16,254,489		16,254,489		16,254,489			
Net Pension Liability/(Asset)	\$	1,542,789	\$	(230,378)	\$	(1,697,519)			

## 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,	 2016	2015		2014	2013	2012	2011	2010	2009	2008	2007
Total Pension Liability											
Service Cost	\$ 265,102 \$	24	3,747	\$ 245,612							
Interest on the Total Pension Liability	1,150,341	1,11	7,228	1,048,075							
Benefit Changes	0		0	0							
Difference between Expected and Actual Experience	(100,251)	7	5,801	(9,337)							
Assumption Changes	(49,397)	3	2,898	619,422							
Benefit Payments and Refunds	(1,017,226)	(97	7,052)	(944,746)							
Net Change in Total Pension Liability	 248,569	49	2,622	959,026							_
Total Pension Liability - Beginning	15,775,542	15,28	2,920	14,323,894							
Total Pension Liability - Ending (a)	\$ 16,024,111 \$	15,77	5,542	\$ 15,282,920							
Plan Fiduciary Net Position											
Employer Contributions	\$ 1,762,661 \$	27	2,182	\$ 253,324							
Employee Contributions	101,156	10	1,091	91,631							
Pension Plan Net Investment Income	989,570	7	1,843	853,732							
Benefit Payments and Refunds	(1,017,226)	(97	7,052)	(944,746)							
Other	125,546	15	4,278	121,005							
Net Change in Plan Fiduciary Net Position	1,961,707	(37	7,658)	374,946							
Plan Fiduciary Net Position - Beginning	14,292,782	14,67	0,440	14,295,494							
Plan Fiduciary Net Position - Ending (b)	\$ 16,254,489 \$	14,29	2,782	\$ 14,670,440							
Net Pension Liability/(Asset) - Ending (a) - (b)	 (230,378)	1,48	2,760	612,480							_
Plan Fiduciary Net Position as a Percentage											
of Total Pension Liability	101.44%	90.60	%	95.99 %							
Covered Valuation Payroll	\$ 2,246,879 \$	2,24	0,192	\$ 2,066,746							
Net Pension Liability as a Percentage											
of Covered Valuation Payroll	(10.25)%	66.19	%	29.63 %							

## MULTIYEAR SCHEDULE OF CONTRIBUTIONS

## Last 10 Calendar Years

Calendar Year	Ac	tuarially			Co	ntribution		Covered	<b>Actual Contribution</b>
Ending	De	termined		Actual	D	eficiency	•	Valuation	as a % of
December 31,	Cor	ntribution	Co	ntribution	(	(Excess)	Payroll		Covered Valuation Payroll
2014	\$	281,284	\$	253,324	\$	27,960	\$	2,066,746	12.26%
2015		272,183		272,182		1		2,240,192	12.15%
2016		262,660 *	<b>k</b>	1,762,661		(1,500,001)		2,246,879	78.45%

<sup>\*</sup> Estimated based on contribution rate of 11.69% and covered valuation payroll of \$2,246,879. This number should be verified by the auditor.

#### NOTES TO SCHEDULE OF CONTRIBUTIONS

## SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS USED IN THE CALCULATION OF THE 2016 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 2016 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): 27-year closed period until

remaining period reaches 15 years (then 15-year rolling 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 22 years for most employers (two employers were financed over 31 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.

<sup>\*</sup> Based on Valuation Assumptions used in the December 31, 2014 actuarial valuation

## **DEVELOPMENT OF MARKET VALUE OF ASSETS**

#### Market Value of Assets as of December 31, 2016

5. Net Market Value	\$ 16,254,489
4. Miscellaneous Adjustment*	33,373
3. Annuitant Reserve	9,866,660
2. Employer Contribution Reserve (EAF assets from IMRF)	4,403,346
1. Employee Contribution Reserve (MDF Assets from IMRF)	\$ 1,951,110

<sup>\*</sup> Includes an adjustment factor of .002057409 on Items 1 through 4 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**

