



Employees' Retirement System of the City of Milwaukee

Actuarial Valuation Report

As of January 1, 2018

July 2018

Contents

Introduction.....	4
Table 1a Summary of Results of Actuarial Valuation	12
Table 1b Allocation of Total 2018 Contributions to Employee Groups.....	13
Table 1c Allocation of Total 2018 Contributions to Employee Groups for Combined Fund.....	14
Table 2a Determination of Employer Contributions to Retirement Fund (in thousands).....	16
Table 2b Determination of Employer Contributions to Combined Retirement & Disability Fund (in thousands)	17
Table 2c Comparison of Stable Contribution Policy to Prior Contribution Requirement for Combined Fund (in thousands)	18
Table 3 Determination of Employer Contributions to Duty Disability Funds (in thousands).....	19
Table 4 Determination of City Contributions to Firemen’s Heart & Lung Fund (in thousands)	20
Table 5 Member Data	21
Table 6 Summary of Market Value of Plan Assets as of January 1, 2018 (in thousands)	25
Table 7 Allocations between Non-Consenters Who Consented to Global Settlement During 2017 and Those Who Did Not.....	26
Table 8 Actuarial Value of Assets as of January 1, 2018 (in thousands).....	27
Table 9 Allocation of Assets among Funds as of January 1, 2018 (in thousands)	28
Table 10 Actuarial Methods and Assumptions for GASB 67/68 Disclosure Purpose	30
Table 11 Schedule of the Net Pension Liability (in thousands)	32
Table 12a Development of Discount Rate- Projection of the Fiduciary Net Position	33
Table 12b Development of Discount Rate- Present Values of Projected Benefits	35
Table 13 Schedule of Changes in the Net Pension Liability.....	37
Table 14 Schedule of Contributions	38
Table 15 GASB 68 Information Collective Pension Expense (in thousands).....	39
Table 15 GASB 68 Information (continued) Details of the Recognized and Deferred Inflows and Outflows of Resources.....	40
Amortization of Changes in Assumptions (in thousands).....	40
Table 15 GASB 68 Information (continued) Details of the Recognized and Deferred Inflows and Outflows of Resources.....	41
Amortization of Difference between Actual and Expected Experience (in thousands)	41
Table 15 GASB 68 Information (continued) Details of the Recognized and Deferred Inflows and Outflows of Resources.....	42
Amortization of Difference between Projected and Actual Earnings (in thousands)	42
Table 15 GASB 68 Information (continued) Schedule of Pension Amounts by Employer (in thousands)	43

Table 16	January 1, 2018 Valuation Funded Status on Actuarial and Market Value of Assets (in thousands)	44
Table 17	Actuarial Balance Sheet for Members at January 1, 2018 (in thousands)	45
	Description of Actuarial Methods and Assumptions for Pension Funding Purpose	46
	Summary of Plan Provisions	55
Exhibit 1	Age/Service Distributions	71
Exhibit 2	Detailed Tabulations of the Data	84
Exhibit 3	Reconciliation of Membership Data	103

June 18, 2018 (Revised July 23, 2018)

Annuity and Pension Board
Employees' Retirement System of the City of Milwaukee
789 N. Water St., #300
Milwaukee, WI 53202

Certification of Actuarial Valuation

Members of the Board:

Conduent HR Consulting, LLC, was retained to prepare this report of the results of the annual actuarial valuation of the assets and liabilities of the Employees' Retirement System of the City of Milwaukee ("ERS") as of January 1, 2018. The report was prepared in accordance with Section 36-15-15 of the Milwaukee City Charter (MCC). The valuation takes into account all of the promised benefits to which members were entitled as of January 1, 2018.

Global Pension Settlement (GPS) benefits have been provided to nine individuals who consented to the GPS since the last valuation. As a result, assets have been transferred from the non-consenter funds in which these members previously participated to the Global Combined Fund.

The valuation was based on the actuarial assumptions and methods adopted by the Board of Trustees, as specified by the Charter. An amendment to the MCC was adopted by the Common Council on April 30, 2013 to establish the Stable Employer Contribution Policy. Under the Stable Employer Contribution Policy, an actuarial contribution rate is separately calculated for Policeman, Fireman, and General Employees of the Combined Fund and is applicable for the subsequent five-year period. These rates are established every five years following the Experience Study based on a study performed by the actuary. The actuary establishes these rates based on the actuarial assumptions adopted by the Members of the Board of the Annuity and Pension Board of the ERS and the asset smoothing, asset corridor and amortization methods specified in the Charter. These rates are established in conformity with applicable Actuarial Standards of Practice and result in a funded status at the end of five years that is at least actuarially equivalent to what would have been expected to develop under contributions based on redevelopment of employer contribution rates annually under the same assumptions and methods without limiting the contributions with the Full Funding Limit, which has been eliminated. Conduent has recommended actuarial contribution rates under the Stable Employer Contribution Policy for Policeman, Fireman, and General Employees of 25.22%, 26.83% and 7.48%, respectively. These rates are in effect for employer contributions through January 1, 2023.

Effective February 13, 2018, Section 36-15-15 of the MCC was amended to implement a new actuarial cost method and a new amortization method. The Full Funding Limit (Section 36-08-6-h) was eliminated with the implementation of the Stable Employer Contribution Policy. The 20% asset corridor (Section 36-15-15-b) was removed effective January 1, 2018. The assumptions and methods used for this valuation are individually, and in the aggregate, reasonable and were selected in accordance with applicable Actuarial Standards of Practice. As required under Section 36-15-14, experience reviews have been performed every five years. This valuation was prepared on the basis of the interest, salary and demographic assumptions that were recommended on the basis of an Experience Study covering the period from January 1, 2012 to December 31, 2016, which was prepared by Conduent and approved by the Board for use beginning with the January 1, 2018 actuarial valuation. These assumptions will remain in effect for valuation purposes until such time as the Board adopts

revised assumptions. The next review of actuarial assumptions is scheduled to be performed before the January 1, 2023 actuarial valuation.

Future actuarial measurements may differ significantly from those presented in this report due to such factors as: plan experience different from that anticipated by the economic and demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law. An analysis of the potential range of such future differences is beyond the scope of this report.

Assets and Membership Data

The individual data for members of the System as of the valuation date were reported to the actuary by the ERS. While we did not verify the data at their source, we did perform tests for internal consistency and reasonability. The amount of assets in the trust fund taken into account in the valuation was based on statements prepared for us by the ERS. The accuracy of the results of this valuation is dependent upon the accuracy and correctness of the member data and asset information provided.

Financing Objective and Employer Contribution

The results of the January 1, 2018 valuation are among those used to monitor the impact of the Stable Employer Contribution on the System. The Stable Employer Contribution Policy is designed to:

- (a) Fully fund all current costs based on the normal contribution payable determined under the funding method irrespective of the funded status of the System, that is, the Employer Normal Cost is always funded; and
- (b) Liquidate the unfunded accrued liability, if any, over the amortization periods adopted by the Board and specified in the MCC. Effective with the January 1, 2018 actuarial valuation, the Board adopted a closed-layered amortization method with amortization payments for each base increasing by 2.00% per year. The outstanding balance of the unfunded actuarial accrued liability (UAAL) as of January 1, 2018 will be amortized over a fixed 25-year period. At each subsequent valuation date, any changes to the UAAL arising from actuarial gains or losses will be amortized over a fixed 15-year period and any changes to the UAAL arising from changes in assumptions, methods, or plan provisions will be amortized over a fixed 25 year period.

On this basis, the valuation indicates that the employer contribution of \$89,765,992 (payable January 31, 2019) to both the Combined Fund and the Combined Retirement & Disability Fund would be sufficient to provide for the payment of the promised pension and survivor benefits in accordance with the adopted funding policy.

Financial Results and Membership Data

Detailed summaries of the financial results of the valuation and of the membership data used in preparing the valuation are shown in this valuation report.

Events During 2017 that Impacted the 2018 Results

Results of this valuation differ from what would have been projected based on last year's valuation for many reasons:

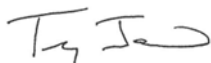
- (a) The return on assets at market of 16.41%, compared to the 8.25% assumed annual rate of return, which increased the funded ratio.
- (b) The cost method was changed from Projected Unit Credit to Entry Age Normal. This increased the actuarial accrued liability by \$156.6 million and decreased the funded ratio.
- (c) The amortization method was changed to a closed layered amortization method with amortization payments for each base increasing by 2.00% per year. The outstanding balance of the unfunded actuarial accrued liability (UAAL) as of January 1, 2018 will be amortized over a fixed 25-year period. At each subsequent valuation date, any changes to the UAAL arising from actuarial gains or losses will be amortized over a fixed 15-year period, and any changes to the UAAL arising from changes in assumptions, methods, or plan provisions will be amortized over a fixed 25-year period. This change did not affect the funded ratio, but did affect the actuarially determined contribution level.
- (d) Decrement assumptions, optional form assumptions, and interest rate assumptions were updated according to an experience study completed in 2017. This increased the actuarial accrued liability by \$296.5 million and decreased the funded ratio.
- (e) As noted earlier, since the January 1, 2017 actuarial valuation was completed, nine individuals who were eligible for ERS benefits as of June 28, 2000 – and who had not consented to GPS – have now consented.
- (f) Overall, the funded ratio was lower than would have been projected on the basis of the prior actuarial valuation, as a result of the events of 2017.

References to “funded ratio” and “unfunded accrued liability” are typically measured on an actuarial value of assets basis. Measurements made using the market value of assets would result in different funded ratios and unfunded accrued liabilities. The funded ratio presented is appropriate for evaluating the need and level of future contributions, but makes no assessment regarding the funded status of the plan if the plan were to settle (i.e., purchase annuities to cover) a portion, or all, of its liabilities.

I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the Qualification Standards of the Academy to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and I am available to answer questions about it.

Sincerely,

Conduent HR Consulting, LLC



Troy Jaros, FSA, EA, MAAA, FCA
Senior Consultant, Retirement Actuary

Introduction

The law governing the Employees' Retirement System (ERS) requires the Actuary, as the technical advisor to the Annuity and Pension Board, to ". . . prepare an annual valuation of the assets and liabilities of the funds of the retirement system." (Section 36-15-15 of the MCC). Conduent Human Resource Services, the Actuary, has completed the eightieth annual actuarial valuation of the ERS as of January 1, 2018.

In this report we present the results of the January 1, 2018 valuation and the recommended employer contributions for the year ending December 31, 2018. For purposes of disclosure, we also include the schedule of funding progress required by Governmental Accounting Standards Board (GASB) No. 25, to be used only for comparison of relevant Statement No. 67 information.

This valuation was prepared using membership and financial data provided by the staff of ERS.

The majority of actuarial assumptions, outlined on "Description of Actuarial Methods and Assumptions for Pension Funding Purpose" section, were adopted as of January 1, 2018, based on the experience study for the five-year period ended December 31, 2016. The next experience review will be completed for the January 1, 2023 actuarial valuation. The 2.5% inflation assumption was adopted as of January 1, 2018. The entry age normal actuarial cost method was adopted as of January 1, 2018, as prescribed in MCC Section 36-15. The actuarial asset valuation method and the amortization method were adopted as of January 1, 2018, as prescribed in MCC Section 36-15.

References to "funded ratio" and "unfunded accrued liability" are typically measured on an actuarial value of assets basis. Measurements made using the market value of assets would result in different funded ratios and unfunded accrued liabilities. The funded ratio presented is appropriate for evaluating the need and level of future contributions, but makes no assessment regarding the funded status of the plan if the plan were to settle (i.e., purchase annuities to cover) a portion, or all, of its liabilities.

Changes Since Last Year's Valuation

The following changes have been made since the actuarial valuation dated January 1, 2017:

- The retirement rates, withdrawal rates, disability rates and mortality assumption, as well as the assumed rate of return and the salary increase and inflation assumptions were updated according to an experience study completed in 2017.
- The cost method was changed from Projected Unit Credit to Entry Age Normal. In addition, the amortization method was changed to a closed layered amortization method with amortization payments for each base increasing by 2.00% per year. The outstanding balance of the unfunded actuarial accrued liability (UAAL) as of January 1, 2018 will be amortized over a fixed 25-year period. At each subsequent valuation date, any changes to the UAAL arising from actuarial gains or losses will be amortized over a fixed 15-year period and any changes to the UAAL arising from changes in assumptions, methods, or plan provisions will be amortized over a fixed 25-year period.
- The Global Pension Settlement (GPS) provides that members enrolled through June 28, 2000, must provide written consent to the ERS in order to be eligible for the benefit enhancements of GPS. Members enrolled after June 28, 2000, are automatically participants in the Combined Fund. Since the January 1, 2017 actuarial valuation was completed, nine individuals who were eligible for ERS benefits as of June 28, 2000 – and who had not previously consented to GPS – have now consented. This January 1, 2018 valuation reflects the impact of this change.

Fiscal Impact of Changes

The assumption changes made according to the experience study increased the actuarial accrued liability by about \$296.5 million.

The change to the Entry Age Normal cost method increased the plan's actuarial accrued liability by \$156.6 million.

The fiscal impact of new consents to GPS is explained on page 7.

Summary of Principal Results

Summarized below are the principal financial results for the ERS based upon the actuarial valuation as of January 1, 2018. Comparable results from the January 1, 2017 valuation are also shown.

Item	January 01, 2017	January 01, 2018
Membership Data		
Active Members		
➤ Number	11,083	10,845
➤ Total Annual Covered Payroll on the Valuation Date	\$583,950,000	\$577,118,000
➤ Average Pay	\$52,689	\$53,215
Retirees and Beneficiaries		
➤ Number	12,888	13,196
➤ Annual Benefit	\$340,772,000	\$357,795,000
➤ Average Benefit Payment	\$26,441	\$27,114
Asset Values (includes contributions receivable)		
➤ Actuarial Value	\$5,055,700,000	\$5,233,486,000
➤ Market Value	\$4,886,669,000	\$5,396,527,000
Actuarially Determined Employer Contribution	Due 1/31/2018	Due 1/31/2019
➤ Annual Cost	\$89,590,000	\$89,766,000
➤ As % of Covered Payroll	15.34%	15.55%
Funded Status		
➤ Accrued Liability	\$5,259,300,000	\$ 5,819,762,000
➤ Actuarial Value of Assets	<u>5,055,700,000</u>	<u>5,233,486,000</u>
➤ Unfunded (Overfunded) Accrued Liability	\$203,600,000	\$ 586,276,000
➤ Funded Ratio Based on Actuarial Value of Assets	96.1%	89.9%
➤ Accrued Liability	\$5,259,300,000	\$ 5,819,762,000
➤ Market Value of Assets	<u>4,886,669,000</u>	<u>5,396,527,000</u>
➤ Unfunded (Overfunded) Accrued Liability	\$372,631,000	\$ 423,235,000
➤ Funded Ratio Based on Market Value of Assets	92.9%	92.7%

Summarized below are the Actuarial Funding Results as of January 1, 2018 with a breakdown between agencies. (in thousands)

Actuarial Liabilities	General City *	Water Department	School Board	Milwaukee Technical College	Sewerage Commission	Veolia	Wisconsin Center District	Housing Authority	Redevelopment Authority	Policemen	Firemen	Total
1. Present Value of Projected Benefits												
Active Members												
• Retirement Benefits	438,303	47,777	215,635	-	41,412	14,182	10,055	22,943	1,792	935,807	349,366	2,077,272
• Withdrawal Benefits	32,580	2,765	19,797	-	3,075	43	586	1,526	174	34,040	10,748	105,334
• Disability Benefits	14,127	1,360	7,495	-	1,328	176	268	730	75	14,795	25,696	66,050
• Death Benefits	7,742	875	3,861	-	781	251	198	415	36	4,827	1,885	20,871
Total	492,752	52,777	246,788	-	46,596	14,652	11,107	25,614	2,077	989,469	387,695	2,269,527
2. Inactive Members with Deferred Benefits	45,280	2,599	43,503	-	3,633	251	1,088	1,584	96	30,073	18,858	146,965
3. Retired Members and Beneficiaries Receiving Benefits	1,027,498	76,844	443,663	15,303	130,077	46,926	8,073	29,561	464	1,433,909	781,175	3,993,493
4. Total Present Value of Projected Benefits (1. + 2. + 3.)	1,565,530	132,220	733,954	15,303	180,306	61,829	20,268	56,759	2,637	2,453,451	1,187,728	6,409,985
5. Present Value of Future Normal Costs	88,516	8,746	55,283	-	9,337	809	1,974	4,943	380	309,963	110,272	590,223
6. Total Actuarial Accrued Liability (4. - 5.)	1,477,014	123,474	678,671	15,303	170,969	61,020	18,294	51,816	2,257	2,143,488	1,077,456	5,819,762

Normal Cost Amount	General City *	Water Department	School Board	Milwaukee Technical College	Sewerage Commission	Veolia	Wisconsin Center District	Housing Authority	Redevelopment Authority	Policemen	Firemen	Total
1. Active Members												
• Retirement Benefits	8,888	880	5,506	-	973	122	231	571	33	28,865	9,665	55,734
• Withdrawal Benefits	3,465	333	2,164	-	338	58	67	176	13	2,064	733	9,411
• Disability Benefits	587	59	364	-	60	10	13	32	2	1,257	2,060	4,444
• Death Benefits	366	39	219	-	38	7	9	21	1	264	105	1,069
2. Total Normal Cost	13,306	1,311	8,253	-	1,409	197	320	800	49	32,450	12,563	70,658

* Includes Elected Officials

Fiscal Impact of New Consents to the Pension Settlement

Based on data provided by ERS to the actuary, nine active members, inactive members, and benefit recipients (or estates) eligible for ERS benefits as of June 28, 2000, who had not consented to GPS at the time the last valuation was processed, have now consented. The change in consent status increased the Present Value of Future Benefits (PVFB) for these individuals by \$1,084,000. At the direction of the Court, the ERS has continued to accept and process GPS consent forms and additional Consenters will be included in future actuarial valuations. Benefits will not change for individuals who do not consent to GPS.

Some non-consenting members have died without leaving survivors eligible for ERS benefits, some have withdrawn from ERS, and some have separated without rights to a future ERS benefit. Some non-consenting members who had separated without rights to a future ERS benefit have returned to service. Table 5 of this report provides information about Consenters and Non-Consenters included in this valuation by membership status; active member, inactive member, or benefit recipient, and by employee group; Policeman, Fireman, and General Employees.

GPS provides that the market value of the assets in the funds for Non-Consenters be divided among Consenters and Non-Consenters. The division is based on the actuarial liability covered by each fund under pre-GPS plan provisions. The required division of assets for members who consented during 2017 was calculated as of January 1, 2017 (the beginning of the year of consent). Table 7 of this report provides the necessary details.

Contribution Requirements for Fiscal Year 2018

Actuarially Determined Employer Contributions

The recommended contribution for 2018 payable January 31, 2019 is allocated to the different funds and employee groups as follows:

Item	General Employees	Policemen	Firemen	Total
Combined Fund	\$ 29,049,350	43,246,399	17,305,243	\$89,600,992
Retirement Fund	0	0	0	0
Duty Disability Funds	0	0	0	0
Heart & Lung Fund	N/A	N/A	0	0
Combined Retirement & Disability Fund	138,000	27,000	0	165,000
Total Contribution	\$29,187,350	\$43,273,399	\$17,305,243	\$89,765,992
Covered Compensation	\$ 359,914,000	\$ 157,864,000	\$ 59,340,000	\$ 577,118,000
Total Contribution as a Percentage of Covered Compensation	8.1%	27.4%	29.2%	15.6%

Member Contributions to the Funds shown on previous page

Member contributions are paid by employees via payroll deductions equal to the following percentages of earnable compensation:

General Employees	5.5%
Elected Officials	7.0%
Fire	7.0%
Policemen	7.0%

Under state law, per 2011 Wisconsin Act 10, and as interpreted through case law, employers are no longer permitted to make contributions on a member's behalf (with the exception of contractually agreed upon arrangements made prior to the law's effective date).