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a.) Wage Reporting	\$ 262,661
b.) Accelerated payments and Reserve Payments	 1,500,000
	\$ 1,762,661
2. Member	
a.) Wage Reporting	\$ 101,110
b.) Member Payments (i.e. ERI, Pension Payments)	 46
Sub-total (Amount used for valuation on Schedule of Changes Page 10)	\$ 101,156
c.) Voluntary Additional Plan	\$ 5,980
Total Member Contributions (a+b+c)	\$ 107,136
Total Employer and Member Contributions (1+2)	\$ 1,869,797

## 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 2.75%

Salary Increases 3.75% to 14.50%

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.

A detailed description of the actuarial assumptions and methods can be found in the December 31, 2016 Illinois Municipal Retirement Fund annual actuarial valuation report.



## 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 3.78%; 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
0	0.246.070				
0 1	\$ 2,246,879	\$ 101,347	\$ 154,857	\$ 77.240	\$ 333,444
2	2,252,150			\$ 77,240	
	2,082,781	93,725	140,312	(26,498)	207,538
3 4	1,938,224	87,220	129,610	(24,576)	192,253
	1,810,515	81,473	121,070	(22,292)	180,251
5	1,697,463	76,386	113,341	(19,594)	170,132
6	1,594,655	71,759	106,159	(20,389)	157,530
7	1,499,164	67,462	99,355	(21,103)	145,715
8	1,404,736	63,213	92,538	(21,841)	133,910
9	1,309,962	58,948	85,644	(22,606)	121,986
10	1,221,220	54,955	78,992	(23,397)	110,550
11	1,138,695	51,241	72,974	(24,216)	100,000
12	1,064,480	47,902	67,583	(25,063)	90,421
13	999,574	44,981	62,866	(24,632)	83,215
14	942,569	42,416	58,718	(24,208)	76,926
15	891,964	40,138	55,122	(23,791)	71,469
16	839,722	37,787	51,393	(23,382)	65,798
17	783,699	35,266	47,652	(22,980)	59,939
18	730,666	32,880	44,137	(22,584)	54,433
19	678,755	30,544	40,731	(22,195)	49,080
20	632,584	28,466	37,646	(21,813)	44,299
21	588,278	26,472	34,775	(21,438)	39,810
22	542,738	24,423	31,868	(21,069)	35,222
23	500,146	22,506	29,217	(20,706)	31,018
24	461,202	20,754	26,713	(20,350)	27,117
25	424,492	19,102	24,334	(20,000)	23,436
26	385,247	17,336	21,816	(19,656)	19,496
27	343,997	15,480	19,240	(19,240)	15,480
28	303,990	13,680	16,852	(16,852)	13,680
29	267,704	12,047	14,734	(14,734)	12,047
30	232,594	10,467	12,662	(12,662)	10,467
31	194,639	8,759	10,461	(10,461)	8,759
32	155,702	7,007	8,322	(8,322)	7,007
33	116,112	5,225	6,217	(6,217)	5,225
34	75,088	3,379	4,043	(4,043)	3,379
35	42,880	1,930	2,390	(2,390)	1,930
36	27,127	1,221	1,622	(1,622)	1,221
37	19,169	863	1,219	(1,219)	863
38	13,204	594	879	(879)	594
39	9,934	447	696	(696)	447
40	7,819	352	560	(560)	352
41	6,155	277	445	(445)	277
42	4,800	216	347	(347)	216
43	3,560	160	258	(258)	160
44	2,443	110	176	(176)	110
45	1,916	86	139	(139)	86
46	1,564	70	114	(114)	70
47	943	42	68	(68)	42
48	233	11	17	(17)	11
49	0	0	0	0	0
50	0	0	0	0	0
20	Ü	o o	o o	Ü	· ·