Commencing in 1999, certain policemen contribute \$1 per year of their longevity in rank pay to their individual accounts.

Fire and Police employees, hired on or after October 3, 2011, contribute 7.0% of their earnable compensation as member contributions each pay period. The City no longer makes contributions on behalf of these employees.

Effective December 20, 2015 (PP1-2016), Police employees, hired prior to October 3, 2011, contribute 7.0% of their earnable compensation as member contributions each pay period. The City no longer makes contributions on behalf of these employees.

Effective December 21, 2014 (PP1-2015), Fire employees hired prior to October 3, 2011 contribute 3.5% of their earnable compensation as member contributions each year; thereafter effective December 20, 2015 (PP1-2016), the Fire employees hired prior to October 3, 2011 started contributing the full 7% of their earnable compensation as member contributions. The City no longer pays member contributions on behalf of these employees.

General Employees enrolled on or after January 1, 2014, now contribute 4% of their earnable compensation as member contributions each pay period. These employees belong to the new Tier II benefit design that has a higher retirement age and a lower service credit multiplier. Currently, only General City Employees and Elected Officials belong to the Tier II benefit design. Fire and Police Employees still follow the Tier I benefit design. For additional details, refer to the Summary of Plan Provision section of this report.

Members' individual accounts are held in the Combined Fund, the Retirement Fund, and the Combined Retirement and Disability Fund.

Funded Ratio

The ERS funded status is measured by comparing the valuation assets with the accrued liability. The accrued liability is the present value of benefits accumulated to date under the ERS funding method, reflecting future pay increases for active employees.

On this basis, the ERS funded ratio is 89.9% as of January 1, 2018. The funded ratio is based on an actuarial value of assets of \$5.233 billion and an accrued liability of \$5.820 billion.

Reasons for Change in the Funded Ratio

The funded ratio based on the actuarial value of assets decreased from 96.1% as of January 1, 2017 to 89.9% as of January 1, 2018. The funded ratio based on the market value of assets decreased from 92.9% as of January 1, 2017 to 92.7% as of January 1, 2018. A reconciliation of the changes in funded ratio is as follows:

	Funded Ratio Based on	
	Actuarial Value of Asset	Market Value of Asset
January 1, 2017	96.1%	92.9%
Expected change	0.3%	0.0%
Valuation updates	1.1%	1.1%
Change due to cost method	-3.0%	-3.1%
Change due to assumptions	-5.7%	-5.9%
Change due to asset return	2.5%	9.2%
Change due to liabilities	-1.4%	-1.5%
Change due to plan	<u>0.0%</u>	<u>0.0%</u>
Total change	-6.2%	-0.2%
January 1, 2018	89.9%	92.7%

Schedule of Funding Progress

Valuation as of January 1	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL)	Funded Ratio	Covered Payroll	UAAL as a Percentage of Covered Payroll
2018	\$ 5,233,486	\$ 5,819,762	\$ 586,276	89.9%	\$ 577,118	101.6%
2017	5,055,700	5,259,300	203,600	96.1%	583,950	34.9%
2016	4,899,155	5,065,141	165,986	96.7%	535,802	31.0%
2015	4,797,437	4,935,482	138,045	97.2%	529,939	26.0%
2014	4,580,729	4,831,689	250,960	94.8%	521,651	48.1%
2013	4,259,889	4,689,814	429,925	90.8%	523,738	82.1%
2012	4,404,635	4,587,915	183,280	96.0%	525,181	34.9%
2011	4,641,425	4,447,548	-	104.4%	538,218	0.0%
2010	4,814,402	4,269,324	-	112.8%	553,846	0.0%
2009	4,076,297	4,113,089	36,792	99.1%	536,558	6.9%
2008	5,192,000	3,958,061	-	131.2%	532,412	0.0%

Rate of Return

The investments return on all ERS assets on a market value basis (i.e. Total return including both realized and unrealized gains and losses) for the plan year ended December 31, 2017, was 16.41% reported by ERS staff. The return based on the actuarial value of assets used for determining the System's funded status was 9.09%. A five-year history of the rate of return on the actuarial value of assets and the market values of assets is shown below.

Plan Year Ended December 31	Return on Actuarial Value	Return on Market Value
2017	9.09 %	16.41 %
2016	8.33	8.83
2015	7.00	0.52
2014	9.91	4.72
2013	12.85	18.44

Five-Year History of Market Value and Valuation Assets

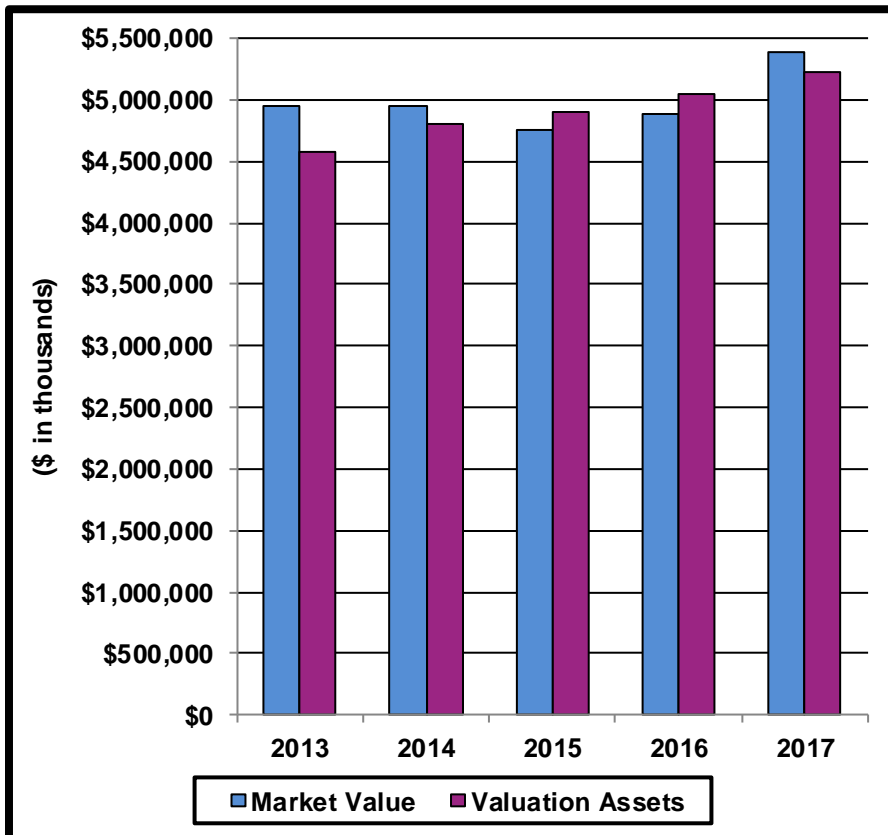


Table 1a Summary of Results of Actuarial Valuation

**Allocation of Total 2018 Contributions to Employee Groups
Members in Retirement and Duty Disability Funds
Amount due January 31, 2019**

Group	Active Members	Covered Compensation	Fund			January 31, 2019	
			Retirement	Duty Disability	Heart & Lung	Total Due	% of Pay
General City	5	\$ 252,312	\$ -	\$ -	\$ -	\$ -	0.00%
Water Department	1	51,389	-	-	-	-	0.00%
School Board	22	595,864	-	-	-	-	0.00%
Milwaukee Technical College	-	-	-	-	-	-	
Sewerage Commission	-	-	-	-	-	-	
Veolia	-	-	-	-	-	-	
Wisconsin Center District	-	-	-	-	-	-	
Housing Authority	-	-	-	-	-	-	
Redevelopment Authority	-	-	-	-	-	-	
Policemen	-	-	-	-	-	-	
Firemen	-	-	-	-	-	-	
TOTAL	28	\$ 899,565	\$ -	\$ -	\$ -	\$ -	0.00%

Table 1b Allocation of Total 2018 Contributions to Employee Groups

Members in Combined Retirement and Disability Fund

Amount due January 31, 2019

Group	Active Members	Covered Compensation	Fund		January 31, 2019	
			Combined Retirement & Disability	Heart & Lung	Total Due	% of Pay
General City	15	\$ 811,703	\$ 65,108	\$ -	\$ 65,108	8.02%
Water Department	-	-	-	-	-	-
School Board*	24	739,697	59,332	-	59,332	8.02%
Milwaukee Technical College	-	-	-	-	-	-
Sewerage Commission	-	-	-	-	-	-
Veolia	-	-	-	-	-	-
Wisconsin Center District	1	8,914	715	-	715	8.02%
Housing Authority	3	160,146	12,845	-	12,845	8.02%
Redevelopment Authority	-	-	-	-	-	-
Policemen	1	104,540	27,000	-	27,000	25.83%
Firemen	-	-	-	-	-	-
TOTAL	44	\$ 1,825,000	\$ 165,000	\$ -	\$ 165,000	9.04%

* Breakdown of contributions for MPS by normal cost and past service portion as follow:

Payable at	January 31, 2019
Normal cost	2,214
Past service portion	57,118
Total	59,332

**Table 1c Allocation of Total 2018 Contributions to Employee Groups for Combined Fund
Employer Contribution based on Stable Employer Contribution Policy**

Group	Active Members	Covered Compensation	Employer Rate**	Dollar Amount Payable***									
				January 1, 2018	June 1, 2018	July 1, 2018	August 1, 2018	September 1, 2018	October 1, 2018	November 1, 2018	December 1, 2018	January 31, 2019	
General City *	3,289	\$ 179,888,160	7.48%	\$ 13,455,634	\$ 13,894,110	\$ 13,983,505	\$ 14,073,476	\$ 14,164,025	\$ 14,255,157	\$ 14,346,875	\$ 14,439,183	\$ 14,625,585	
Water Department	314	17,616,811	7.48%	1,317,737	1,360,678	1,369,433	1,378,244	1,387,112	1,396,036	1,405,018	1,414,058	1,432,313	
School Board****	4,115	124,086,032	7.48%	9,281,635	9,584,094	9,645,758	9,707,819	9,770,280	9,833,142	9,896,409	9,960,083	10,088,662	
Milwaukee Technical College	-	-	7.48%	-	-	-	-	-	-	-	-	-	
Sewerage Commission	223	18,649,602	7.48%	1,394,990	1,440,448	1,449,716	1,459,044	1,468,431	1,477,879	1,487,388	1,496,958	1,516,283	
Veolia	32	2,625,812	7.48%	196,411	202,811	204,116	205,429	206,751	208,081	209,420	210,768	213,488	
Wisconsin Center District	77	4,231,336	7.48%	316,504	326,818	328,921	331,037	333,167	335,310	337,468	339,639	344,024	
Housing Authority	160	9,495,583	7.48%	710,270	733,415	738,134	742,883	747,663	752,473	757,315	762,187	772,027	
Redevelopment Authority	8	700,682	7.48%	52,411	54,119	54,467	54,818	55,170	55,525	55,882	56,242	56,968	
Policemen	1,854	157,759,603	25.22%	39,786,972	41,083,502	41,347,834	41,613,867	41,881,612	42,151,080	42,422,281	42,695,227	43,246,399	
Firemen	701	59,340,058	26.83%	15,920,938	16,439,750	16,545,524	16,651,978	16,759,117	16,866,946	16,975,468	17,084,689	17,305,243	
TOTAL	10,773	\$ 574,393,679		\$ 82,433,502	\$ 85,119,745	\$ 85,667,408	\$ 86,218,595	\$ 86,773,328	\$ 87,331,629	\$ 87,893,524	\$ 88,459,034	\$ 89,600,992	

* Includes Elected Officials

** Rates apply to Covered Compensation as of the beginning of the year then credited with interest to payable date

*** Actual contribution requirement will be adjusted for the actual payment date of the contribution.

**** Breakdown of contributions for MPS by normal cost and past service portion as follows:

Payable at	January 1, 2018	June 1, 2018	July 1, 2018	August 1, 2018	September 1, 2018	October 1, 2018	November 1, 2018	December 1, 2018	January 31, 2019
Normal cost	2,109,428	2,178,167	2,192,182	2,206,286	2,220,482	2,234,768	2,249,147	2,263,618	2,292,840
Past service portion	7,172,207	7,405,927	7,453,576	7,501,533	7,549,798	7,598,374	7,647,262	7,696,465	7,795,822
Total	9,281,635	9,584,094	9,645,758	9,707,819	9,770,280	9,833,142	9,896,409	9,960,083	10,088,662

Table 1c (Continued)** Allocation of Total Estimated 2019 Contributions to Employee Groups for Combined Fund**

Employer Contribution based on Stable Employer Contribution Policy

Group	Estimated Active Members	Estimated Covered Compensation	Employer Rate**	Dollar Amount Payable***										
				January 1, 2019	June 1, 2019	July 1, 2019	August 1, 2019	September 1, 2019	October 1, 2019	November 1, 2019	December 1, 2019	January 31, 2020		
General City *	3,289	\$ 182,916,460	7.48%	\$ 13,682,151	\$ 14,128,009	\$ 14,218,909	\$ 14,310,394	\$ 14,402,467	\$ 14,495,133	\$ 14,588,395	\$ 14,682,257	\$ 14,771,797		
Water Department	314	17,913,379	7.48%	1,339,921	1,383,584	1,392,486	1,401,446	1,410,463	1,419,538	1,428,671	1,437,863	1,446,425		
School Board*****	4,115	126,174,940	7.48%	9,437,886	9,745,436	9,808,138	9,871,244	9,934,756	9,998,677	10,063,008	10,127,754	10,258,498		
Milwaukee Technical College	-	-	7.48%	-	-	-	-	-	-	-	-	-		
Sewerage Commission	223	18,963,556	7.48%	1,418,474	1,464,698	1,474,121	1,483,606	1,493,152	1,502,758	1,512,427	1,522,158	1,541,809		
Veolia	32	2,670,016	7.48%	199,717	206,225	207,552	208,888	210,232	211,584	212,946	214,316	217,082		
Wisconsin Center District	77	4,302,568	7.48%	321,832	332,320	334,458	336,610	338,775	340,955	343,149	345,357	349,815		
Housing Authority	160	9,655,435	7.48%	722,227	745,762	750,560	755,389	760,249	765,141	770,064	775,018	785,023		
Redevelopment Authority	8	712,478	7.48%	53,293	55,030	55,384	55,740	56,099	56,460	56,823	57,189	57,927		
Policemen	1,854	162,285,537	25.22%	40,928,412	42,262,138	42,534,054	42,807,719	43,083,145	43,360,344	43,639,325	43,920,102	44,487,087		
Firemen	701	60,657,604	26.83%	16,274,435	16,804,767	16,912,889	17,021,707	17,131,225	17,241,448	17,352,380	17,464,026	17,689,477		
TOTAL	10,773	\$ 586,251,973		\$ 84,378,348	\$ 87,127,969	\$ 87,688,551	\$ 88,252,743	\$ 88,820,563	\$ 89,392,038	\$ 89,967,188	\$ 90,546,040	\$ 91,714,940		

* Includes Elected Officials

** Rates apply to Covered Compensation as of the beginning of the year then credited with interest to payable date

*** Actual contribution requirement will be adjusted for the actual payment date of the contribution.

**** The amounts shown above are estimates of the employer contribution requirements due by January 31, 2020.

The actual employer contribution requirements due by January 31, 2020 will be based on the results of the January 1, 2019 actuarial valuation, which is scheduled to be approved at the June 2019 Board meeting.

To the extent that an employer wishes to contribute before the report is approved, the amounts above can serve as a guide. To the extent that the amount contributed is less than the final contribution requirements, the employer will be billed for the remainder, which is to be paid by the end of the year. To the extent that the amount already contributed is more than the required contribution, the employer will receive a credit, with interest, to the contribution for the next year.

***** Breakdown of contributions for MPS by normal cost and past service portion as follow:

Payable at	January 1, 2019	June 1, 2019	July 1, 2019	August 1, 2019	September 1, 2019	October 1, 2019	November 1, 2019	December 1, 2019	January 31, 2020
Normal cost	2,144,939	2,214,835	2,229,086	2,243,427	2,257,862	2,272,389	2,287,010	2,301,724	2,331,438
Past service portion	7,292,947	7,530,601	7,579,052	7,627,817	7,676,894	7,726,288	7,775,998	7,826,030	7,927,060
Total	9,437,886	9,745,436	9,808,138	9,871,244	9,934,756	9,998,677	10,063,008	10,127,754	10,258,498

Table 2a Determination of Employer Contributions to Retirement Fund (in thousands)

Item	General Employees	Police	Fire	Total
1. Active Members	28	-	-	28
2. Covered Compensation	\$ 900	\$ -	\$ -	\$ 900
3. Normal Cost				
a. Total	53	-	-	53
b. Estimated Member Contributions	50	-	-	50
c. Employer Normal Cost (a) - (b), not less than zero	3	-	-	3
4. Active Actuarial Accrued Liability	3,852	-	-	3,852
5. Assets				
a. Actuarial value	9,446	-	-	9,446
b. Market value (Net of Inactive Liabilities)	9,835	-	-	9,835
6. Unfunded Accrued Liability				
a. Actuarial value	(5,594)	-	-	(5,594)
b. Market value (4) - (5)	(5,983)	-	-	(5,983)
7. Amortization of UAL				
a. Actuarial value	(414)	-	-	(414)
b. Market value (Closed Amortization - Eff. Rem. Period) (25.0 years)	(442)	-	-	(442)
8. Annual Contribution Payable January 31, 2019				
a. Actuarial value	\$ -	\$ -	\$ -	\$ -
b. Market value (3) + (7), with interest to 1/31/2019	\$ -	\$ -	\$ -	\$ -

**Table 2b Determination of Employer Contributions to Combined Retirement & Disability Fund
(in thousands)**

Item	General Employees	Police	Fire	Total
1. Active Members	43	1	-	44
2. Covered Compensation	\$ 1,720	\$ 105	\$ -	\$ 1,825
3. Normal Cost				
a. Total	106	20	-	126
b. Estimated Member Contributions	95	7	-	102
c. Employer Normal Cost (a) - (b), not less than zero	11	13	-	24
4. Active Actuarial Accrued Liability	4,597	470	-	5,067
5. Actuarial Assets				
a. Actuarial value	3,031	310	-	3,341
b. Market value (Net of Inactive Liabilities)	3,162	323	-	3,485
6. Unfunded Accrued Liability (UAL)				
a. Actuarial value	1,566	160	-	1,726
b. Market value (4) - (5)	1,435	147	-	1,582
7. Amortization of UAL				
a. Actuarial value	116	12	-	128
b. Market value (Closed Amortization - Eff. Rem. Period)	106 (25.0 years)	11 (25.0 years)	-	117
8. Annual Contribution Payable January 31, 2019				
a. Actuarial value	\$ 138	\$ 27	\$ -	\$ 165
b. Market value (3) + (7), with interest to 1/31/2019	\$ 127	\$ 26	\$ -	\$ 153

**Table 2c Comparison of Stable Contribution Policy to Prior Contribution Requirement for Combined Fund
(in thousands)**

Item	General Employes	Police	Fire	Total
1. Active Members	8,218	1,854	701	10,773
2. Covered Compensation	\$ 357,294	\$ 157,759	\$ 59,340	\$ 574,393
3. Normal Cost				
a. Total	25,484	32,431	12,563	70,478
b. Estimated Member Contributions	18,037	11,043	4,154	33,234
c. Employer Normal Cost (a) - (b), not less than zero	7,447	21,388	8,409	37,244
4. Active Actuarial Accrued Liability	713,900	679,036	277,422	1,670,358
5. Assets				
a. Actuarial value	454,311	432,125	176,546	1,062,982
b. Market value (Net of Inactive Liabilities)	523,766	498,186	203,535	1,225,487
6. Unfunded Accrued Liability				
a. Actuarial value	259,589	246,911	100,876	607,376
b. Market value (4) - (5)	190,134	180,850	73,887	444,871
7. Amortization of UAL				
a. Actuarial value	19,190	18,253	7,457	44,900
b. Market value (Closed Amortization - Eff. Rem. Period)	14,055 (25.0 years)	13,369 (25.0 years)	5,462 (25.0 years)	32,886
8. Annual Contribution Payable January 1, 2018 (3) + (7)				
a. Actuarial value				
i. Baseline	\$ 26,637	\$ 39,641	\$ 15,866	\$ 82,144
ii. Assumed Rate -1%	\$ 50,091	\$ 66,164	\$ 26,148	\$ 142,403
iii. Assumed Rate +1%	\$ 4,698	\$ 15,877	\$ 6,494	\$ 27,069
b. Market value				
i. Baseline	\$ 21,502	\$ 34,757	\$ 13,871	\$ 70,130
ii. Assumed Rate -1%	\$ 45,400	\$ 61,660	\$ 24,319	\$ 131,379
iii. Assumed Rate +1%	\$ 3,051	\$ 14,324	\$ 5,855	\$ 23,230
9. Employer rate as of January 1, 2018 based on				
a. Prior Contribution Requirement				
i. Baseline	7.46%	25.13%	26.74%	14.30%
ii. Assumed Rate -1%	14.02%	41.94%	44.06%	24.79%
iii. Assumed Rate +1%	1.31%	10.06%	10.94%	4.71%
b. Market Based Prior Contribution Requirement				
i. Baseline	6.02%	22.03%	23.38%	12.21%
ii. Assumed Rate -1%	12.71%	39.08%	40.98%	22.87%
iii. Assumed Rate +1%	0.85%	9.08%	9.87%	4.04%
10. Employer rate as of January 1, 2018 based on Stable Employer Contribution Policy				
i. Baseline	7.48%	25.22%	26.83%	14.35%
ii. Assumed Rate -1%	13.08%	39.12%	41.11%	23.13%
iii. Assumed Rate +1%	1.31%	10.03%	10.90%	4.70%

Table 3 Determination of Employer Contributions to Duty Disability Funds (in thousands)

Item	General Employees	Police	Fire	Total
1. Active Members	28	-	-	28
2. Covered Compensation	\$ 900	\$ -	\$ -	\$ 900
3. Normal Cost				
a. Total	1	-	-	1
b. Estimated Member Contributions	-	-	-	-
c. Employer Normal Cost (a) - (b), not less than zero	1	-	-	1
4. Accrued Liability				
a. Actives	26	-	-	26
b. Annuitants	-	-	-	-
c. Total	26	-	-	26
5. Actuarial Value of Assets	104	-	-	104
6. Unfunded Accrued Liability (UAL) (4) - (5)	(78)	-	-	(78)
7. Amortization of UAL (Closed Amortization - Eff. Rem. Period)	(6) (25.0 years)	-	-	(6)
8. Annual Contribution Payable January 31, 2019 (3) + (7), with interest to 1/31/2019	\$ -	\$ -	\$ -	\$ -

Table 4 Determination of City Contributions to Firemen’s Heart & Lung Fund (in thousands)

Item	Amount
1. Active Members	-
2. Covered Compensation	\$ -
3. Normal Cost	
a. Total	-
b. Estimated Member Contributions	-
c. Employer Normal Cost	-
(a) - (b), not less than zero	
4. Accrued Liability	
a. Actives	-
b. Annuitants	-
c. Total	-
5. Actuarial Value of Assets	-
6. Unfunded Accrued Liability (UAL)	-
7. Full Funding Limit	-
(3) + (6), not less than zero, with interest to 1/31/2019	
8. Annual Contribution Payable January 31, 2019	\$ -

Table 5 Member Data

Item	12/31/2016	12/31/2017		
Number of Members	Total	Vested	Non-Vested	Total
Active				
General Employes	8,417	5,226	3,063	8,289
Policemen	1,922	1,476	379	1,855
Firemen	744	625	76	701
Total Active Members	11,083	7,327	3,518	10,845
Inactive				
Deferred Retirees/Refunds	3,416			3,135
Deferred Fire & Police Survivors	-			-
Total Inactive Members	3,416			3,135
Benefit Recipients				
Combined Fund				
General Employes	9,294			9,446
Policemen	2,278			2,386
Firemen	1,300			1,349
Combined Fund Subtotal	12,872			13,181
Retirement Fund	16			15
Duty Disability Funds				
General Employes	-			-
Firemen	-			-
Policemen	-			-
Duty Disability Funds Subtotal	-			-
Firemen's Heart & Lung Fund	-			-
Total Benefit Recipients	12,888			13,196
TOTAL Membership	27,387			27,176

Notes:

(1) Vested members have four or more years of service. Non-vested members have less than four years of service.

Table 5 Member Data (continued)

Item	12/31/2017 Membership		
Number of Members	Consenters	Others	Total
Active			
General Employes	8,218	71	8,289
Policemen	1,854	1	1,855
Firemen	701	-	701
Total Active Members	10,773	72	10,845
Inactive			
Deferred Retirees/Refunds	2,912	223	3,135
Deferred Fire & Police Survivorship Fund	-	-	-
Total Inactive Members	2,912	223	3,135
Benefit Recipients			
Combined Fund	13,181		13,181
Retirement Fund		15	15
Duty Disability Funds			
General Employes	-	-	-
Firemen	-	-	-
Policemen	-	-	-
Duty Disability Funds Subtotal	-	-	-
Firemen's Heart & Lung Fund	-	-	-
Total Benefit Recipients	13,181	15	13,196
TOTAL Membership	26,866	310	27,176

Notes:

- (1) In addition to the above, there are members who have separated from service without vested rights to either a pension or a refund of accumulated contributions. There is no current actuarial liability for such individuals, and their membership will be terminated if they do not return to active service within 5 years of their date of separation from ERS covered employment.

Table 5 Member Data (continued)

Item	12/31/2016	12/31/2017
Annual Earnings		
General Employes	\$ 361,660,000	\$ 359,914,000
Policemen	160,106,000	157,864,000
Firemen	62,184,000	59,340,000
Total Annual Earnings	\$ 583,950,000	\$ 577,118,000
Average Earnings		
General Employes	\$ 42,968	\$ 43,421
Policemen	\$ 83,302	\$ 85,102
Firemen	\$ 83,581	\$ 84,651
Annual Benefit Payments Currently Being Made		
Combined Fund	\$ 340,633,635	\$ 357,665,652
Retirement Fund	\$ 138,235	\$ 129,744
Duty Disability Funds		
General Employes	\$ -	\$ -
Firemen	-	-
Policemen	-	-
Duty Disability Funds Subtotal	\$ -	\$ -
Firemen's Heart & Lung Fund	\$ -	\$ -
Total Benefit Payments	\$ 340,771,870	\$ 357,795,396

Notes:

- (1) "Annual earnings" represent a rate of pay as of the valuation date, and can be considered as the approximate average of (a) earnable compensation for the year just ended, and (b) expected earnable compensation for the year following the valuation date.
- (2) "Annual benefit payments currently being made" equal 12 times the full December monthly payment. The amounts shown include all amounts payable by the ERS, and have been reduced by workers' compensation offsets for members who are currently repaying a workers' compensation award.
- (3) Active members who worked fewer than 100 hours in the prior year but who have not officially terminated employment are included in the count of inactives in Table 5. These members are not assumed to earn additional service in future years.

Financial Data

Information was obtained from unaudited financial statements prepared by the ERS for the year ended December 31, 2017.

The Global Pension Settlement (GPS) requires transfers between various funds as of January 1, 2017 for members who consented to GPS during 2017. This adjustment to the ERS market value of assets is shown in Table 7.

Table 6 Summary of Market Value of Plan Assets as of January 1, 2018 (in thousands)

Item	Amount
1. Market Value of Assets as of December 31, 2016	\$ 4,886,669
2. Contributions During Year	
a. Member	32,494
b. City to Employers' Reserve Fund	-
c. Employer	83,524
d. Total	116,018
3. Disbursements During Year	
Benefit Payments and Refunds During Year	385,331
4. Investment Return (net of Administrative Expenses)	779,171
5. Market Value of Assets as of December 31, 2017 (1) + (2d) - (3) + (4)	5,396,527
6. Average Market Value During 2017 (1) + ((2d) - (3))/2	\$ 4,752,013
7. Rate of Return Reported by ERS Staff	16.41%

Table 7 Allocations between Non-Consenters Who Consented to Global Settlement During 2017 and Those Who Did Not

Allocation of 1/1/2017 Market Value of Assets in Proportion to 1/1/2017 Accrued Liability
Allocation of 1/31/2018 Employer Contribution in Proportion to 1/1/2017 Covered Compensation (in thousands)

Fund	Allocation of 1/1/2017 Market Value of Assets in Funds for Non-Consenters in Proportion to 1/1/2017 Accrued Liability			Allocation of 1/31/2018 Employer Contribution to Funds for Non-Consenters in Proportion to 1/1/2017 Covered Compensation		
	Consenters in 2017	Others	Total (Audited)	Consenters in 2017	Others	Total
1. Retirement Fund	\$ 860	\$ 11,145	\$ 12,005	\$ -	\$ -	\$ -
2. General Employees' Duty Disability Fund	11	92	103	-	-	-
3. Fire & Police Duty Disability Fund	-	-	-	-	-	-
4. Firemen's Heart & Lung Fund	-	-	-	-	-	-
5. Combined Retirement & Disability Fund	<u>227</u>	<u>4,016</u>	<u>4,243</u>	<u>12</u>	<u>150</u>	<u>162</u>
6. Total Funds for Non-Consenters	\$ 1,098	\$ 15,253	\$ 16,351	\$ 12	\$ 150	\$ 162

Notes:

- (1) January 1, 2017 Assets allocated to members who consented to Global Settlement during 2017 are transferred to the Global Combined Fund as of January 1, 2017.
- (2) January 31, 2018 Employer Contributions allocated to members who consented to Global Settlement during 2017 are credited to the Global Combined Fund instead of to the funds for non-consenters.

Table 8 Actuarial Value of Assets as of January 1, 2018 (in thousands)

Item	Total
1. Preliminary Actuarial Value January 1, 2017	\$ 5,056,289
2. Market Value January 1, 2017 (Unaudited)	4,886,669
3. Market Value January 1, 2018 (Unaudited)	5,396,527
4. Contributions	
(a) Member	32,494
(b) Employer	83,524
(c) Total	116,018
5. Benefits and Refunds Paid	385,331
6. Actual Market Return Net of Administrative Expenses	779,171
7. Expected Market Return based on 8.25% Interest	392,041
8. Excess of Actual over Expected Return	
(a) 2017	387,130
(b) 2016	(6,461)
(c) 2015	(374,012)
(d) 2014	(170,983)
(e) 2013	434,858
9. Excess Recognized in the Current Valuation	
(a) 2017	77,426
(b) 2016	(1,292)
(c) 2015	(74,802)
(d) 2014	(34,197)
(e) 2013	86,970
(f) Total	54,105
10. Preliminary Value January 1, 2018 (1) + 4(c) - (5) + (7) + 9(f)	5,233,122
11. Ratio of Preliminary Value to Market Value (10) / (3) *	96.97%
12. Balance in Employers' Reserve Fund	15,637
13. Market Value Excluding Employers' Reserve Fund (3) - (12)	5,380,890
14. Actuarial Value (11) x (13) + (12)	\$ 5,233,486
15. Rate of Return on Actuarial Value of Assets	9.09%

* The 20% asset corridor was removed effective with the January 1, 2018 valuation.

For a description of the development of the actuarial value of assets, refer to the relevant section of the Descriptions of Actuarial Methods and Assumptions of this report.

Table 9 Allocation of Assets among Funds as of January 1, 2018 (in thousands)

Fund	Market Value	Actuarial Value
1. Global Combined Fund	\$ 5,361,680	\$ 5,199,175
2. Employers' Reserve Fund	\$ 15,637	15,637
3. Retirement Fund	\$ 12,850	12,461
4. General Employes' Duty Disability Fund	\$ 107	104
5. Fire & Police Duty Disability Fund	-	-
6. Firemen's Heart & Lung Fund	-	-
7. Combined Retirement & Disability Fund	\$ 4,736	4,592
8. Securities Lending Fund	1,517	1,517
9. Total all Funds	\$ 5,396,527	\$ 5,233,486

Notes:

(1) Values shown include January 31, 2018 contributions receivable

GASB 67/68 DISCLOSURE

Disclosure for GASB 67/68 is to be determined based on the Governmental Employers' fiscal year-end. The actuary is permitted to project the total pension liability to the end of year, using beginning of the year results; however, the actuary is required to consider significant events, such as plan changes, that occurred during the year. The plan's fiduciary net position for GASB 67/68 disclosure should equal the actual year-end market value of assets. The actuarial cost method used for GASB 67/68 is the Entry Age Normal Cost Method. The discount rate was reduced from 8.50% to 8.24%.

Tables 10 through 15 show the required disclosure items for the fiscal year-end 12/31/2017, prepared based on the valuation as of 1/1/2017. Table 16 shows the funded status by Fund based on actuarial and market value of assets. Table 17 provides an actuarial balance sheet for members, comparing the Actuarial Accrued Liability to the Market Value of Assets.

Table 10 Actuarial Methods and Assumptions for GASB 67/68 Disclosure Purpose

The total pension liability as of December 31, 2017 was determined by rolling forward the total pension liability as of January 1, 2017 to December 31, 2017. The following actuarial methods and assumptions were applied to all periods included in the measurement. Other assumptions, such as retirement rates, termination rates, and disability rates, used to determine the total pension liability are contained in the Description of Actuarial Methods and Assumptions for Pension Funding Purpose section of this report.

Valuation Date

January 1, 2017

Actuarial Cost Method

Entry Age Normal – Level Percentage of Pay

Amortization Method

For pension expense; the difference between expected and actual liability experience and changes of assumptions are amortized over the average of the expected remaining service lives of all members. The differences between projected and actual earnings are amortized over a closed period of five years.

Asset Valuation Method

Market Value

Actuarial Assumptions

Investment Rate of Return

8.00% for calendar years through 2022, and 8.25% beginning with calendar year 2023

Projected Salary Increases

General City

2.50% - 5.50%

Police & Fire

4.00% - 13.40%

Inflation Assumption

2.50%

Cost of Living Adjustments

Vary by Employee Group as explained in summary of plan provisions

Mortality Table

For regular retirees and for survivors, the RP-2014 Healthy Annuitant Mortality Table (using 111% of rates for males and 110% of rates for females) projected generationally with Scale MP-2016. For duty and ordinary disability retirees, the RP-2014 Disability Mortality Table (using 102% of rates for males and 98% of rates for females) projected generationally with Scale MP-2016 was used. For death in active service, the RP-2014 Non-annuitant Mortality Table projected generationally with Scale MP-2016.

Experience Study

The actuarial assumptions used in the December 31, 2017 valuation were based on the results of an actuarial experience study for the period January 1, 2012 – December 31, 2016.

The average expected remaining years of service:

The period is 3.93 years for the measurement year 2017. The following is a summary of the membership counts and the development of the average expected remaining years of service as of January 1, 2017.

Members as of December 31, 2016

Remaining service lives			
Group	Number	Service	Average
Retired members and survivors of deceased members currently receiving benefits	12,888	–	
Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits	3,416	–	
Active members	11,083	107,555	
Total	27,387	107,555	3.93

Table 11 Schedule of the Net Pension Liability (in thousands)

	2017	2016
Total pension liability	\$ 5,759,071	\$ 5,312,763
Plan fiduciary net position	<u>5,396,527</u>	<u>4,886,669</u>
Net pension liability (asset)	362,544	426,094
Plan fiduciary net position as a percentage of total pension liability	93.70%	91.98%
Covered employee payroll	\$ 577,119	\$ 583,950
Net pension liability (asset) as a percentage of covered employee payroll	62.82%	72.97%

Discount rate

The discount rate used to measure the total pension liability was 8.24 percent. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current contribution rate and that contributions from ERS agencies will be made at contractually required rates, actuarially determined. Based on those assumptions, the ERS's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. The cross over analysis produces a single rate of 8.24 percent, which reflects the long-term expected rate of return on ERS investments. Therefore, the discount rate was applied to all periods of projected benefit payments to determine the total pension liability. In the event of benefit payments not covered by the Plans fiduciary net position, a municipal bond rate of 3.16 percent would have been used to discount the benefit payments not covered by the Plan's fiduciary net position. The 3.16 percent rate equals the S&P Municipal Bond 20-Year High Grade Rate Index (yield to maturity) at December 29, 2017.

Sensitivity of the net pension liability to changes in the discount rate

The following presents the net pension liability of the ERS calculated using the discount rate of 8.24 percent, as well as what the ERS's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (7.24 percent) or 1-percentage-point higher (9.24 percent) than the current rate:

	1% Decrease <u>(7.24%)</u>	Current Discount <u>(8.24%)</u>	1% Increase <u>(9.24%)</u>
ERS's net pension liability	\$ 1,018,101	\$ 362,544	\$ (186,511)

Table 12a Development of Discount Rate- Projection of the Fiduciary Net Position

This projection is used only for determining if the plan has a crossover point for developing the discount rate under GASB 67. For this projection, member contributions and benefit payments do not include amounts for future new members. Employer contributions include projected amounts for current members, plus amounts for new members to the extent the employer contribution rate exceeds the employer normal cost rate for the new members. Administrative expenses are based on the most recent fiscal year end, assumed to increase annually at an assumed inflation rate of 2.50 percent.