# SINGLE DISCOUNT RATE DEVELOPMENT PROJECTION OF CONTRIBUTIONS (CONCLUDED)

	Payroll for	Contributions from	Normal Cost	UAL	Total
Year		<b>Current Employees</b>	Contributions	Contributions	Contributions
51	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
52	0	0	0	0	0
53	0	0	0	0	0
54	0	0	0	0	0
55	0	0	0	0	0
56 57	0	0	0	0	0
58	0	0	0	0	0
59	0	0	0	0	0
60	0	0	0	0	0
61	0	0	0	0	0
62	0	0	0	0	0
63	0	0	0	0	0
64	0	0	0	0	0
65	0	0	0	0	0
66	0	0	0	0	0
67	0	0	0	0	0
68	0	0	0	0	0
69	0	0	0	0	0
70	0	0	0	0	0
71	0	0	0	0	0
72	0	0	0	0	0
73	0	0	0	0	0
74	0	0	0	0	0
75	0	0	0	0	0
76	0	0	0	0	0
77	0	0	0	0	0
78 <b>-</b> 8	0	0	0	0	0
79	0	0	0	0	0
80	0	0	0	0	0
81 82	0	0	0	0	0
83	0	0	0	0	0
84	0	0	0	0	0
85	0	0	0	0	0
86	0	0	0	0	0
87	0	0	0	0	0
88	0	0	0	0	0
89	0	0	0	0	0
90	0	0	0	0	0
91	0	0	0	0	0
92	0	0	0	0	0
93	0	0	0	0	0
94	0	0	0	0	0
95	0	0	0	0	0
96	0	0	0	0	0
97	0	0	0	0	0
98	0	0	0	0	0
99	0	0	0	0	0
100	0	0	0	0	0

# SINGLE DISCOUNT RATE DEVELOPMENT PROJECTION OF PLAN FIDUCIARY NET POSITION

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Investment Earnings at 7.50%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)=(a)+(b)-(c)+(d)
1	\$ 16,254,489	\$ 333,444	\$ 998,414	\$ 1,194,601	\$ 16,784,121
2	16,784,121	207,538	1,040,345	1,228,143	17,179,457
3	17,179,457	192,253	1,093,691	1,255,266	17,533,286
4	17,533,286	180,251	1,140,831	1,279,626	17,852,333
5	17,852,333	170,132	1,184,585	1,301,571	18,139,451
6	18,139,451	157,530	1,226,175	1,321,109	18,391,914
7	18,391,914	145,715	1,263,554	1,338,232	18,612,307
8	18,612,307	133,910	1,315,234	1,352,424	18,783,407
9	18,783,407	121,986	1,364,152	1,363,016	18,904,258
10	18,904,258	110,550	1,409,865	1,369,976	18,974,918
11	18,974,918	100,000	1,455,048	1,373,223	18,993,093
12	18,993,093	90,421	1,491,454	1,372,893	18,964,953
13	18,964,953	83,215	1,517,043	1,369,575	18,900,699