Projection of the Pension plan's Fiduciary Net Position								
Fiscal Year Ending 12/31/	Interest Rate	Projected Beginning Fiduciary Net Position	Member Contributions	Employer Contributions	Projected Benefit payments	Administrative Expenses	Projected Investment Earnings	Projected Ending Fiduciary Net Position
2018	8.00%	5,396,527,000	33,532,520	81,874,550	379,499,253	8,637,000	420,812,993	5,544,610,810
2019	8.00%	5,544,610,810	32,054,220	80,145,565	397,351,765	8,896,110	431,806,941	5,682,369,661
2020	8.00%	5,682,369,661	30,578,108	78,233,384	414,875,868	9,162,993	441,980,478	5,809,122,769
2021	8.00%	5,809,122,769	29,215,227	76,404,552	433,182,329	9,437,883	451,249,804	5,923,372,139
2022	8.00%	5,923,372,139	27,843,867	74,342,336	450,996,747	9,721,020	459,528,509	6,024,369,085
2023	8.25%	6,024,369,085	26,512,929	86,917,909	468,222,387	10,012,650	481,962,276	6,141,527,162
2024	8.25%	6,141,527,162	25,230,890	85,270,215	484,251,248	10,313,030	490,833,385	6,248,297,374
2025	8.25%	6,248,297,374	24,018,355	83,786,507	499,195,142	10,622,421	498,901,509	6,345,186,182
2026	8.25%	6,345,186,182	22,852,810	82,456,195	512,708,010	10,941,093	506,221,331	6,433,067,415
2027	8.25%	6,433,067,415	21,707,032	81,121,425	527,680,272	11,269,326	512,738,065	6,509,684,338
2028	8.25%	6,509,684,338	20,495,285	79,523,487	543,434,631	11,607,406	518,279,248	6,572,940,322
2029	8.25%	6,572,940,322	19,309,178	77,989,849	556,341,275	11,955,628	522,838,914	6,624,781,359
2030	8.25%	6,624,781,359	18,170,853	76,579,228	569,984,629	12,314,297	526,433,072	6,663,665,586
2031	8.25%	6,663,665,586	17,059,114	75,354,240	582,273,519	12,683,726	529,022,475	6,690,144,170
2032	8.25%	6,690,144,170	15,934,288	74,039,297	591,774,995	13,064,237	530,698,686	6,705,977,210
2033	8.25%	6,705,977,210	14,693,812	73,607,331	604,698,230	13,456,165	531,386,673	6,707,510,632
2034	8.25%	6,707,510,632	13,292,859	71,243,303	615,189,425	13,859,850	530,908,461	6,693,905,980
2035	8.25%	6,693,905,980	12,048,946	69,351,759	626,778,159	14,275,645	529,161,553	6,663,414,434
2036	8.25%	6,663,414,434	10,925,243	67,926,477	633,510,441	14,703,914	526,245,482	6,620,297,281
2037	8.25%	6,620,297,281	9,800,058	66,432,911	642,538,610	15,145,032	522,189,685	6,561,036,292
2038	8.25%	6,561,036,292	8,804,956	65,411,275	649,080,983	15,599,383	516,928,849	6,487,501,006
2039	8.25%	6,487,501,006	7,867,877	64,598,917	652,482,716	16,067,364	510,630,397	6,402,048,117
2040	8.25%	6,402,048,117	6,926,627	63,761,456	656,036,871	16,549,385	503,340,670	6,303,490,614
2041	8.25%	6,303,490,614	6,031,897	63,136,018	657,342,838	17,045,867	495,072,618	6,193,342,441
2042	8.25%	6,193,342,441	5,133,613	62,454,309	659,948,947	17,557,243	485,791,623	6,069,215,797
2043	8.25%	6,069,215,797	4,289,706	63,715,531	658,637,249	18,083,960	475,600,769	5,936,100,594
2044	8.25%	5,936,100,594	3,576,508	63,592,333	657,014,791	18,626,479	464,628,811	5,792,256,977
2045	8.25%	5,792,256,977	2,957,697	63,655,035	652,928,361	19,185,273	452,884,288	5,639,640,363
2046	8.25%	5,639,640,363	2,403,992	63,869,258	647,332,365	19,760,831	440,486,507	5,479,306,924
2047	8.25%	5,479,306,924	1,913,901	64,197,926	641,432,251	20,353,656	427,471,265	5,311,104,108
2048	8.25%	5,311,104,108	1,490,718	64,660,081	633,379,917	20,964,266	413,903,112	5,136,813,836
2049	8.25%	5,136,813,836	1,142,256	65,276,819	623,717,168	21,593,194	399,907,876	4,957,830,425
2050	8.25%	4,957,830,425	861,782	65,898,089	613,343,485	22,240,990	385,556,995	4,774,562,815
2051	8.25%	4,774,562,815	641,062	66,661,605	601,476,485	22,908,219	370,921,798	4,588,402,577
2052	8.25%	4,588,402,577	476,113	67,519,061	589,010,841	23,595,466	356,078,003	4,399,869,446
2053	8.25%	4,399,869,446	343,925	68,460,246	575,613,364	24,303,330	341,080,838	4,209,837,762

Table 12a Development of Discount Rate- Projection of the Fiduciary Net Position (continued)

Projection of the Pension plan's Fiduciary Net Position								
Fiscal Year Ending 12/31/	Interest Rate	Projected Beginning Fiduciary Net Position	Member Contributions	Employer Contributions	Projected Benefit payments	Administrative Expenses	Projected Investment Earnings	Projected Ending Fiduciary Net Position
2054	8.25%	4,209,837,762	243,954	69,501,805	561,421,852	25,032,430	325,997,389	4,019,126,628
2055	8.25%	4,019,126,628	169,963	70,554,387	546,521,519	25,783,403	310,887,748	3,828,433,804
2056	8.25%	3,828,433,804	114,128	71,700,087	531,078,303	26,556,905	295,805,673	3,638,418,484
2057	8.25%	3,638,418,484	71,723	72,909,225	515,132,687	27,353,612	280,802,429	3,449,715,562
2058	8.25%	3,449,715,562	42,084	74,209,965	498,775,741	28,174,220	265,927,745	3,262,945,394
2059	8.25%	3,262,945,394	22,083	75,602,867	482,034,254	29,019,447	251,231,559	3,078,748,203
2060	8.25%	3,078,748,203	11,609	76,998,646	464,993,128	29,890,030	236,759,469	2,897,634,768
2061	8.25%	2,897,634,768	6,989	78,473,695	447,756,452	30,786,731	222,552,290	2,720,124,559
2062	8.25%	2,720,124,559	3,915	80,047,477	430,385,678	31,710,333	208,650,936	2,546,730,876
2063	8.25%	2,546,730,876	2,052	81,730,663	412,934,774	32,661,643	195,095,920	2,377,963,094
2064	8.25%	2,377,963,094	1,060	83,524,890	395,454,851	33,641,493	181,927,177	2,214,319,878
2065	8.25%	2,214,319,878	519	85,421,821	377,987,791	34,650,737	169,183,722	2,056,287,411
2066	8.25%	2,056,287,411	302	87,352,180	360,571,227	35,690,259	156,901,215	1,904,279,621
2067	8.25%	1,904,279,621	126	89,354,913	343,234,693	36,760,967	145,114,143	1,758,753,142
2068	8.25%	1,758,753,142	84	91,432,077	326,005,824	37,863,796	133,859,089	1,620,174,772
2069	8.25%	1,620,174,772	35	93,564,934	308,910,535	38,999,710	123,172,676	1,489,002,172
2070	8.25%	1,489,002,172	0	95,755,303	291,974,438	40,169,701	113,091,640	1,365,704,975
2071	8.25%	1,365,704,975	0	97,954,438	275,222,599	41,374,793	103,651,639	1,250,713,662
2072	8.25%	1,250,713,662	0	100,167,321	258,679,668	42,616,036	94,887,331	1,144,472,609
2073	8.25%	1,144,472,609	0	102,412,702	242,369,821	43,894,517	86,835,110	1,047,456,083
2074	8.25%	1,047,456,083	0	104,675,753	226,316,188	45,211,353	79,532,491	960,136,786
2075	8.25%	960,136,786	0	106,979,257	210,544,716	46,567,693	73,018,292	883,021,926
2076	8.25%	883,021,926	0	109,296,638	195,084,888	47,964,724	67,331,999	816,600,950
2077	8.25%	816,600,950	0	111,643,778	179,971,488	49,403,666	62,513,159	761,382,734
2078	8.25%	761,382,734	0	114,037,538	165,247,985	50,885,776	58,602,606	717,889,117
2079	8.25%	717,889,117	0	116,475,797	150,960,481	52,412,349	55,641,350	686,633,434
2080	8.25%	686,633,434	0	118,964,338	137,156,583	53,984,720	53,669,958	668,126,427
2081	8.25%	668,126,427	0	121,479,402	123,882,922	55,604,261	52,727,609	662,846,254
2082	8.25%	662,846,254	0	124,025,871	111,185,489	57,272,389	52,851,996	671,266,243
2083	8.25%	671,266,243	0	126,612,544	99,108,297	58,990,561	54,080,655	693,860,584
2084	8.25%	693,860,584	0	129,249,202	87,696,785	60,760,278	56,451,174	731,103,897
2085	8.25%	731,103,897	0	131,936,051	76,999,118	62,583,086	60,000,668	783,458,413
2086	8.25%	783,458,413	0	134,653,149	67,057,496	64,460,579	64,764,641	851,358,128
2087	8.25%	851,358,128	0	137,406,679	57,905,528	66,394,396	70,777,699	935,242,582
2088	8.25%	935,242,582	0	140,221,306	49,562,972	68,386,228	78,076,237	1,035,590,925
2089	8.25%	1,035,590,925	0	143,116,267	42,031,584	70,437,815	86,700,435	1,152,938,229
2090	8.25%	1,152,938,229	0	146,107,612	35,296,488	72,550,949	96,695,636	1,287,894,040
2091	8.25%	1,287,894,040	0	149,197,907	29,328,039	74,727,478	108,113,382	1,441,149,812
2092	8.25%	1,441,149,812	0	152,379,432	24,086,794	76,969,302	121,011,947	1,613,485,095

After 2091, the projected investment earnings will exceed the projected benefit payments and administrative expense.

Table 12b Development of Discount Rate- Present Values of Projected Benefits

Actuarial Present value of Projected Benefit payments										8.24%
Fiscal Year Ending	Interest Rate	Period	Projected Beginning Fiduciary Net Position	Projected Benefit payments	Projected Benefit Payments		Present value of Benefit payments			
					"Funded" Portion	"UnFunded" Portion	Funded Portion at 8.00-8.25%*	Unfunded Portion at 3.16%	Using a Single Discount Rate of	
12/31/	i	(a)	(b)	(c)	(d)	(e)	(f)= (d)/(1+i)^(a)	(g)= (e)/(1+3.16%)^(a)	(h)=(c)/(1+8.24%)^(a)	
2018	8.00%	1	5,396,527,000	379,499,253	379,499,253	0	351,388,198	0	350,622,989	
2019	8.00%	2	5,544,610,810	397,351,765	397,351,765	0	340,665,093	0	339,182,993	
2020	8.00%	3	5,682,369,661	414,875,868	414,875,868	0	329,341,840	0	327,194,924	
2021	8.00%	4	5,809,122,769	433,182,329	433,182,329	0	318,401,944	0	315,637,488	
2022	8.00%	5	5,923,372,139	450,996,747	450,996,747	0	306,940,808	0	303,613,247	
2023	8.25%	6	6,024,369,085	468,222,387	468,222,387	0	290,994,476	0	291,225,194	
2024	8.25%	7	6,141,527,162	484,251,248	484,251,248	0	278,019,600	0	278,276,786	
2025	8.25%	8	6,248,297,374	499,195,142	499,195,142	0	264,756,792	0	265,036,716	
2026	8.25%	9	6,345,186,182	512,708,010	512,708,010	0	251,199,608	0	251,498,416	
2027	8.25%	10	6,433,067,415	527,680,272	527,680,272	0	238,831,611	0	239,147,294	
2028	8.25%	11	6,509,684,338	543,434,631	543,434,631	0	227,216,756	0	227,547,142	
2029	8.25%	12	6,572,940,322	556,341,275	556,341,275	0	214,885,159	0	215,226,041	
2030	8.25%	13	6,624,781,359	569,984,629	569,984,629	0	203,376,317	0	203,725,851	
2031	8.25%	14	6,663,665,586	582,273,519	582,273,519	0	191,927,130	0	192,282,384	
2032	8.25%	15	6,690,144,170	591,774,995	591,774,995	0	180,193,049	0	180,550,431	
2033	8.25%	16	6,705,977,210	604,698,230	604,698,230	0	170,095,262	0	170,455,131	
2034	8.25%	17	6,707,510,632	615,189,425	615,189,425	0	159,858,037	0	160,217,409	
2035	8.25%	18	6,693,905,980	626,778,159	626,778,159	0	150,456,711	0	150,814,868	
2036	8.25%	19	6,663,414,434	633,510,441	633,510,441	0	140,482,938	0	140,835,955	
2037	8.25%	20	6,620,297,281	642,538,610	642,538,610	0	131,625,832	0	131,974,023	
2038	8.25%	21	6,561,036,292	649,080,983	649,080,983	0	122,832,384	0	123,173,583	
2039	8.25%	22	6,487,501,006	652,482,716	652,482,716	0	114,065,708	0	114,397,665	
2040	8.25%	23	6,402,048,117	656,036,871	656,036,871	0	105,946,456	0	106,268,820	
2041	8.25%	24	6,303,490,614	657,342,838	657,342,838	0	98,066,848	0	98,378,231	
2042	8.25%	25	6,193,342,441	659,948,947	659,948,947	0	90,952,097	0	91,252,942	
2043	8.25%	26	6,069,215,797	658,637,249	658,637,249	0	83,853,416	0	84,141,894	
2044	8.25%	27	5,936,100,594	657,014,791	657,014,791	0	77,271,921	0	77,548,000	
2045	8.25%	28	5,792,256,977	652,928,361	652,928,361	0	70,938,858	0	71,201,714	
2046	8.25%	29	5,639,640,363	647,332,365	647,332,365	0	64,970,779	0	65,220,136	
2047	8.25%	30	5,479,306,924	641,432,251	641,432,251	0	59,472,150	0	59,708,290	
2048	8.25%	31	5,311,104,108	633,379,917	633,379,917	0	54,249,936	0	54,472,535	
2049	8.25%	32	5,136,813,836	623,717,168	623,717,168	0	49,350,861	0	49,559,905	
2050	8.25%	33	4,957,830,425	613,343,485	613,343,485	0	44,831,461	0	45,027,308	
2051	8.25%	34	4,774,562,815	601,476,485	601,476,485	0	40,613,450	0	40,796,259	
2052	8.25%	35	4,588,402,577	589,010,841	589,010,841	0	36,740,631	0	36,910,883	
2053	8.25%	36	4,399,869,446	575,613,364	575,613,364	0	33,168,535	0	33,326,636	

Table 12b Development of Discount Rate- Present Values of Projected Benefits (continued)

Actuarial Present value of Projected Benefit payments										8.24%
Fiscal Year Ending	Interest Rate	Period	Projected Beginning Fiduciary Net Position	Projected Benefit payments	Projected Benefit Payments		Present value of Benefit payments			
					"Funded" Portion	"UnFunded" Portion	Funded Portion at 8.00-8.25%*	Unfunded Portion at 3.16%	Using a Single Discount Rate of	
12/31/	i	(a)	(b)	(c)	(d)	(e)	(f)= (d)/(1+i)^(a)	(g)= (e)/(1+3.16%)^(a)	(h)=(c)/(1+8.24%)^(a)	
2054	8.25%	37	4,209,837,762	561,421,852	561,421,852	0	29,885,245	0	30,031,663	
2055	8.25%	38	4,019,126,628	546,521,519	546,521,519	0	26,874,901	0	27,010,138	
2056	8.25%	39	3,828,433,804	531,078,303	531,078,303	0	24,125,163	0	24,249,766	
2057	8.25%	40	3,638,418,484	515,132,687	515,132,687	0	21,617,373	0	21,731,893	
2058	8.25%	41	3,449,715,562	498,775,741	498,775,741	0	19,335,759	0	19,440,760	
2059	8.25%	42	3,262,945,394	482,034,254	482,034,254	0	17,262,587	0	17,358,623	
2060	8.25%	43	3,078,748,203	464,993,128	464,993,128	0	15,383,198	0	15,470,821	
2061	8.25%	44	2,897,634,768	447,756,452	447,756,452	0	13,684,030	0	13,763,794	
2062	8.25%	45	2,720,124,559	430,385,678	430,385,678	0	12,150,722	0	12,223,162	
2063	8.25%	46	2,546,730,876	412,934,774	412,934,774	0	10,769,557	0	10,835,194	
2064	8.25%	47	2,377,963,094	395,454,851	395,454,851	0	9,527,641	0	9,586,975	
2065	8.25%	48	2,214,319,878	377,987,791	377,987,791	0	8,412,757	0	8,466,266	
2066	8.25%	49	2,056,287,411	360,571,227	360,571,227	0	7,413,507	0	7,461,647	
2067	8.25%	50	1,904,279,621	343,234,693	343,234,693	0	6,519,224	0	6,562,423	
2068	8.25%	51	1,758,753,142	326,005,824	326,005,824	0	5,720,081	0	5,758,745	
2069	8.25%	52	1,620,174,772	308,910,535	308,910,535	0	5,007,047	0	5,041,557	
2070	8.25%	53	1,489,002,172	291,974,438	291,974,438	0	4,371,856	0	4,402,570	
2071	8.25%	54	1,365,704,975	275,222,599	275,222,599	0	3,806,950	0	3,834,202	
2072	8.25%	55	1,250,713,662	258,679,668	258,679,668	0	3,305,427	0	3,329,528	
2073	8.25%	56	1,144,472,609	242,369,821	242,369,821	0	2,860,987	0	2,882,228	
2074	8.25%	57	1,047,456,083	226,316,188	226,316,188	0	2,467,886	0	2,486,537	
2075	8.25%	58	960,136,786	210,544,716	210,544,716	0	2,120,928	0	2,137,239	
2076	8.25%	59	883,021,926	195,084,888	195,084,888	0	1,815,420	0	1,829,624	
2077	8.25%	60	816,600,950	179,971,488	179,971,488	0	1,547,139	0	1,559,450	
2078	8.25%	61	761,382,734	165,247,985	165,247,985	0	1,312,303	0	1,322,919	
2079	8.25%	62	717,889,117	150,960,481	150,960,481	0	1,107,473	0	1,116,580	
2080	8.25%	63	686,633,434	137,156,583	137,156,583	0	929,520	0	937,287	
2081	8.25%	64	668,126,427	123,882,922	123,882,922	0	775,578	0	782,162	
2082	8.25%	65	662,846,254	111,185,489	111,185,489	0	643,035	0	648,579	
2083	8.25%	66	671,266,243	99,108,297	99,108,297	0	529,503	0	534,139	
2084	8.25%	67	693,860,584	87,696,785	87,696,785	0	432,827	0	436,674	
2085	8.25%	68	731,103,897	76,999,118	76,999,118	0	351,066	0	354,233	
2086	8.25%	69	783,458,413	67,057,496	67,057,496	0	282,437	0	285,023	
2087	8.25%	70	851,358,128	57,905,528	57,905,528	0	225,303	0	227,396	
2088	8.25%	71	935,242,582	49,562,972	49,562,972	0	178,146	0	179,825	
2089	8.25%	72	1,035,590,925	42,031,584	42,031,584	0	139,562	0	140,895	
2090	8.25%	73	1,152,938,229	35,296,488	35,296,488	0	108,267	0	109,316	
2091	8.25%	74	1,287,894,040	29,328,039	29,328,039	0	83,103	0	83,920	
2092	8.25%	75	1,441,149,812	24,086,794	24,086,794	0	63,050	0	63,678	

Table 13 Schedule of Changes in the Net Pension Liability

	<u>2017</u>	<u>2016</u>
Total pension liability		
Service cost	\$ 77,681	\$ 70,377
Interest	441,811	430,745
Changes in benefit items	0	0
Differences between expected and actual experience	67,154	(9,921)
Changes of assumptions	244,993	0
Benefit payments including refunds of member contributions	<u>(385,331)</u>	<u>(351,303)</u>
Net change in total pension liability	446,308	139,898
Total pension liability - beginning	<u>5,312,763</u>	<u>5,172,865</u>
Total pension liability - ending	<u>\$ 5,759,071</u>	<u>\$ 5,312,763</u>
Plan fiduciary net position		
Contributions - employer	\$ 83,524	\$ 74,095
Contributions - member	32,494	35,918
Net investment income	787,808	383,747
Benefit payments, including refunds of member contributions	(385,331)	(351,303)
Administrative expense	(8,637)	(8,096)
Other	<u>0</u>	<u>0</u>
Net change in plan fiduciary net pension	509,858	134,361
Plan fiduciary net position - beginning	<u>4,886,669</u>	<u>4,752,308</u>
Plan fiduciary net position - ending	<u>\$ 5,396,527</u>	<u>\$ 4,886,669</u>
Net pension liability (asset) - ending	<u>\$ 362,544</u>	<u>\$ 426,094</u>

Table 14 Schedule of Contributions

Last 10 Fiscal Years (Dollar Amounts in thousands)	Fiscal Year Ending December 31									
	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>
Actuarially Determined Contributions	\$ 83,524	\$ 74,095	\$ 72,198	\$ 72,844	\$ 79,533	\$ 73,159	\$ 0	\$ 0	\$ 60,098	\$ 0
Contributions in relation to the actuarially determined contribution	83,524	74,095	72,198	72,844	79,533	73,159	0	0	60,098	0
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Covered employee payroll	\$ 577,118	\$ 583,950	\$ 535,802	\$ 529,939	\$ 521,651	\$ 523,738	\$ 525,181	\$ 538,218	\$ 553,846	\$ 536,558
Contributions as a percentage of covered-employee payroll	14.47%	12.69%	13.47%	13.75%	15.25%	13.97%	0.00%	0.00%	10.85%	0.00%

GASB 67 is applicable for fiscal years ending 2014 and later.

The information presented above was determined as part of the actuarial valuation as of one year prior to the dates indicated

(i.e., the contribution determined by the valuation completed as of January 1, 2015 was contributed for the fiscal year ending December 31, 2015).

Table 15 GASB 68 Information Collective Pension Expense (in thousands)

Item	Measurement Year Ending Dec. 31, 2017	Measurement Year Ending Dec. 31, 2016
Pension Expense		
Service cost	\$ 77,681	\$ 70,377
Interest cost on total pension liability	441,811	430,745
Projected earnings on plan investments	(391,685)	(381,778)
Contributions - Member	(32,494)	(35,918)
Administrative expense	8,637	8,096
Current period	-	-
Plan changes	-	-
Changes in assumptions	62,340	-
Differences between expected and actual liab. experience	17,088	(2,385)
Difference between projected and actual earnings	(79,225)	(394)
Recognition of prior years'	-	-
Deferred outflows	104,727	104,727
Deferred inflows	(11,171)	(8,392)
Other changes in fiduciary net position	-	-
Pension expense	197,709	185,078

Table 15 GASB 68 Information (continued) Details of the Recognized and Deferred Inflows and Outflows of Resources

Amortization of Changes in Assumptions (in thousands)

Measurement Year	2014	2015	2016	2017	Outflows	Inflows	Total
Amount Established	-	(5,206)	-	244,993			
Recognition Period	4.09	4.20	4.16	3.93			
Annual Recognition	-	(1,240)	-	62,340			
Amount Recognized							
2014	-				-	-	-
2015	-	(1,240)			-	(1,240)	(1,240)
2016	-	(1,240)	-		-	(1,240)	(1,240)
2017	-	(1,240)	-	62,340	62,340	(1,240)	61,100
2018	-	(1,240)	-	62,340	62,340	(1,240)	61,100
2019	-	(246)	-	62,340	62,340	(246)	62,094
2020	-	-	-	57,973	57,973	-	57,973
2021	-	-	-	-	-	-	-
Deferred Balance							
2014	-				-		
2015	-	(3,966)			-	(3,966)	(3,966)
2016	-	(2,726)	-		-	(2,726)	(2,726)
2017	-	(1,486)	-	182,653	182,653	(1,486)	181,167
2018	-	(246)	-	120,313	120,313	(246)	120,067
2019	-	-	-	57,973	57,973	-	57,973
2020	-	-	-	-	-	-	-

Table 15 GASB 68 Information (continued) Details of the Recognized and Deferred Inflows and Outflows of Resources

Amortization of Difference between Actual and Expected Experience (in thousands)

Measurement Year	2014	2015	2016	2017	Outflows	Inflows	Total
Amount Established	-	(30,036)	(9,921)	67,154			
Recognition Period	4.09	4.20	4.16	3.93			
Annual Recognition	-	(7,152)	(2,385)	17,088			
Amount Recognized							
2014	-	-	-	-	-	-	-
2015	-	(7,152)	-	-	-	(7,152)	(7,152)
2016	-	(7,152)	(2,385)	-	-	(9,537)	(9,537)
2017	-	(7,152)	(2,385)	17,088	17,088	(9,537)	7,551
2018	-	(7,152)	(2,385)	17,088	17,088	(9,537)	7,551
2019	-	(1,428)	(2,385)	17,088	17,088	(3,813)	13,275
2020	-	-	(381)	15,890	15,890	(381)	15,509
2021	-	-	-	-	-	-	-
Deferred Balance							
2014	-	-	-	-	-	-	-
2015	-	(22,884)	-	-	-	(22,884)	(22,884)
2016	-	(15,732)	(7,536)	-	-	(23,268)	(23,268)
2017	-	(8,580)	(5,151)	50,066	50,066	(13,731)	36,335
2018	-	(1,428)	(2,766)	32,978	32,978	(4,194)	28,784
2019	-	-	(381)	15,890	15,890	(381)	15,509
2020	-	-	-	-	-	-	-

Table 15 GASB 68 Information (continued) Details of the Recognized and Deferred Inflows and Outflows of Resources

Amortization of Difference between Projected and Actual Earnings (in thousands)

Measurement Year	2014	2015	2016	2017	Outflows	Inflows	Total
Amount Established	159,705	363,926	(1,969)	(396,123)			
Recognition Period	5.00	5.00	5.00	5.00			
Annual Recognition	31,941	72,786	(394)	(79,225)			
Amount Recognized							
2014	31,941	-			31,941	-	31,941
2015	31,941	72,786			104,727	-	104,727
2016	31,941	72,786	(394)		104,727	(394)	104,333
2017	31,941	72,786	(394)	(79,225)	104,727	(79,619)	25,108
2018	31,941	72,786	(394)	(79,225)	104,727	(79,619)	25,108
2019	-	72,782	(394)	(79,225)	72,782	(79,619)	(6,837)
2020	-	-	(393)	(79,225)	-	(79,618)	(79,618)
2021	-	-	-	(79,223)	-	(79,223)	(79,223)
2022	-	-	-	-	-	-	-
Deferred Balance							
2014	127,764	-			127,764	-	127,764
2015	95,823	291,140			386,963	-	386,963
2016	63,882	218,354	(1,575)		282,236	(1,575)	280,661
2017	31,941	145,568	(1,181)	(316,898)	177,509	(318,079)	(140,570)
2018	-	72,782	(787)	(237,673)	72,782	(238,460)	(165,678)
2019	-	-	(393)	(158,448)	-	(158,841)	(158,841)
2020	-	-	-	(79,223)	-	(79,223)	(79,223)
2021	-	-	-	-	-	-	-

Table 15 GASB 68 Information (continued) Schedule of Pension Amounts by Employer (in thousands)

Employees' Retirement System Schedule of Pension Amounts by Employer As of and for the year ended (\$ in thousands)	Deferred Outflows of Resources							Deferred Inflows of Resources					Pension Expense			
	12/31/2016 Net pension liability (asset)	12/31/2017 Net Pension Liability (asset)	Difference Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments		Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions		Total Deferred Outflows of Resources	Difference Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments		Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions		Proportionate Share of Pension Expense	Changes in Deferred Amount from Changes in Proportion and Differences Between Employer Contributions and Proportional Share of Contributions	Total Pension Expense
				Changes of Assumptions	Share of Contributions	Changes of Assumptions	Share of Contributions			Resources	Expense	Contributions				
General City	86,362	68,549	9,466	33,563	34,536	66	77,631	2,596	60,142	281	1,775	64,794	37,383	(531)	36,852	
Water Department	7,961	6,569	907	3,216	3,309	18	7,450	249	5,763	27	74	6,113	3,582	(14)	3,568	
School Board	56,030	45,852	6,332	22,450	23,101	118	52,001	1,737	40,229	188	670	42,824	25,005	(168)	24,837	
Milwaukee Area Technical College	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sewerage Commission	8,222	6,435	889	3,151	3,242	3	7,285	244	5,646	26	201	6,117	3,509	(62)	3,447	
Veolia	1,673	1,094	151	536	551	4	1,242	41	960	4	145	1,150	597	(46)	551	
Wisconsin Center	1,953	1,606	222	786	809	5	1,822	61	1,409	7	20	1,497	876	(4)	872	
Housing Authority	4,785	3,973	549	1,946	2,002	4	4,501	151	3,487	16	49	3,703	2,167	(13)	2,154	
Redevelopment Authority	398	296	41	145	149	1	336	11	259	1	25	296	161	(8)	153	
Policemen	177,630	159,960	22,090	78,320	80,590	3,170	184,170	6,058	140,342	656	137	147,193	87,233	925	88,158	
Firemen	81,080	68,208	9,419	33,396	34,364	34	77,213	2,583	59,842	280	327	63,032	37,196	(79)	37,117	
Total for All Entities	\$ 426,094	362,544	50,066	177,509	182,653	3,423	413,651	13,731	318,079	1,486	3,423	336,719	197,709	-	197,709	

Table 16 January 1, 2018 Valuation Funded Status on Actuarial and Market Value of Assets (in thousands)

Fund	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Market Value of Assets (MVA)	Unfunded Actuarial Accrued Liability Based on AVA (UAAL)	Unfunded Actuarial Accrued Liability Based on MVA (UAAL)	Percent Funded Based on AVA	Percent Funded Based on MVA
1. Global Combined Fund	\$ 5,806,551	\$ 5,199,175	\$ 5,361,680	\$ 607,376	\$ 444,871	89.5%	92.3%
2. Employers' Reserve Fund	-	15,637	15,637	(15,637)	(15,637)	N/A	N/A
3. Retirement Fund	6,867	12,461	12,850	(5,594)	(5,983)	181.5%	187.1%
4. General Employes' Duty Disability Fund	26	104	107	(78)	(81)	400.0%	411.5%
5. Fire & Police Duty Disability Fund	-	-	-	-	-	N/A	N/A
6. Firemen's Heart & Lung Fund	-	-	-	-	-	N/A	N/A
7. Combined Retirement & Disability Fund	6,318	4,592	4,736	1,726	1,582	72.7%	75.0%
8. Securities Lending Fund	-	1,517	1,517	(1,517)	(1,517)	N/A	N/A
8. Total All Funds	\$ 5,819,762	\$ 5,233,486	\$ 5,396,527	\$ 586,276	\$ 423,235	89.9%	92.7%

Table 17 Actuarial Balance Sheet for Members at January 1, 2018 (in thousands)

Item	2017	2018
Assets:		
Market Value of Assets	\$ 4,886,669	\$ 5,396,527
Market Adjustment	<u>169,031</u>	<u>(163,041)</u>
Actuarial Value of Assets	\$ 5,055,700	\$ 5,233,486
Present Value of Future Anticipated Contributions	<u>203,600</u>	<u>586,276</u>
Financial Resources for Actuarial Accrued Liability	\$ 5,259,300	\$ 5,819,762
Liabilities:		
Actuarial Accrued Liability		
Annuitants	\$3,512,367	\$ 3,993,493
Inactive Members		
Member Contributions	81,654	81,567
Employer Financed Portion	31,490	65,398
Active Members		
Member Contributions	508,005	482,151
Employer Financed Portion	<u>1,125,784</u>	<u>1,197,153</u>
Total Liabilities	\$5,259,300	\$ 5,819,762

Description of Actuarial Methods and Assumptions for Pension Funding Purpose

Actuarial Cost Method

The method of financing the ERS is prescribed in Section 36.08 of the MCC.

Method

The method used to determine Normal Cost and Accrued Actuarial Liability (AAL) is the Individual Entry Age Normal Cost Method. The UAAL, under this method, is the AAL over the Actuarial Value of Assets. The total Employer contribution is the sum of the Employer portion of the Normal Cost (Total Normal Cost less expected member contributions) plus an amount to amortize the UAAL according to the Amortization Method.

If the Actuarial Value of Assets exceeds the sum of the AAL and the Employer portion of the Normal Cost, there is no Employer contribution required for that year.

Asset Values

Two asset values are used in this report. A description of each and a brief explanation of where they are used follows.

- **Market Value**

The market value of assets is the value of investments if they were to be sold on the date valued. The market value of assets is used to develop the actuarial value of assets. (See Table 6.)

- **Actuarial Value**

The actuarial value of the assets in the Employers' Reserve Fund is equal to the market value of assets.

The actuarial value of assets for the remaining funds is a smoothed value of assets. The smoothed value is developed in Table 8 of this report. The numbers in parentheses denote the item number in Table 8. Under this method, we start with the Preliminary Actuarial Value of Assets from the prior valuation (1). Then we develop an actual market return (6) and an expected market return based on the applicable valuation interest rate (7). The difference between this actual and expected amount is captured each year and reported (8). We amortize, or divide, the difference over the past five years as an amount to recognize each year (9). The preliminary actuarial value for the current valuation (10) becomes the preliminary actuarial value from the prior year (1) plus non-investment cash flows (contributions (4) less benefits and refunds (5)) plus the expected return on the market value of assets at the applicable valuation interest rate (7) and the current year's amortization (9).

The actuarial value of assets is used in the determination of the Employer's actuarial contribution requirements. (See Tables 2-4.)

Amortization Method

Closed layered amortization method with amortization payments for each base increasing by 2.00% per year. The outstanding balance of the unfunded actuarial accrued liability (UAAL) as of January 1, 2018 will be amortized over a fixed 25-year period. At each subsequent valuation date, any changes to the UAAL arising from actuarial gains or losses will be amortized over a fixed 15-year period and any changes to the UAAL arising from changes in assumptions, methods, or plan provisions will be amortized over a fixed 25-year period.

Other Considerations

Where necessary for determination of separate contributions, assets allocable to various groups were estimated.

Actuarial Assumptions

Adopted Effective January 1, 2018 (except as noted)

Interest Rate and Inflation

Interest: 8.00% return for calendar years 2018 through 2022 and 8.25% beginning with calendar year 2023

Inflation: 2.5% per annum

Salary Increases

Representative values are as follows:

Age	General	Fire and Police
25	4.93%	9.47%
30	3.79	7.72
35	3.78	5.78
40	2.89	4.68
45	2.50	4.28
50	2.50	4.08
55	2.50	4.00
60	2.50	4.00
65	2.50	4.00

Annual increases of 2.5% per annum is assumed for policemen, firemen, and General Employees on duty disability. (The increases for duty disabled fire and police affect both current duty disability benefits and future service retirement or extended life conversion benefits. The increases for General Employees affect only service retirement conversion benefits.)

Early and Normal Retirement

Illustrative rates of retirement are as follows:

Age at Beginning of Year	Early Retirement		Normal Retirement				
	General Employees	General Employees	Firemen	Police Not in Combined Fund	Police In Combined Fund		
42						10%	
43						25	
44						25	
45						25	
46						32	
47						32	
48				10%		32	
49				13		25	
50				13		25	
51				13	44%	25	
52				18	44	25	
53				18	24	25	
54			35%	26%	20	24	25
55	4%		45	26	25	24	25
56	4		30	17	25	40	25
57	4		27	15	30	35	25
58	4		27	20	35	35	25
59	4		22	20	35	35	25
60			19	19	35	35	25
61			19	20	50	35	25
62			28	25	50	50	50
63			20	18	100	100	100
64			20	18	100	100	100
65			30	25	100	100	100
66			30	30	100	100	100
67			18	20	100	100	100
68			18	20	100	100	100
69			18	20	100	100	100
70			100	100	100	100	100

Survivor Benefits and Duty Disability Child Allotments

It is assumed that the female spouse is three years younger than the male. In absence of evidence to the contrary, it is assumed that 85% of General Employees and 95% of Policemen and Firemen are married, with dependent children, described by the following table:

Member's Age at Death or Disability	Number of Dependent Children	Age of Youngest Child
20	0	N/A
25	1.5	1
30	2.5	2
35	2.5	5
40	2.5	8
45	2.0	11
50	1.5	14
55	1.0	15
60 and Over	0	N/A

The percentage of retiring employees assumed to elect option 3, the subsidized 50% option, is 25% for males and 15% for females. The percentage of General Employees assumed electing the 100% PSO option before retirement is 40% for males and 15% for females. For firemen and policemen, 95% are assumed to elect the 100% PSO option before retirement.

Duty Deaths

The following percentages of deaths in active service are assumed to incur in the performance of duty:

General Employees: 5%

Police & Fire: 10% In addition, amongst firemen, 25% of duty deaths are assumed to occur under the Heart and Lung Law.

Duty Disabilities

Employee Group	Percentage of Disabilities	Percentage of Duty Disabilities Assumed		Assumption Adopted January 1
	Incurred in the Performance of Duty	Eligible For the 90% Benefit	Under the Heart & Lung Law	
General	10.0%	N/A	N/A	2018
Police other than MPA	70.0%	5.0%	N/A	2018
MPA enrolled on or before 4/18/2005	70.0%	5.0%	N/A	2018
MPA enrolled after 4/18/2005	62.5%	7.5%	N/A	2008
Fire other than MPFFA	90.0%	5.0%	15.0%	2008
MPFFA enrolled on or before 10/3/2005	90.0%	5.0%	15.0%	2008
MPFFA enrolled after 10/3/2005	81.2%	6.9%	20.8%	2008

Imputed Military Service

The following percentages of eligible members are assumed to earn 1 year of imputed military service credit:

General Employees: 10%

Police: 13%

Fire: 13%

These percentages are based on troop strength statistics from the Department of Defense website. (Adopted 1/1/2003)

Illustrative Rates of Termination for General Employees, Firemen, and Policemen

Age	Less than 5 Years' Service		At least 5 Years' Service	
	Males	Females	Males	Females
General Employees				
20	17.62%	24.05%	13.00%	14.30%
25	15.93	24.12	12.68	14.30
30	11.31	16.77	6.92	8.45
35	10.66	15.60	7.19	7.27
40	8.78	10.40	4.51	8.45
45	9.10	9.23	2.99	4.67
50	8.32	8.58	2.38	3.38
55	6.83	7.80	1.99	3.64
60	-	-	-	-
Fire and Police				
20	6.15%	5.55%	-	-
25	2.33	4.65	1.34%	2.33%
30	2.75	7.38	1.13	3.34
35	3.38	6.63	1.10	1.88
40	4.40	4.40	0.90	0.97
45	5.40	4.40	1.08	1.53
50	8.80	4.40	4.05	6.70
55	10.00	4.40	-	-
60	-	-	-	-

Seasonal Service Credit

The following percentages of eligible members are assumed to receive one year of seasonal service credit:

Member's Union or Bargaining Group	Percentage with Seasonal Service	Assumption Adopted January 1
District Council 48, AFSCME	27.09%	2005
Fire Equipment Dispatchers Local 494, IBEW	0.00%	2006
Electrical Group Local 494, IBEW	31.00%	2006
Machine Shop Local 494, IBEW	12.00%	2005
Bridge Operators Local 195, IBEW	28.57%	2005
Joint 129/48 Local 139, IOUE & DC48	100.00%	2005
Machinists Local 510, IAM	5.00%	2005
Sanitation Local 61, LIUNA	98.06%	2005
TEAM (Techs, Eng, Archs of Milw)	5.00%	2005
MBCTC (Bricklayers, Carpenters, Cement Masons, Painters, Iron Workers)	10.00%	2005
Police Sworn Management, Police Civilian Management, Managers, Elected Officials (except mayor)	3.13%	2005
Non-represented in the Police Department and General City non-represented.	5.00%	2005

Miscellaneous

For members active on the valuation date, credited service in each future year is assumed to be the greater of credited service earned in the year prior to the valuation, or the average of the three highest years of service credit out of the five years that preceded the valuation date (adopted 1/1/2007).

Active members who worked less than 100 hours in the prior year, but who have not officially terminated employment are included in the count of Inactives in Table 5. These members are not assumed to earn additional service credit in future years.

Illustrative Rates of Disability, and Remarriage for General Employees, Firemen, and Policemen

Age	Disability	Remarriage
General Employees		
20	0.050%	14.46%
25	0.050	9.45
30	0.060	5.94
35	0.077	4.02
40	0.131	2.80
45	0.162	1.75
50	0.256	0.96
55	0.527	0.26
60	0.077	-
65	0.200	-
Fire		
20	0.064%	14.46%
25	0.136	9.45
30	0.280	5.94
35	0.760	4.02
40	0.960	2.80
45	0.960	1.75
50	1.080	0.96
55	1.080	0.26
60	1.080	-
65	1.080	-
Police		
20	0.030%	14.46%
25	0.030	9.45
30	0.100	5.94
35	0.187	4.02
40	0.231	2.80
45	0.231	1.75
50	0.210	0.96
55	0.210	0.26
60	0.210	-
65	0.210	-

Illustrative Rates of Health and Disability Mortality for General Employees, Firemen, and Policemen

For regular retirees and for survivors, the RP-2014 Healthy Annuitant Mortality Table (using 111% of rates for males and 110% of rates for females) projected generationally with Scale MP-2016. For duty and ordinary disability retirees, the RP-2014 Disability Mortality Table (using 102% of rates for males and 98% of rates for females) projected generationally with Scale MP-2016 was used. For death in active service, the RP-2014 Non-annuitant Mortality Table projected generationally with Scale MP-2016.