14	18,900,699	76,926	1,539,788	1,363,687	18,801,524
15	18,801,524	71,469	1,553,532	1,355,542	18,675,004
16	18,675,004	65,798	1,568,429	1,345,295	18,517,668
17	18,517,668	59,939	1,580,188	1,332,846	18,330,266
18	18,330,266	54,433	1,592,357	1,318,140	18,110,482
19	18,110,482	49,080	1,602,426	1,301,089	17,858,224
20	17,858,224	44,299	1,603,904	1,281,939	17,580,558
21	17,580,558	39,810	1,603,553	1,260,962	17,277,776
22	17,277,776	35,222	1,603,177	1,238,098	16,947,919
23	16,947,919	31,018	1,599,869	1,213,326	16,592,393
24	16,592,393	27,117	1,590,083	1,186,878	16,216,305
25	16,216,305	23,436	1,577,913	1,158,984	15,820,811
26	15,820,811	19,496	1,568,730	1,129,515	15,401,092
27	15,401,092	15,480	1,558,948	1,098,248	14,955,872
28	14,955,872	13,680	1,542,175	1,065,408	14,492,785
29	14,492,785	12,047	1,518,558	1,031,486	14,017,759
30	14,017,759	10,467	1,495,981	996,632	13,528,877
31	13,528,877	8,759	1,474,111	960,708	13,024,233
32	13,024,233	7,007	1,450,631	923,660	12,504,269
33	12,504,269	5,225	1,429,484	885,376	11,965,387
34	11,965,387	3,379	1,403,434	845,851	11,411,183
35	11,411,183	1,930	1,369,820	805,470	10,848,763
36	10,848,763	1,221	1,325,616	764,890	10,289,258
37	10,289,258	863	1,275,908	724,745	9,738,957
38	9,738,957	594	1,223,487	685,392	9,201,457
39	9,201,457	447	1,168,275	647,107	8,680,737
40	8,680,737	352	1,112,515	610,103	8,178,677
41	8,178,677	277	1,056,867	574,495	7,696,581
42	7,696,581	216	1,001,286	540,382	7,235,893
43	7,235,893	160	946,823	507,834	6,797,064
44	6,797,064	110	893,108	476,898	6,380,964
45	6,380,964	86	840,259	447,635	5,988,427
46	5,988,427	70	788,903	420,086	5,619,680
46 47					5,274,220
48	5,619,680	42 11	739,741	394,239 370,067	
48	5,274,220		692,503	370,067 347,568	4,951,795 4,652,547
	4,951,795	0	646,816	347,568	
50	4,652,547	0	603,104	326,733	4,376,176

# SINGLE DISCOUNT RATE DEVELOPMENT PROJECTION OF PLAN FIDUCIARY NET POSITION (CONCLUDED)

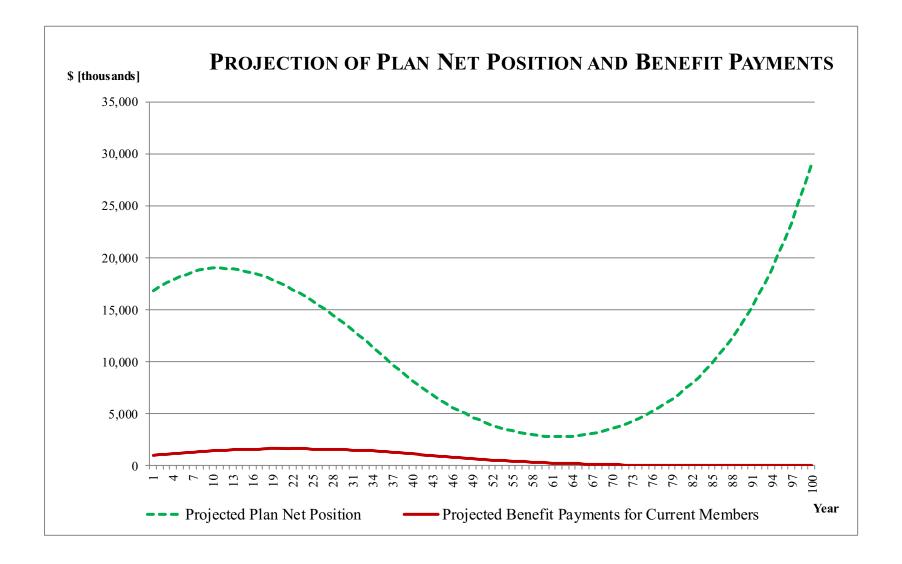
Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Investment Earnings at 7.50%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)=(a)+(b)-(c)+(d)
51	\$ 4,376,176	\$ 0	\$ 561,465	\$ 307,539	\$ 4,122,250
52	4,122,250	0	521,821	289,954	3,890,384
53	3,890,384	0	484,055	273,955	3,680,283
54	3,680,283	0	448,040	259,523	3,491,767
55	3,491,767	0	413,666	246,650	3,324,751
56	3,324,751	0	380,846	235,333	3,179,238
57	3,179,238	0	349,513	225,573	3,055,298
58	3,055,298	0	319,620	217,378	2,953,056
59	2,953,056	0	291,138	210,759	2,872,678
60	2,872,678	0	264,039	205,728	2,814,367
61	2,814,367	0	238,303	202,303	2,778,367
62	2,778,367	0	213,916	200,501	2,764,952
63	2,764,952	0	190,870	200,343	2,774,425
64	2,774,425	0	169,156	201,853	2,807,122
65	2,807,122	0	148,772	205,056	2,863,406
66	2,863,406	0	129,735	209,978	2,943,650
67	2,943,650	0	112,063	216,647	3,048,235
68	3,048,235	0	95,783	225,091	3,177,542
69	3,177,542	0	80,921	235,336	3,331,957
70	3,331,957	0	67,490	247,412	3,511,879
70 71		0	55,510		
	3,511,879			261,347	3,717,715
72 73	3,717,715	0	44,981	277,172 294,922	3,949,907
73 74	3,949,907 4,208,960	0	35,869		4,208,960
74 75	4,495,484	0	28,113	314,637 336,365	4,495,484
75 76		0	21,635	360,165	4,810,213
76 77	4,810,213 5,154,046	0	16,332 12,077	386,109	5,154,046 5,528,078
78	5,528,078	0	8,738		
78 79		0	6,179	414,284 444,794	5,933,624
80	5,933,624	0		477,761	6,372,239
81	6,372,239	0	4,267		6,845,733
	6,845,733		2,873	513,324	7,356,184
82	7,356,184	0	1,883	551,644	7,905,945
83	7,905,945	0	1,200	592,902	8,497,647
84 85	8,497,647	0	742 445	637,296 685,049	9,134,201 9,818,805
86	9,134,201 9,818,805	0	259	736,401	10,554,946
87		0	147	791,616	
88	10,554,946	0	80	850,978	11,346,415
89	11,346,415 12,197,313	0	42	914,797	12,197,313 13,112,068
90	13,112,068	0	21	983,404	14,095,451
91		0	10	1,057,158	
91	14,095,451	0	4		15,152,600
	15,152,600			1,136,445	16,289,040
93 94	16,289,040	0	2	1,221,678	17,510,716
94 95	17,510,716	0	1 0	1,313,304 1,411,801	18,824,019
	18,824,019				20,235,820
96 07	20,235,820	0	0	1,517,687	21,753,507
97	21,753,507	0	0	1,631,513	23,385,020
98	23,385,020	0	0	1,753,876	25,138,896
99	25,138,896	0	0	1,885,417	27,024,313
100	27,024,313	0	0	2,026,823	29,051,137