Summary of Plan Provisions

Eligibility for Membership

Membership is optional for all employees that were in service as of January 1, 1938. New employees are automatically members as a condition of employment. Membership is optional for elected officials. Note that unless specifically stated, elected officials follow the same rules as General Employees.

Additionally, effective January 1, 2014, there are two tiers of benefits. Tier 1 is for General Employees enrolled prior to January 1, 2014, and all Fire and Police employees. Tier 2 is for General Employees enrolled on or after January 1, 2014.

Participation in the Combined Fund

On January 19, 2001 the Combined Fund was created and was retroactive to January 1, 2000. Individuals who participate in the Combined Fund may be eligible for certain benefit enhancements which are described in this Summary of Plan Provisions. Members who enroll in the ERS after June 28, 2000, and their eligible survivors, are automatically participants in the Combined Fund. Members enrolled in the ERS on or before June 28, 2000, and their eligible survivors, participate in the Combined Fund provided that the members consented in writing to the Global Pension Settlement. Eligible survivors of members or retirees who died on or before June 28, 2000 participate in the Combined Fund provided that the eligible survivors consented in writing to the Global Pension Settlement. Members or survivors whose benefit payments ceased prior to January 1, 2000, are not eligible for benefits from the Combined Fund.

Creditable Service

Creditable service equals prior service plus membership service. Prior service includes service as an employee prior to January 1, 1938, or prior to an amendment which made the employee eligible for membership in the ERS. Membership service means service as an employee since last becoming a member, on account of which contributions are made.

- For most employees, 2080 hours of service constitute one year of creditable service. For prevailing wage Employees (carpenters and other tradespeople) 2000 hours constitute one year. For members employed by the school board for a 10-month school year, 1600 hours of service constitute a year of creditable service. After July 2006, for members serving as firefighters, 2590 hours of service constitutes one year of creditable service. After September 2016, for members serving as firefighters, 2756 hours of service constitutes one year of creditable service.
- Under certain conditions creditable service may be granted for periods of absence due to military service.
- For purposes of computing the service retirement allowance only, creditable service is granted for periods of eligibility for a duty disability retirement allowance.
- No more than one year of creditable service is granted for service in a single calendar year.

Imputed Service

Imputed service credit may be granted, under specified conditions, to members who consented to the Global Pension Settlement. Imputed service credit is used to calculate the amount of certain benefits, but is not used to determine eligibility for any kind of benefit. An individual may be eligible for one or more types of imputed service credit.

Eligibility for Imputed Service Credit

Only individuals participating in the Combined Fund can become eligible for the following types of imputed service credit.

- **Imputed military service credit:** The member must have been active in the armed forces of the United States of America prior to his or her enrollment in the ERS, and must have been honorably discharged. A member must be described as in 36-04-1-c. An individual eligible for imputed military service credit must apply for the credit.
- **Imputed fire and police service credit:** The member must be described as in 36-04-4-a. The member must have been in active ERS service as a fireman or policeman as of January 1, 2000, and must also retire from ERS service as a fireman or policeman, or die while a fireman or policeman eligible for protective survivorship option benefits. To be eligible, the member must retire or die as a policeman or fireman and must have attained the minimum service retirement requirements as outlined in 36-05-1.
- **Imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund, (the "Fund"):** The member must be described as in 36-04-4-b. The member must have been a policeman who was an active member of the "Fund" as of January 1, 2000. If the policeman was in active ERS service as of January 1, 2000, he must either retire as a policeman on a service retirement allowance at the minimum service retirement age of 57 or after completing 25 years of creditable service as a fireman or policeman; or he must retire on a policeman's duty disability retirement allowance and subsequently convert to a service retirement allowance. If the policeman was retired on a duty disability retirement allowance as of January 1, 2000, then he must subsequently convert to a service retirement allowance.

Benefits Affected by Imputed Service Credit

- **Imputed military service credit and/or imputed fire and police service credit:** The amount of the service retirement allowance, the conversion service retirement allowance, protective survivorship option benefits, and the extended life duty disability retirement allowance are affected. If the eligible individual is also entitled to a 5% Lump Sum Bonus, and/or an 8.6% Dissolution Bonus that is based on the affected benefit, then the imputed service credit is included in calculating the base for the bonus payment(s).
- **Imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund:** The amount of the service retirement allowance and the conversion service retirement allowance are affected. If the service retirement allowance is affected, then the imputed service credit is included in calculating the base for the 5% Lump Sum Bonus.

See the benefit descriptions later in this summary for further details on how imputed service credit is used.

Amount of Imputed Service Credit

- **Imputed military service credit:** A period of eligible military service consists of a period of at least 90 consecutive days of active service in the armed forces of the United States prior to enrollment in the ERS. Total eligible military service equals the sum of all periods of eligible military service. Imputed military service credit equals one-third of the member's total eligible military service, to a maximum of three years of imputed military service credit.
- **Imputed fire and police service credit:** For policemen and firemen with 20 years of creditable service as a fireman or policeman - 1.5 years. For firemen with less than 20 years of creditable service as a fireman or policeman: 1.5 years times the full years of creditable fire and police service, divided by 20.
- **Imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund:** 2 years.

Seasonal Service

Seasonal service credit may be granted under specified conditions to certain General City Employees. Seasonal service credit is used to calculate the amount of certain benefits but is not used to determine eligibility for any kind of benefit.

Eligibility for Seasonal Service Credit

In order to be eligible for seasonal service credit, a member must be a General City employee with five or more years of City service credit, and a member of one of the groups as outlined in 36-04-1-d.

Benefits Affected by Seasonal Service Credit

Seasonal service credit affects the amount of the service retirement allowance, the conversion service retirement allowance and protective survivorship option benefits. If the eligible individual is also entitled to a 5% Lump Sum Bonus that is based on the affected benefit, then the seasonal service credit is included in calculating the base for the bonus payment.

Amount of Seasonal Service Credit

Seasonal service is based on the hours worked as a City Labor-Seasonal employee and/or Playground Laborer-Seasonal employee (MPS), but limited to one year of additional service credit.

Qualifying for an ERS Benefit

Rules regarding qualifying time are encapsulated in the ERS Board Rules & Regulations, XV.G. The rules have been adopted and applied prospectively for enrollments prior to 1995, 1995 to 2001 and post 2001. All members are fully vested after attaining four years of qualifying time.

Earnable Compensation

The annual regular base salary that would be payable to a member if he or she worked the full normal working time for his or her position as described in 36-02-12. Earnable compensation for the calendar year preceding retirement may also include special pays as negotiated in labor agreements such as longevity in rank pay, (limited) variable shift assignment pay, police liaison officer pay, and/or certification pay for policemen; and emergency medical technician pay for firemen. Earnable compensation for school board employees represented by Local 950, OEIU, also includes site differential pay.

Final Average Salary

- a) For General Employees, final average salary means the average annual earnable compensation computed on the 3 years of creditable service preceding retirement, death or separation from service during which earnable compensation was the highest.
- b) For policemen and firemen, final average salary means the average annual earnable compensation computed on the year of creditable service preceding retirement, death or separation from service during which earnable compensation was the highest.
- c) For members converting from a duty disability retirement allowance to a service retirement allowance, the service retirement allowance is computed on the basis of the current compensation of the member's position at the service retirement date.

Eligibility for Service Retirement

For Tier 1 Benefits (applicable to General Employees enrolled prior to January 1, 2014 and all Fire and Police employees), eligibility for service retirement is as defined under 36-05-01 as follows:

- a) A service retirement allowance is payable to any member who elects to retire after attaining the minimum service retirement age, which is age 60 for General Employees and age 57 for policemen and firemen.
- b) General Employees that have attained age 55 and completed 30 years of qualifying time are eligible for service retirement.
- c) Policemen who participate in the Combined Fund are eligible for service retirement at any age after attaining 25 years of fire or police qualifying time, if they were hired prior to December 20, 2015
- d) Policemen who participate in the Combined Fund, who have attained age 50 are eligible for service retirement after completing 25 years of police qualifying time, if they were hired on/after December 20, 2015

- e) Firemen who participate in the Combined Fund, who have attained age 49 and completed 22 years of fire or police qualifying time, are eligible for service retirement, if they were hired prior to July 30, 2016
- f) Firemen who participate in the Combined Fund, who have attained age 52 and completed 25 years of fire qualifying time, are eligible for service retirement, if they were hired on/after July 30, 2016
- g) Policemen and firemen who are not participants in the Combined Fund are eligible for service retirement after attaining age 52 and completing 25 years of fire or police qualifying time.

For Tier 2 Benefits (applicable to General Employees enrolled on or after January 1, 2014), eligibility for service retirement is as defined under 36-05-01 as follows:

- a) A service retirement allowance is payable to any member who elects to retire after attaining the minimum service retirement age, which is age 65 for General Employees.
- b) General Employees that have attained age 60 and completed 30 years of qualifying time are eligible for service retirement.

Amount of Service Retirement Allowance

The amount of a member's service retirement allowance under 36-05-01 is equal to the following:

- a) For General Employees, enrolled prior to January 1, 2014, 2% of final average salary for each year of creditable service, imputed military service, or seasonal service limited to 70% of final average salary. For General Employees, enrolled on or after January 1, 2014, 1.6% of final average salary for each year of creditable service, imputed military service, or seasonal service limited to 70% of final average salary.
- b) For firemen enrolled prior to March 1, 1989, and policemen enrolled prior to July 1, 1989, and who were in active service on or after January 1, 1995, 2.5% of final average salary for each year of creditable service or imputed service (of any kind).
- c) For firemen enrolled after February 28, 1989, and policemen enrolled after June 30, 1989, 2.5% of final average salary for each year of creditable service or imputed military service, limited to 90% of final average salary, plus 2.5% of final average salary for each year of imputed fire and police service or imputed service under the dissolution of the Firemen and Policemen's Survivorship Fund.
- d) For elected officials enrolled prior to January 1, 2014, 2.6% of final average salary for each year of creditable service as an elected official for years before 1996, limited to 70% of the final average salary; from 1996 forward the rate of accrual for creditable service, imputed military service, or seasonal service is 2.5% except for the mayor, who will have an accrual rate of 2.0%, limited to 70% of the final average salary, except for elected officials who were enrolled prior to 2014 and are first elected to office on or after January 1, 2014, in which case their accrual rate is 2% for each year if they contribute 5.5% of their earnable compensation, or 2.5% for each year if they contribute 7% of their earnable compensation. For elected officials enrolled on or after January 1, 2014, 1.6% of final average salary for each year of creditable service as an elected official limited to 70% of the final average salary

Funds Charged with Service Retirement Allowance

For individuals participating in the Combined Fund, service retirement allowance payments are charged to the Combined Fund. For all other individuals, the service retirement allowance is charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member enrolled on or after February 1, 1996.

Eligibility for Ordinary Disability Retirement Allowance

A member who the medical council certifies is mentally or physically incapacitated for further performance of duty that such incapacity is likely to be permanent and that such member should be retired, is eligible for the ordinary disability retirement allowance. The ordinary disability allowance is not payable if the member qualifies for the duty disability allowance.

Amount of Ordinary Disability Retirement Allowance

Imputed service credit and seasonal service credit are not used in any part of the calculation of the Ordinary Disability Retirement Allowance. The "service retirement allowance" referred to below is calculated based on creditable service only.

- a) For General Employees, 90% of the service retirement allowance based on creditable service to date of disability retirement, but no less than 25% of final average salary, provided such amount does not exceed 90% of the retirement allowance payable had the member continued in service to the minimum service retirement age.
- b) For policemen and firemen hired after January 1, 1971, who have 5 years of service, 25% of final average salary plus 2% thereof for each year of creditable service in excess of 5 years up to a maximum of 50% of final average salary.
- c) For policemen and firemen hired before January 1, 1971, the greater of the benefit described in (a), or the benefit described in (b).
- d) The benefit is payable for life while the member remains disabled, except that for General Employees with less than 10 years of qualifying time, the duration is limited to one-fourth (1/4) of the period of the service accrued to the date of disability.
- e) Members receiving benefits for life may elect reduced benefits under an optional form of payment in order to provide a death benefit to a designated beneficiary.

Funds Charged with Ordinary Disability Retirement Allowance

Ordinary disability retirement allowance payments are charged to the Combined Fund if the eligible individual is a participant in the Combined Fund. Otherwise, the allowance is charged to (i) the Retirement Fund, if the member's enrollment date is before February 1, 1996, and (ii) the Combined Retirement and Disability Fund, if the member's enrollment date is on or after February 1, 1996.

Eligibility for Duty Disability Retirement Allowance

If a member becomes permanently and totally incapacitated for duty as a result of the performance of his duty, and his mental or physical incapacitation is medically certified, such member is eligible for a duty disability retirement allowance. Unless the member is beyond his/her conversion age, in which case the member would be eligible for an extended lifetime Duty Disability benefit. The medical certification is made by the Medical Council for General Employees, for members of the MPA enrolled after June 28, 2005, and for members of the MPFFA enrolled after December 13, 2005 with disability based on a mental injury. For all other members, the medical certification is made by the Medical Panel, except as indicated below. There are certain diseases that are considered presumptive for purposes of duty disabilities.

All new duty disability applications are reviewed by the Medical Council effective June 19, 2016 for MPA members, effective January 1, 2016 for MPSO members, and effective July 29, 2016 for MPFFA members.

Effective July 14, 2015, a new state law was enacted related to duty disability benefits for mental injuries (section 62.624 Wis. Stat.). The ERS may only provide a duty disability benefit for a mental injury if the following criteria are met:

- The mental injury resulted from a situation of greater dimensions than the day-to-day mental stresses and tension and post-traumatic stress that all similarly situated employees must experience as part of the employment, **and**
- The employer certifies that the mental injury is a duty-related injury

Only if a duty-related mental injury has occurred, can the duty disability application be forwarded to the Medical Panel or Medical Council for the examination and requisite certification.

Amount of Duty Disability Related Benefits

Imputed service credit and seasonal service credit are not used when calculating a duty disability retirement allowance. Imputed service credit or seasonal service credit is used when calculating the conversion service retirement allowance referred to in paragraphs (a) - (c) below. Eligibility for imputed military service credit depends upon the date of the conversion, not upon the date of the duty disability retirement.

- a) For General Employees, the duty disability retirement allowance equals 75% of the member's final average salary. Members receive the allowance, while disability continues, until the later of age 65, or for a period of 5 years, at which time they convert to a service retirement allowance. General Employees receiving duty disability benefits may elect reduced benefits under an optional form of payment in order to provide a death benefit to a designated beneficiary.
- b) For firemen and policemen, the duty disability retirement allowance is 75% of the current annual salary for the position held by the member at retirement, plus \$40 per month for each child younger than age 18 (up to a maximum of 20% of the member's salary). In certain cases of extreme disability, when approved by a panel of physicians, the disability allowance will be 90% of such salary. Duty disability benefits paid to firemen on account of heart and lung disease are at the 75% level. In the event of the death of a policeman or fireman receiving a 75% or 90% disability allowance, 70% or 75%, respectively, of the amount of the member's allowance shall be paid to the member's spouse during her lifetime.

The 90% duty disability allowances are payable for life. For policemen enrolled on or after January 1, 1990, and firemen enrolled on or after December 17, 1989, the 75% duty disability allowances are payable until the earlier of attainment of age 57, or completion of 25 years of service and attainment of age 52, at which time the member must either convert to a service retirement allowance or irrevocably elect to receive a recalculated duty disability allowance, referred to as an extended life duty disability allowance, as described in (c), below. Different conversion age requirements apply to policemen enrolled prior to January 1, 1990, and firemen enrolled prior to December 17, 1989, as discussed in (d), below. A fireman or policeman who becomes duty disabled on or after his conversion age may choose between a service retirement or extended life duty disability retirement.

- c) The extended life duty disability allowance referred to in (b), above, equals the lesser of the conversion service retirement allowance, or 75% of the current annual salary, provided further that the benefit will not be less than 57% of current annual salary for a fireman, or 60% of current annual salary for a policeman. "Current annual salary" here refers to the salary at the conversion age, for the position held by the member at the time of injury. The extended life duty disability allowance is payable for life and, unlike the duty disability allowance, is a fixed amount that does not change after the conversion age, notwithstanding any cost of living adjustments. Firemen or policemen receiving extended life duty disability benefits may elect reduced benefits under an optional form of payment in order to provide a death benefit to a designated beneficiary. Their spouses are not eligible to receive the 70% benefit payable to surviving spouses of firemen and policemen who die while in receipt of the 75% duty disability benefit.
- d) For policemen enrolled prior to January 1, 1990, and firemen enrolled prior to December 17, 1989, the conversion age determination depends upon the member's enrollment date and whether or not the member signed the DeBraska II release form.

Under Charter Ordinance 980130 Substitute 2 (DeBraska I), duty disabled firemen and policemen who retired on duty disability before October 17, 1992, have a conversion age equal to the greater of the conversion age in effect when they were enrolled, or the conversion age in effect at the time of their disability retirement.

Under Charter Ordinance 000789 (DeBraska II), duty disabled firemen and policemen who signed the DeBraska II release form are subject to the following conversion requirements: (i) members retired on duty disability prior to February 8, 1972, will receive duty disability benefits for life; (ii) members enrolled prior to February 8, 1972, who are either policemen who retired on duty disability on or after August 1,

1985, or firemen who retired on duty disability on or after March 1, 1984, will have a conversion age of 63; (iii) members enrolled on or after February 8, 1972, who retired on duty disability on or after October 17, 1992, will not be required to convert to service retirement prior to the conversion age requirements that were in effect when they enrolled; and (iv) for all other members who signed the DeBraska II release form, there is no difference between the conversion requirements of Charter Ordinance 980130 Substitute 2, and Charter Ordinance 000789. In general, only members who were duty disabled prior to January 1, 2001 were given the opportunity to sign the DeBraska II release form.

Under the Charter Ordinance (which reflects the Rehrauer decision) firemen and policemen who retire (or previously retired) on duty disability and who did not sign the DeBraska II release form will convert at the highest conversion age agreed upon during their employment (Section 36-05-3). Members who enrolled prior to February 8, 1972, who are either policemen who retired on duty disability on or after November 1, 1976, or firemen who retired on duty disability on or after October 1, 1977, will receive duty disability for life if they did not sign the DeBraska II release form, and will have a conversion age of 63 if they did sign the DeBraska II release form.

Funds Charged with Duty Disability Related Benefits

- a) For participants in the Combined Fund, duty disability benefits paid to members, benefits paid to survivors of members who die while duty disabled, child allotment payments, conversion service retirement benefits, and extended life duty disability benefits are paid from the Combined Fund.
- b) For General Employees who do not participate in the Combined Fund, duty disability benefits, and survivor benefits paid to beneficiaries of General Employees who elect an optional form of payment and die while disabled, are paid from (i) the General Employees Duty Disability Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member's enrollment date is on or after February 1, 1996.
- c) For members who do not participate in the Combined Fund, benefits paid after conversion to either a service retirement allowance or an extended life disability benefit are charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member's enrollment date is on or after February 1, 1996.

Ordinary Death Benefit

- a) In the event of death of a member while in service, a death benefit equal to the sum of the member's accumulated contributions, plus if the member has one or more years of active service, one-half his final average salary is payable to the designated beneficiary. Optional forms of payment of such benefit to the beneficiary are provided. If the member had elected a protective survivorship option – and duty death benefits are not payable – such option will become effective and the ordinary death benefit will not be payable. If a duty death benefit is payable the ordinary death benefit will not be paid.
- b) Unless the member elects an optional death benefit, the death benefit subsequent to retirement is the amount remaining, is any, of the member's contributions with interest to retirement less the sum of the allowance payments made prior to the member's death.

Funds Charged with Ordinary Death Benefits

Ordinary death benefits paid on behalf of a participant in the Combined Fund are charged to the Combined Fund. Otherwise, ordinary death benefits are charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member's enrollment date is on or after February 1, 1996.

Protective Survivorship Option

Firemen hired before July 30, 2016, may elect a Protective Survivorship Option (PSO) during the 6 months that precede the earlier of attainment of age 49 and completion of 22 years of qualifying time as a fireman or policeman, or age 52 and 25 years of qualifying time as a fireman or policeman, or age 57. Policemen hired before December 20, 2015, may elect a Protective Survivorship Option (PSO) during the 6 months that precede the earlier of attainment of age 57, or completion of 25 years of qualifying time as a policeman or fireman. Firemen hired on/after July 30, 2016, may elect a Protective Survivorship Option (PSO) during the 6 months that precede the earlier of attainment of age 52 and completion of 25 years of qualifying time as a fireman, or age 57. Policemen hired on/after December 20, 2015, may elect a Protective Survivorship Option (PSO) during the 6 months that precede the earlier of attainment of age 57, or age 50 and completion of 25 years of qualifying time as a policeman. Firemen and policemen who fail to elect a PSO during the eligible period are deemed to have elected an Option 2 PSO with the spouse as the named beneficiary.

General Employees who enrolled prior to January 1, 2014, may elect a PSO during the 6 months that precede the earlier of attainment of age 60 or completion of 30 years of qualifying time and attainment of age 55. General Employees who enrolled on or after January 1, 2014, may elect a PSO during the 6 months that precede the earlier of attainment of age 65, or completion of 30 years of qualifying time and attainment of age 60.

Firemen and policemen are allowed to reselect a PSO if they marry, or divorce, and to select a different option and/or beneficiary at retirement, if they wish. As of June 5, 2012, General Employees may also reselect a PSO if they marry, or divorce, or select a different option and/or beneficiary at retirement.

The PSO may be canceled if the joint annuitant predeceases the member before retirement; or if the member is divorced from the joint annuitant before retirement.

Under a PSO, if a member eligible to retire on a service retirement allowance dies prior to retirement, benefits begin to the named beneficiary just as if the member retired under such option immediately prior to his or her death, except that imputed service credit arising from the dissolution of the Firemen and Policemen's Survivorship Fund will not be used in the calculation of the PSO benefit. If a fireman eligible for PSO coverage dies prior to age 49 (or age 52 if hired on/after July 30, 2016), benefits for the named beneficiary will be deferred until the date the fireman would have attained age 49 (or age 52). Imputed military service, imputed fire and police service, and seasonal service credit may be used in the calculation of the deferred PSO benefit.

In all cases where the requirements are met for both a PSO benefit and a duty death benefit, the duty death benefit will be payable in lieu of the PSO.

Funds Charged with PSO Benefits

PSO benefits for participants in the Combined Fund are charged to the Combined Fund. Benefits for individuals who do not participate in the Combined Fund are charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member's enrollment date is on or after February 1, 1996.

Duty Death Benefits

In the event the member's death occurs in the performance of his duty, a lump sum payment equal to the member's accumulated contributions, plus an annuity of 60% of such deceased member's final average salary will be paid to one of the following (payable in this order):

- The member's surviving spouse
- The member's children until their 21st birthday
- The member's dependent parents
- Death of a fireman that is due to heart or lung disease is considered a duty death.

Funds Charged with Duty Death Benefits

Benefits payable to participants in the Combined Fund are charged to the Combined Fund. Heart & Lung duty death benefits payable to individuals who are not participants in the Combined Fund are charged to the Heart & Lung Fund. Duty death benefits (other than Heart & Lung) payable to individuals who are not participants in the Combined Fund are charged to (i) the Retirement Fund for members whose enrollment dates are prior to February 1, 1996; and (ii) the Combined Retirement and Disability Fund for members whose enrollment dates are on or after February 1, 1996.

Member Contributions

Member contribution rates are the following percentages of annual salary:

General Employees	5.5% (tier 1 – enrolled prior to January 1, 2014) 4.0% (tier 2 – enrolled on or after January 1, 2014)
Firemen and Policemen –	7.0%
Elected Officials	7.0% (tier 1 – enrolled prior to January 1, 2014 and elected to an office prior to January 1, 2014; if enrolled prior to January 1, 2014, and elected or the first time to an office on or after January 1, 2014, and employee was paying contributions prior to being elected, employee pays contributions at the rate they were paying prior to becoming an elected official; if enrolled prior to January 1, 2014, and elected or the first time to an office on or after January 1, 2014, and employer was picking up contributions on behalf of the employee prior to being elected, employer pays 7.0%) 4.0% (tier 2 – enrolled on or after January 1, 2014)

Under state law, per 2011 Wisconsin Act 10, participating employers are no longer permitted to make contributions on the member's behalf (with the exception of contractually agreed upon arrangements).

Member contributions made for or by participants in the Combined Fund are credited to the Combined Fund. Member contributions made for or by individuals who are not participants in the Combined Fund are credited to (i) the Retirement Fund for members whose enrollment dates are prior to February 1, 1996; and (ii) the Combined Retirement and Disability Fund for members whose enrollment dates are on or after February 1, 1996.

Pension Escalators

Several different pension escalators are paid by the ERS as listed and described under section 36-05-1(h). They are as follows:

- Fire and Police \$50 Escalator

Firemen in Local 215 who retired under a service retirement allowance between March 1, 1990, and December 31, 1992; members of the Milwaukee Police Association (MPA) who retired under a service retirement allowance between January 1, 1990, and December 31, 1992; members of the Milwaukee Police Supervisors Organization who retired under a service retirement allowance between January 1, 1991, and December 31, 1992; and firemen in Local 215 or members of the MPA who elect a deferred retirement allowance after separating from service between January 1, 1993, and December 31, 1994, with 25 years of service; are eligible for a pension escalator which increases their allowance by \$50 per month on the 4th, 7th, and 10th anniversary of retirement.

Members who both retired on duty disability and converted from duty disability to service retirement during the eligibility period are eligible for the escalators on the 4th, 7th, and 10th anniversaries of their conversion dates.

The surviving spouses of eligible retirees, or of members who died during the eligibility period, are eligible provided that the member elected an optional benefit at retirement – or elected a protective survivorship option (PSO) prior to retirement – with the spouse as beneficiary. The member's surviving spouse receives increases on the member's 4th, 7th, and 10th anniversary of retirement (or spouse's retirement date in the

case of a PSO) with the amount of the escalator adjusted to reflect the option elected by the member. Fire and Police \$50 escalators paid to participants in the Combined Fund are charged to the Combined Fund.

Fire and Police \$50 escalators paid to individuals who are not participants in the Combined Fund are charged to the Retirement Fund.

- January 1996 Catch-up COLA for pre-October 1987 Retirees

Eligible Group

- a) General Employees that attained the minimum service retirement age and retired with a service retirement allowance prior to October 1, 1987, or who retired on a duty disability allowance and converted to a service retirement allowance prior to October 1, 1987.
- b) Firemen and policemen who retired prior to October 1, 1987, who became eligible to retire on service retirement at age 57, or after attaining age 52 and completing 25 years of service. Also, firemen and policemen who retired on a duty disability allowance and converted to a service retirement allowance prior to October 1, 1987.
- c) Surviving spouses of eligible retirees, or of members who elected a PSO and died prior to October 1 1987, after naming their spouse as the designated beneficiary under Option 2, Option 3, or Option 4 with a percentage to the beneficiary.

Timing and Amount of Increase

The catch-up COLA was a permanent increase in the ERS monthly benefit which was granted effective January 1, 1996. The increase was an amount equal to (i) the total ERS benefit in payment, multiplied by the greater of (ii) the total percentage change in the cost of living for each full calendar month between the 8th anniversary of service retirement and October 1, 1995, and (iii) the total percentage change required to bring the member's allowance to 60% of its full inflation adjusted value considering inflation for the period from retirement to October 1, 1995. The percentage change in the cost of living was measured by the increase in the CPI-U, U.S. Cities, as reported by the U.S. Department of Labor, Bureau of Labor Statistics.

When the catch-up COLA was calculated, the factor was not applied to supplemental, pass through benefits, which are paid by the ERS but are not a liability of the ERS. These pass-through benefits, which appear on the pension payroll data supplied to the actuary, are part of an old guaranteed minimum program. The ERS is a paying agent for these benefits, but is reimbursed by the City for all such payments.

Catch-up COLA amounts paid to participants in the Combined Fund are charged to the Combined Fund. Catch-up COLA amounts paid to individuals who are not participants in the Combined Fund are charged to the Retirement Fund.

- 2% Escalator for pre-1993 Retirees

Eligible Group

- a) General employees that attained the minimum service retirement age and retired with a service retirement allowance prior to January 1, 1993, or who retired on a duty disability allowance and converted to a service retirement allowance prior to January 1, 1993.
- b) Firemen and policemen who retired prior to January 1, 1993, who became eligible to retire on service retirement at age 57, or after attaining age 52 and completing 25 years of service. Also, firemen and policemen who retired on a duty disability allowance and converted to a service retirement allowance prior to January 1, 1993.
- c) Surviving spouses of eligible members who elected Option 3 with the spouse as the beneficiary, or of members who died prior to January 1, 1993 after electing an Option 3 PSO with the spouse as the beneficiary.

Timing and Amount of Increase:

The first increase occurs with the later of the January 1996 installment or the installment next following the 8th anniversary of the member's service retirement date (or the 8th anniversary of the surviving spouse's retirement date in the case of a PSO). Thereafter, increases occur annually on the anniversary of the first increase.

The first increase is 2% of the total ERS benefit in payment. That is, the monthly benefit to which the increase is applied includes \$50 fire and police escalators, and the January 1996 catch-up COLA amount, if any, but it excludes supplemental pass through payments, if any. Increases after the first are also 2%, and are compounded -- that is, they are applied to the total ERS benefit in payment, including all prior increases, and again, excluding any supplemental pass through payments. The benefit initially payable to an eligible spouse upon the member's death includes 50% of any increases in payment at the member's death.

2% escalators paid to participants in the Combined Fund are charged to the Combined Fund. 2% escalators paid to individuals who are not participants in the Combined Fund are charged to the Retirement Fund.

- CPI Escalator for post-1992 Fire and Police Retirees who don't Participate in the Combined Fund and Pre-2000 CPI Escalator for post-1992 Fire and Police Retirees who do Participate in the Combined Fund

Eligible Group:

- a) Firemen and policemen in active service on or after January 1, 1993, who become eligible to retire on service retirement at age 57 or after attaining age 52 and completing 25 years of service.
- b) Firemen and policemen who retire on either a 75% Fire & Police duty disability benefit or a Heart & Lung duty disability benefit (i) between January 1, 1993, and December 31, 1994, and thereafter convert to service retirement; or (ii) on or after January 1, 1995, and who are eligible to elect between service retirement and extended life duty disability benefits at their conversion age.
- c) Police in active service on or after January 1, 1995, who separate with 25 years of service and elect a deferred retirement allowance.
- d) Surviving spouses of eligible members who elect Option 2 or 3, or who elect Option 4 with a percentage to the spouse, or who elect a PSO with a percentage to the spouse.

Timing and Amount of Increase:

For members who retired on service retirement between January 1, 1993, and December 31, 1994; or who retired on duty disability between January 1, 1993, and December 31, 1994, and later convert to service retirement; and for eligible surviving spouses of members who died prior to retirement between January 1, 1993, and December 31, 1994, with PSO coverage in effect; the first increase occurs for March of the year following the first full calendar year of service retirement. For all others, the first increase occurs one full year after the member's service retirement date. Thereafter, increases occur annually on the anniversary of the first increase.

The monthly benefit is increased by an amount equal to (i) the total allowance for the preceding December (including all prior increases), multiplied by the lesser of (ii) 3%, and (iii) the increase in the CPI-U, U.S. Cities Average, for the calendar year preceding the increase. The benefit initially payable to an eligible spouse upon the member's death includes a proportionate share of any increases in payment at the member's death, based on the option elected.

Benefits payable to participants in the Combined Fund are charged to the Combined Fund. For individuals who are not participants in the Combined Fund: (i) benefits are charged to the Retirement Fund for members whose enrollment dates are prior to February 1, 1996; and (ii) benefits are charged to the Combined Retirement and Disability Fund for members whose enrollment dates are on or after February 1, 1996.

- Post-1999 CPI Escalator for post-1992 Fire and Police Retirees Who Participate in the Combined Fund

Eligible Group:

The eligible group is restricted to individuals who were firemen and policemen who retired on duty disability between October 17, 1992, and December 31, 1992; or who were in active service on or after January 1, 1993, who either retire as firemen or policemen, or who die in active service as firemen or policemen; and their eligible surviving spouses. The types of benefits that receive the CPI escalator include:

- a) The service retirement allowance and ordinary disability retirement allowance.
- b) Benefits paid to members after the duty disability conversion age: the conversion service retirement allowance or the extended life duty disability retirement allowance.
- c) Benefits paid to members after separation from service: the deferred retirement allowance, early retirement allowance, involuntary separation allowance, or the ERS allowance paid under the County transfer or State reciprocity provisions.

- d) The spouse survivor allowance paid to the surviving spouse of an eligible member who elects Option 2 or 3, or who elects Option 4 with a percentage to the spouse, or who elects a PSO with a percentage to the spouse.
- e) The fire and police or heart & lung duty disability surviving spouse allowance.
- f) The duty death surviving spouse allowance.

Timing and Amount of Increases that occur after 1999:

- a) The first post-1999 increase occurs the later of March 2000 and March of the year following the first full calendar year of retirement for: members who retired on service retirement or ordinary disability between January 1, 1993, and December 31, 1994; or who convert to service retirement after a period of duty disability which commenced between January 1, 1993, and December 31, 1994; or who separated from service between January 1, 1993, and December 31, 1994, and subsequently retire on a deferred, early, involuntary separation, or County transfer/ State reciprocity allowance; eligible spouse survivors of such members, including PSO spouse survivors when the member died between January 1, 1993, and December 31, 1994; duty death surviving spouses of members who died between January 1, 1993, and December 31, 1994; and duty disability surviving spouses where both the member's duty disability retirement date and duty disabled death date were between January 1, 1993, and December 31, 1994.
- b) The first post-1999 increase occurs the later of the year 2000 anniversary or the first anniversary of the member's date of death for: duty disability surviving spouses where the member's duty disability death date is on or after January 1, 1995.
- c) For all others, the first post-1999 increase occurs the later of the year 2000 anniversary or the first anniversary of the member's retirement or pre-retirement death. (Note: this group includes members who retired on duty disability between October 17, 1992, and December 31, 1994, who subsequently elect an extended life duty disability retirement allowance, and members who retired on duty disability between October 17, 1992, and December 31, 1992, who subsequently convert to service retirement.)

Thereafter, increases occur annually on the anniversary of the first post-1999 increase.

The monthly benefit is increased by an amount equal to (i) the total allowance for the preceding December (including all prior increases), multiplied by the lesser of (ii) 3%, and (iii) the increase in the CPI-U, U.S. Cities Average, for the calendar year preceding the increase. If the member retired on duty disability between October 17, 1992, and December 31, 1992, and subsequently converts to service retirement, then the 2nd, 3rd, and 4th increases will not be less than 1.5%, and the 5th and subsequent increases will not be less than 2%. The benefit initially payable to an eligible spouse upon the member's death includes a proportionate share of any increases in payment at the member's death, based on the option elected.

The CPI escalator is charged to the Combined Fund.

- 2% Guarantee for Fire and Police CPI Escalator for Participants in Combined Fund
The eligible group is restricted to firemen and policemen who retire on service retirement, their spouse survivors, and PSO spouse survivors. In addition, firemen members of Local 215 and policemen members of the MPA must have been in active service on or after January 1, 1998; policemen members of the MPSP must have been in active service on or after January 1, 1999; and non-represented firemen and policemen must have been in active service on or after January 1, 2000. The benefit is a guarantee that the CPI Escalator will not be less than 2% per annum.
- 2% Escalator for post-1992 General Employee Retirees who do Not Participate in Combined Fund
Eligible Group:
 - a) General Employees who retire on a service retirement allowance on or after January 1, 1993 who have either (i) attained age 60, or (ii) completed 30 years of service and attained age 55.
 - b) General Employees receiving a duty disability retirement allowance who convert to service retirement on or after January 1, 1993.
 - c) Spouses of eligible members who either elect Option 3 at retirement with the spouse as beneficiary, or who die after electing an Option 3 PSO with the spouse as beneficiary.

Timing and Amount of Increase:

The first increase occurs with the installment next following the 8th anniversary of the member's service retirement or conversion to service retirement date (or the 8th anniversary of the surviving spouse's retirement date in the case of a PSO). Thereafter, increases occur annually on the anniversary of the first increase.

Each increase is 2%, and increases after the first are compounded -- that is, they are applied to the total benefit in payment, including all prior increases. The benefit initially payable to an eligible spouse upon the member's death includes 50% of any increases in payment at the member's death.

For members whose enrollment dates are prior to February 1, 1996, the 2% escalator for post-1992 General Employee retirees is paid from the Retirement Fund. For members whose enrollment dates are on or after February 1, 1996, the 2% escalator for post-1992 General Employee retirees is paid from the Combined Retirement and Disability Fund.

- Post-1999 1.5% / 2% Escalator for General Employee Retirees and for Pre-1993 Fire and Police Retirees Who Participate in the Combined Fund

Eligible Group:

The eligible group includes (i) pre-1993 retirees and surviving spouses who are not eligible for either the 2% Escalator for pre-1993 retirees, or the Post-1999 CPI Escalator for post-1992 fire and police retirees; and (ii) post-1992 General Employee retirees and their surviving spouses. The types of benefits that receive the 1.5%/2% escalator include:

- a) The service retirement allowance and ordinary disability retirement allowance for all members, and the duty disability retirement allowance for General Employees.
- b) Benefits paid to members after the duty disability conversion age: the conversion service retirement allowance for all members or the extended life duty disability retirement allowance for fire and police.
- c) Benefits paid to members after separation from service: the deferred retirement allowance, early retirement allowance, involuntary separation allowance, or the ERS allowance paid under the County transfer or State reciprocity provisions.
- d) The spouse survivor allowance paid to the surviving spouse of an eligible member who elects Option 2 or 3, or who elects Option 4 with a percentage to the spouse, or who elects a PSO with a percentage to the spouse.
- e) The fire and police or heart & lung duty disability surviving spouse allowance.
- f) The duty death surviving spouse allowance.

Timing and Amount of Increases that occur after 1999:

- a) The first post-1999 increase occurs for January 2000 for eligible Option 2 and 4 spouse survivors of members retired on a service retirement allowance or a conversion service retirement allowance -- and for eligible Option 2 and 4 PSO spouse survivors -- when the member's date of retirement or pre-retirement death was prior to January 1988.
- b) The first post-1999 increase occurs the later of the year 2000 anniversary or the 2nd anniversary of the member's date of death for: duty disability surviving spouses of firemen and policemen.
- c) For all others, the first post-1999 increase occurs the later of the year 2000 anniversary or the 2nd anniversary of the member's retirement or pre-retirement death.

Thereafter, increases occur annually on the anniversary of the first increase.

All increases for the group described in paragraph (a) are 2% increases. For paragraphs (b) and (c), an increase which takes effect on the 2nd, 3rd, or 4th anniversary is a 1.5% increase. An increase which takes effect on the 5th or subsequent anniversary is a 2% increase. Increases after the first one are compounded -- that is, they are applied to the total benefit in payment, including all prior increases. The benefit initially payable to an eligible spouse upon the member's death includes the spouse's proportionate share of any increases in payment at the member's death, based on the option elected.

Tier 2 Employees receive an increase of 2% on the fifth anniversary of their retirement and on each anniversary, that follows, but only for service retirement.