# SINGLE DISCOUNT RATE DEVELOPMENT PRESENT VALUES OF PROJECTED BENEFITS

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^((a)5)	(g)=(e)*vf^((a)5)	(h)=((c)/(1+sdr)^(a5)
1	\$ 16,254,489		` '			\$ 0	
2	16,784,121	1,040,345	1,040,345	0	933,393	0	933,393
3	17,179,457	1,093,691	1,093,691	0	912,795	0	912,795
4	17,533,286	1,140,831	1,140,831	0	885,710	0	885,710
5	17,852,333	1,184,585	1,184,585	0	855,516	0	855,516
6	18,139,451	1,226,175	1,226,175	0	823,770	0	823,770
7	18,391,914	1,263,554	1,263,554	0	789,658	0	789,658
8	18,612,307	1,315,234	1,315,234	0	764,609	0	764,609
9	18,783,407	1,364,152	1,364,152	0	737,719	0	737,719
10	18,904,258	1,409,865	1,409,865	0	709,247	0	709,247
11	18,974,918	1,455,048	1,455,048	0	680,908	0	680,908
12	18,993,093	1,491,454	1,491,454	0	649,251	0	649,251
13	18,964,953	1,517,043	1,517,043	0	614,316	0	614,316
14	18,900,699	1,539,788	1,539,788	0	580,025	0	580,025
15	18,801,524	1,553,532	1,553,532	0	544,374	0	544,374
16	18,675,004	1,568,429	1,568,429	0	511,250	0	511,250
17	18,517,668	1,580,188	1,580,188	0	479,147	0	479,147
18	18,330,266	1,592,357	1,592,357	0	449,151	0	449,151
19	18,110,482	1,602,426	1,602,426	0	420,457	0	420,457
20	17,858,224	1,603,904	1,603,904	0	391,483	0	391,483
21	17,580,558	1,603,553	1,603,553	0	364,091	0	364,091
22	17,277,776	1,603,177	1,603,177	0	338,610	0	338,610
23	16,947,919	1,599,869	1,599,869	0	314,336	0	314,336
24	16,592,393	1,590,083	1,590,083	0	290,617	0	290,617
25	16,216,305	1,577,913	1,577,913	0	268,272	0	268,272
26	15,820,811	1,568,730	1,568,730	0	248,103	0	248,103
27	15,401,092	1,558,948	1,558,948	0	229,355	0	229,355
28	14,955,872	1,542,175	1,542,175	0	211,058	0	211,058
29	14,492,785	1,518,558	1,518,558	0	193,326	0	193,326
30	14,017,759	1,495,981	1,495,981	0	177,164	0	177,164
31	13,528,877	1,474,111	1,474,111	0	162,395	0	162,395
32	13,024,233	1,450,631	1,450,631	0	148,659	0	148,659
33	12,504,269	1,429,484	1,429,484	0	136,271	0	136,271
34	11,965,387	1,403,434	1,403,434	0	124,454	0	124,454
35	11,411,183	1,369,820	1,369,820	0	112,998	0	112,998
36	10,848,763	1,325,616	1,325,616	0	101,723	0	101,723
37	10,289,258	1,275,908	1,275,908	0	91,077	0	91,077
38	9,738,957	1,223,487	1,223,487	0	81,242	0	81,242
39	9,201,457	1,168,275	1,168,275	0	72,164	0	72,164
40	8,680,737	1,112,515	1,112,515	0	63,925	0	63,925
41	8,178,677	1,056,867	1,056,867	0	56,491	0	56,491
42	7,696,581	1,001,286	1,001,286	0	49,786	0	49,786
43	7,235,893	946,823	946,823	0	43,793	0	43,793
44	6,797,064	893,108	893,108	0	38,427	0	38,427
45	6,380,964	840,259	840,259	0	33,631	0	33,631
46	5,988,427	788,903	788,903	0	29,372	0	29,372
47	5,619,680	739,741	739,741	0	25,620	0	25,620
48	5,274,220	692,503	692,503	0	22,311	0	22,311
49	4,951,795	646,816	646,816	0	19,385	0	19,385
50	4,652,547	603,104	603,104	0	16,814	0	16,814

# SINGLE DISCOUNT RATE DEVELOPMENT PRESENT VALUES OF PROJECTED BENEFITS (CONCLUDED)

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^((a)5)	(g)=(e)*vf^((a)5)	(h)=((c)/(1+sdr)^(a5)
51	\$ 4,376,176	` '	* *			-	
52	4,122,250	521,821	521,821	0	12,589	0	12,589
53	3,890,384	484,055	484,055	0	10,863	0	
54	3,680,283	448,040	448,040	0	9,353	0	
55	3,491,767	413,666	413,666	0	8,033	0	8,033
56	3,324,751	380,846	380,846	0	6,880	0	6,880
57	3,179,238	349,513	349,513	0	5,873	0	5,873
58	3,055,298	319,620	319,620	0	4,996	0	4,996
59	2,953,056	291,138	291,138	0	4,234	0	4,234
60	2,872,678	264,039	264,039	0	3,572	0	3,572
61	2,814,367	238,303	238,303	0	2,999	0	
62	2,778,367	213,916	213,916	0	2,504	0	2,504
63	2,764,952	190,870	190,870	0	2,078	0	2,078
64	2,774,425	169,156	169,156	0	1,713	0	1,713
65	2,807,122	148,772	148,772	0	1,402	0	1,402
66	2,863,406	129,735	129,735	0	1,137	0	1,137
67	2,943,650	112,063	112,063	0	914	0	914
68	3,048,235	95,783	95,783	0	726	0	726
69	3,177,542	80,921	80,921	0	571	0	571
70	3,331,957	67,490	67,490	0	443	0	443
71	3,511,879	55,510	55,510	0	339	0	339
72	3,717,715	44,981	44,981	0	255	0	255
73	3,949,907	35,869	35,869	0	189	0	189
74	4,208,960	28,113	28,113	0	138	0	138
75	4,495,484	21,635	21,635	0	99	0	99
76	4,810,213	16,332	16,332	0	69	0	69
77	5,154,046	12,077	12,077	0	48	0	48
78	5,528,078	8,738	8,738	0	32	0	32
79	5,933,624	6,179	6,179	0	21	0	21
80	6,372,239	4,267	4,267	0	14	0	14
81	6,845,733	2,873	2,873	0	9	0	9
82	7,356,184	1,883	1,883	0	5	0	5
83	7,905,945	1,200	1,200	0	3	0	3
84	8,497,647	742	742	0	2	0	2
85	9,134,201	445	445	0	1	0	1
86	9,818,805	259	259	0	1	0	1
87	10,554,946	147	147	0	0	0	0
88	11,346,415	80	80	0	0	0	0
89	12,197,313	42	42	0	0	0	0
90	13,112,068	21	21	0	0	0	0
91	14,095,451	10	10	0	0	0	0
92	15,152,600	4	4	0	0	0	0
93	16,289,040	2	2	0	0	0	0
94	17,510,716	1	1	0	0	0	
95	18,824,019	0	0	0	0	0	0
96	20,235,820	0	0	0	0	0	0
97	21,753,507	0	0	0	0	0	0
98	23,385,020	0	0	0	0	0	0
99	25,138,896	0	0	0	0	0	0
100	27,024,313	0	0	0	0	0	
				Totals	\$ 17,857,873	\$ -	\$ 17,857,873





### GLOSSARY OF TERMS

Actuarial Accrued Liability (AAL)

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."

**Actuarial Assumptions** 

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.

**Accrued Service** 

Service credited under the fund which was rendered before the date of the actuarial valuation.

Actuarial Equivalent

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.

Actuarial Cost Method

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.

Actuarial Gain (Loss)

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.

Actuarial Present Value (APV)

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.

Actuarial Valuation

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.

Actuarial Valuation Date

The date as of which an actuarial valuation is performed.

Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC) 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)**

Amortization Payment

The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.

Amortization Method

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.

Cost-of-Living Adjustments

Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.

Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan) 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.

Covered Valuation Payroll

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.

Deferred Inflows and Outflows

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.

Discount Rate

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:

- 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
- 2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.

Entry Age Actuarial Cost Method (EAN)

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)**

GASB The Governmental Accounting Standards Board is an organization that

exists in order to promulgate accounting standards for governmental

entities.

Fiduciary Net Position The fiduciary net position is the value of the assets of the trust.

Long-Term Expected Rate of Return

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.

Money-Weighted Rate of Return

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.

Multiple-Employer Defined Benefit Pension Plan

A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.

Municipal Bond Rate 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.

Net Pension Liability (NPL) The NPL is the liability of employers and non-employer contribution entities to plan members for benefits provided through a defined benefit

pension plan.

Non-Employer Contribution Entities 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.

**Normal Cost** The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.

Other Postemployment Benefits (OPEB)

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 postemployment benefits do not include termination benefits.

**Real Rate of Return**The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.

The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.

Service Cost

## **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.