Benefits are charged to the Combined Fund.

Fire and Police Survivorship Benefits Prior to the Global Pension Settlement

The survivors of firemen or policemen who die in active service or while in receipt of a disability allowance may be entitled to a survivorship benefit. The survivorship benefit is payable to the spouse of the deceased member provided the spouse has one or more eligible children in her care. Eligible children include unmarried children who are either under the age of 18, or are over age 18, but who suffer from a disability which commenced before the age of 18. The amount of the survivorship benefit for a death occurring in 2000 is \$600 monthly for the spouse and one child or for two or more eligible children. If there is no surviving widow and only one child, the benefit is \$300. Upon attainment of age 57, \$300 is payable to the spouse for her lifetime. Benefits payable to a spouse cease on remarriage and benefits payable in respect of children cease on attainment of age 18 (unless disabled prior to age 18) or marriage. For member deaths that occurred prior to 2000 the monthly amount payable depends upon the plan provisions in effect at the member's death.

Fire and Police Survivorship Benefits for Survivors Participating in the Combined Fund

Survivors of firemen or policemen who died prior to 2000 while in active service or while retired on disability (and contributing to the Fire and Police Survivorship Fund) may be entitled to a survivorship benefit. The survivorship benefit is payable to the spouse of the deceased member provided the spouse has one or more eligible children in her care. For participants in the Combined Fund, the amount of the survivorship benefit for a death occurring prior to 2000 is \$600 monthly for the spouse and one child under age 18, or for two or more children under age 18. If there is no surviving widow and only one child, the benefit is \$300. The monthly amount payable to a disabled child over the age of 18 depends upon the plan provisions in effect at the member's death. Upon attainment of age 57, \$300 is payable to the spouse for her lifetime. Benefits payable to a spouse cease on remarriage and benefits payable in respect of children cease on attainment of age 18 (unless disability commenced prior to age 18) or marriage.

Survivorship Benefits for Participants in the Combined Fund are charged to the Combined Fund.

Separation Benefits

Should a member separate from service, and no other benefit is payable, such a member will possibly be entitled to one of the options outlined below. Additional eligibility information about Separation Benefits is provided under 36-05-6.

- a) If the member has less than four years of creditable service, a refund of member contributions (not paid by the member's employer). Interest on the 4%, 5.5%, or 7% member paid contributions is also payable.
- b) If the member has four years of creditable service, a deferred allowance payable at the minimum service retirement age.
- c) A refund of the member contributions and interest, including contributions paid on the member's behalf, is payable to (i) General Employees after 4 years of creditable service, or (ii) firemen or policemen after 10 years of creditable service.
- d) If the member's service is involuntarily terminated, or the member terminates voluntarily after attaining age 55 and completing 15 years of creditable service, such member may elect to receive a deferred allowance at the minimum service retirement age, or an immediate allowance that is the actuarial equivalent of the deferred allowance.
- e) If the member has 25 years of qualifying time as a fireman or policeman, and is not participating in the Combined Fund, a deferred allowance payable at age 52.
- f) If the member is a fireman with 25 years of qualifying time as a fireman or policeman, had not attained age 49 at the date of separation from service, and is participating in the Combined Fund, a deferred allowance payable at age 52.

Imputed service credit and seasonal service credit are not used when calculating separation benefits.

Funds Charged with Separation Benefits

Benefits paid to participants in the Combined Fund are charged to the Combined Fund. Separation benefits paid to individuals not participating in the Combined Fund are charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Fund if the member's enrollment date is on or after February 1, 1996.

Lump Sum Bonus Payments

Under the Global Pension Settlement, various lump sum bonus payments may be made to eligible individuals participating in the Combined Fund. An individual may be eligible for one or more types of lump sum bonus payments.

Eligibility for Lump Sum Bonus Payments

Only individuals participating in the Combined Fund can become eligible for the following types of lump sum bonus payments. In addition, the following conditions apply to the individual lump sum bonuses.

a) 5% lump sum bonus

Members who are inactive as of January 1, 2000, will become eligible at the time that their deferred retirement allowance commences.

Members in active service as of January 1, 2000, will become eligible when they first retire.

If a member in active service as of January 1, 2000, dies prior to retirement and the member's surviving spouse is eligible for either a surviving spouse duty death benefit (including Heart & Lung duty death) or a PSO spouse survivor benefit then the surviving spouse is eligible for this bonus payment.

Only one 5% lump sum bonus will be paid on account of an individual member. Thus, if a member receiving a duty disability retirement allowance receives a 5% lump sum bonus on account of the duty disability benefit, then the member will not be eligible for an additional 5% lump sum bonus at the time of conversion.

b) 8.6% lump sum bonus:

A fireman or policeman in active service as of January 1, 2000, who (i) retires as a fireman or policeman on a service retirement allowance; or (ii) converts to service retirement or elects an extended life duty disability retirement allowance after retiring as a fireman or policeman on duty disability; (iii) attains age 63 while in receipt of an ordinary disability retirement allowance or a lifetime Fire & Police or Heart & Lung duty disability retirement allowance, is eligible for this bonus so long as the member did not receive 2 years of imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund; (iv) or retires as a fireman or policeman on an extended life duty disability.

If a fireman or policeman in active service as of January 1, 2000, dies prior to retirement and the member's surviving spouse is eligible for either a surviving spouse duty death benefit (including Heart & Lung duty death) or a PSO spouse survivor benefit then the surviving spouse is eligible for this bonus payment.

A fireman or policeman retired on disability as of January 1, 2000, who is also an active member of the Firemen and Policemen's Survivorship Fund as of January 1, 2000 - under age 57 at January 1, 2000, and made all required contributions to the Survivorship Fund – is eligible for this bonus if he (i) converts to service retirement or elects an extended life duty disability retirement allowance; or (ii) is ineligible to convert to service retirement and attains age 63 while in receipt of the disability retirement allowance; provided that he (iii) did not receive 2 years of imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund.

Amount of Lump Sum Bonus Payments

Age factors are used in the 5% lump sum bonus and the 8.6% lump sum bonus calculations. The age factors for these bonus payments are contained in s. 36-05-11-a.

a) 5% lump sum bonus:

For members who are either inactive or active as of January 1, 2000, who retire in the future, the bonus payment equals 5% times their initial annual retirement allowance times a factor based on attained age on the retirement date. The retirement allowance used in the bonus calculation is to be reduced for early retirement, if applicable, but is not to be reduced for any optional election the member might have made under s. 36-05-7.

If a member in active service as of January 1, 2000 dies prior to retirement and the member's surviving spouse is eligible for this bonus payment, then the bonus will equal 5% times the spouse's initial annual benefit times a factor based on the spouse's attained age when the benefit commences.

b) 8.6% lump sum bonus

In the explanation that follows, whenever an annual allowance is used in calculating a bonus due to a member, the allowance used is the allowance that would be paid if the member did not elect an option under s. 36-05-7.

For members who retire on service retirement: 8.6% times the annual service retirement allowance times a factor based on attained age at retirement.

For surviving spouses who receive either a PSO benefit or a duty death benefit: 8.6% times the initial annual allowance payable to the spouse times a factor based on the spouse's attained age when the benefit commences.

For a member who is retired on duty disability as of January 1, 2000 - or who retires on duty disability thereafter - and who is eligible to convert to service retirement: 8.6% times the annual conversion service retirement allowance earned as of the conversion age times a factor based on attained age at conversion.

For a member who is retired on disability as of January 1, 2000 – or who retired on disability thereafter – who is ineligible to convert to service retirement, and who is age 63 or younger at the later of 1/1/2000 or the disability retirement date: 8.6% times the “hypothetical” annual conversion service retirement allowance earned at age 63 times the attained age factor for age 63. The “hypothetical” allowance is calculated as if the member were eligible to convert at age 63.

For a member who retires on disability after January 1, 2000, who is older than age 63 at the disability retirement date: 8.6% times the annual disability allowance payable when the allowance commences times a factor based on the member's attained age at retirement.

The 5% lump sum bonus and the 8.6% lump sum bonus are paid from the Combined Fund.

Benefits Not Valued

Best practice supports use of a three to five-year amortization period for amortization of liabilities generated by early retirement incentives such as the Bonus Year. While it is not clear whether a member retired due to an incentive, best practice would indicate that the additional liabilities generated by the Bonus Year should be amortized over a shorter period more in line with the period of payroll saving anticipated to be generated by the window. We recommend that the Bonus Year liabilities be isolated and amortized over a period not to exceed five years.

Exhibit 1 Age/Service Distributions

**Active Membership – General City Employees
Number and Average Annual Salary
As of December 31, 2017**

Age	Years of Credited Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	35 \$36,470									35 \$36,470
25 to 29	171 \$45,682	23 \$47,944								194 \$45,950
30 to 34	221 \$47,819	80 \$54,578	27 \$49,067							328 \$49,570
35 to 39	204 \$48,727	85 \$56,344	62 \$62,415	28 \$54,737	1 \$37,915					380 \$53,079
40 to 44	140 \$46,918	72 \$54,152	59 \$61,495	66 \$56,202	17 \$55,783	1 \$54,677				355 \$52,980
45 to 49	142 \$44,561	95 \$54,444	78 \$58,966	109 \$58,940	81 \$63,181	20 \$58,786	3 \$44,040			528 \$54,828
50 to 54	100 \$46,419	62 \$49,226	51 \$50,777	92 \$55,183	91 \$58,792	94 \$63,833	33 \$62,659	12 \$58,500		535 \$55,104
55 to 59	87 \$46,014	62 \$51,938	53 \$56,802	67 \$61,783	91 \$63,264	117 \$65,809	59 \$72,373	31 \$63,956	2 \$81,775	569 \$60,187
60 to 64	42 \$48,427	35 \$46,278	32 \$57,720	34 \$52,374	34 \$60,787	36 \$68,145	40 \$68,431	15 \$75,223	8 \$60,721	276 \$58,525
Over 64	9 \$45,830	22 \$55,001	21 \$57,218	10 \$57,601	13 \$60,529	11 \$62,140	6 \$85,721	4 \$72,859	13 \$78,423	109 \$61,429
Total	1,151 \$46,554	536 \$53,043	383 \$57,626	406 \$57,240	328 \$61,173	279 \$64,757	141 \$68,947	62 \$66,200	23 \$72,558	3,309 \$54,685

**Active Membership – Water Department
Number and Average Annual Salary
As of December 31, 2017**

Age	Years of Credited Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	3 \$40,594									3 \$40,594
25 to 29	13 \$45,951	3 \$53,280								16 \$47,325
30 to 34	21 \$46,000	6 \$54,602	1 \$54,664							28 \$48,153
35 to 39	21 \$43,440	6 \$57,378	6 \$60,790	2 \$70,824	1 \$73,119					36 \$51,000
40 to 44	16 \$47,538	6 \$52,715	7 \$61,022	7 \$67,941	1 \$92,826					37 \$56,013
45 to 49	10 \$45,188	10 \$53,494	8 \$57,529	4 \$61,725	5 \$67,677	2 \$63,905				39 \$55,388
50 to 54	10 \$46,155	14 \$49,367	11 \$57,602	7 \$56,836	9 \$62,086	12 \$66,898	6 \$73,142			69 \$57,747
55 to 59	7 \$44,798	9 \$52,212	1 \$59,401	2 \$70,844	8 \$55,657	14 \$61,522	14 \$73,930	1 \$49,191		56 \$60,274
60 to 64	4 \$44,892	1 \$42,826	3 \$59,517	1 \$46,339	1 \$47,299	5 \$74,995	6 \$77,298	1 \$49,136	1 \$94,263	23 \$64,206
Over 64		1 \$40,467		1 \$42,221	3 \$66,814		2 \$90,790	1 \$70,971		8 \$66,960
Total	105 \$45,377	56 \$52,273	37 \$58,875	24 \$62,176	28 \$62,718	33 \$65,662	28 \$75,687	3 \$56,432	1 \$94,263	315 \$56,090

**Active Membership – School Board
Number and Average Annual Salary
As of December 31, 2017**

Age	Years of Credited Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	121 \$25,504									121 \$25,504
25 to 29	384 \$26,141	4 \$28,785								388 \$26,168
30 to 34	353 \$28,054	37 \$36,766	8 \$36,539							398 \$29,034
35 to 39	294 \$30,063	78 \$31,862	25 \$37,732	14 \$42,869						411 \$31,307
40 to 44	262 \$29,536	88 \$28,432	47 \$30,173	29 \$47,159	11 \$44,104	1 \$57,014				438 \$30,978
45 to 49	239 \$27,276	95 \$29,339	93 \$29,933	71 \$32,426	40 \$41,851	9 \$54,675				547 \$30,271
50 to 54	180 \$28,506	107 \$31,355	104 \$26,411	112 \$32,653	91 \$38,655	45 \$48,656	15 \$53,595	2 \$47,704		656 \$32,769
55 to 59	180 \$29,069	81 \$25,957	108 \$22,475	134 \$28,747	98 \$39,428	50 \$43,198	22 \$53,271	13 \$51,280	1 \$31,867	687 \$31,308
60 to 64	110 \$24,588	45 \$23,967	66 \$25,321	82 \$30,741	51 \$35,437	25 \$43,295	12 \$54,368	2 \$36,485	2 \$45,394	395 \$29,572
Over 64	45 \$23,612	22 \$21,807	24 \$22,839	13 \$28,948	7 \$32,301	6 \$28,341	2 \$30,249	1 \$23,517		120 \$24,558
Total	2,168 \$27,792	557 \$29,202	475 \$27,012	455 \$32,256	298 \$38,839	136 \$45,227	51 \$52,722	18 \$47,696	3 \$40,885	4,161 \$30,142

**Active Membership – Milwaukee Technical College
Number and Average Annual Salary
As of December 31, 2017**

None as of December 31, 2017

**Active Membership – Sewerage Commission
Number and Average Annual Salary
As of December 31, 2017**

Age	Years of Credited Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	2 \$63,321									2 \$63,321
25 to 29	17 \$64,297	1 \$78,121								18 \$65,065
30 to 34	12 \$65,222	12 \$75,092	2 \$81,757							26 \$71,049
35 to 39	11 \$62,116	12 \$88,452	4 \$77,288							27 \$76,069
40 to 44	9 \$81,430	9 \$87,316	9 \$85,696	2 \$79,857						29 \$84,472
45 to 49	3 \$65,901	3 \$106,954	8 \$86,373	5 \$106,908	1 \$138,736	1 \$65,796				21 \$92,791
50 to 54	5 \$97,342	3 \$76,495	4 \$82,935	3 \$125,434	3 \$105,495	10 \$82,095	1 \$65,796			29 \$90,602
55 to 59	4 \$70,772	2 \$110,881	6 \$80,929	7 \$119,140	3 \$68,295	9 \$78,528	2 \$80,732	2 \$80,021		35 \$87,358
60 to 64	5 \$90,495	3 \$76,649	1 \$63,866	5 \$114,234	1 \$96,491	2 \$66,775	4 \$83,030	3 \$107,920		24 \$91,807
Over 64	2 \$91,125	1 \$122,448	4 \$76,434	2 \$80,106			1 \$98,337	2 \$147,482		12 \$96,996
Total	70 \$71,725	46 \$85,891	38 \$82,153	24 \$109,830	8 \$94,575	22 \$78,502	8 \$82,214	7 \$111,252		223 \$83,631

**Active Membership – Veolia
Number and Average Annual Salary
As of December 31, 2017**

Age	Years of Credited Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25										
25 to 29										
30 to 34										
35 to 39										
40 to 44										
45 to 49					1 \$68,276					1 \$68,276
50 to 54					1 \$81,864	2 \$81,855				3 \$81,858
55 to 59					4 \$91,076	11 \$77,451	1 \$84,076			16 \$81,272
60 to 64					1 \$95,277	3 \$74,508	4 \$91,080	2 \$82,118		10 \$84,736
Over 64						2 \$82,131				2 \$82,131
Total					7 \$87,103	18 \$77,970	5 \$89,679	2 \$82,118		32 \$82,057

**Active Membership – Wisconsin Center District
Number and Average Annual Salary
As of December 31, 2017**

Age	Years of Credited Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	2 \$36,694									2 \$36,694
25 to 29	4 \$58,717	1 \$41,273								5 \$55,228
30 to 34	2 \$41,257									2 \$41,257
35 to 39	4 \$48,821		2 \$47,284							6 \$48,309
40 to 44	6 \$54,563	2 \$71,095	4 \$44,858	1 \$48,919						13 \$53,686
45 to 49	3 \$26,927	1 \$18,448		1 \$82,000	2 \$65,399					7 \$44,575
50 to 54	4 \$51,751	1 \$20,318	4 \$51,693	2 \$81,668	2 \$48,552	1 \$61,348	1 \$36,718			15 \$52,840
55 to 59	3 \$63,808	2 \$51,939	2 \$62,467		2 \$125,452	1 \$39,190	1 \$48,039	1 \$120,625		12 \$73,250
60 to 64	2 \$10,063	2 \$26,164	2 \$43,514	3 \$101,164	1 \$49,588		1 \$71,389			11 \$53,087
Over 64		2 \$37,871	1 \$14,157		1 \$48,627				1 \$114,330	5 \$50,571
Total	30 \$47,092	11 \$41,289	15 \$47,126	7 \$85,393	8 \$72,128	2 \$50,269	3 \$52,049	1 \$120,625	1 \$114,330	78 \$54,362

**Active Membership – Housing Authority
Number and Average Annual Salary
As of December 31, 2017**

Age	Years of Credited Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	1 \$45,130									1 \$45,130
25 to 29	6 \$50,789									6 \$50,789
30 to 34	6 \$43,965	2 \$36,811	1 \$56,276							9 \$43,743
35 to 39	9 \$38,425	3 \$47,935	3 \$53,894							15 \$43,421
40 to 44	12 \$48,928	3 \$48,458	4 \$53,787	2 \$58,970	1 \$47,114					22 \$50,578
45 to 49	10 \$47,369	4 \$50,825	3 \$61,145	8 \$68,403	1 \$82,774	1 \$66,505				27 \$57,664
50 to 54	4 \$52,233	8 \$65,641	3 \$51,554	4 \$57,063	6 \$85,105	1 \$67,989	3 \$71,999			29 \$65,917
55 to 59	5 \$48,720	3 \$64,148	2 \$66,581	9 \$74,369	5 \$61,302	2 \$82,469	3 \$78,405			29 \$67,076
60 to 64	1 \$32,015	7 \$62,235	4 \$75,209		1 \$53,970	3 \$64,192		1 \$100,774		17 \$65,636
Over 64	1 \$32,089	2 \$51,991	1 \$73,533	2 \$105,245		2 \$99,263				8 \$77,327
Total	55 \$46,126	32 \$56,978	21 \$60,892	25 \$70,929	14 \$71,500	9 \$76,726	6 \$75,202	1 \$100,774		163 \$59,238

**Active Membership – Redevelopment Authority
Number and Average Annual Salary
As of December 31, 2017**

Age	Years of Credited Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25										
25 to 29										
30 to 34										
35 to 39		1 \$53,480	1 \$92,855							2 \$73,167
40 to 44		1 \$54,471		1 \$75,925						2 \$65,198
45 to 49			1 \$127,473							1 \$127,473
50 to 54						1 \$105,117				1 \$105,117
55 to 59			1 \$103,768			1 \$87,593				2 \$95,680
60 to 64										
Over 64										
Total		2 \$53,975	3 \$108,032	1 \$75,925		2 \$96,355				8 \$87,585

**Active Membership – General Employees
Number and Average Annual Salary
As of December 31, 2017**

Age	Years of Credited Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	164 \$28,837									164 \$28,837
25 to 29	595 \$33,747	32 \$46,784								627 \$34,413
30 to 34	615 \$36,692	137 \$51,306	39 \$48,502							791 \$39,806
35 to 39	543 \$38,519	185 \$47,986	103 \$56,660	44 \$51,692	2 \$55,517					877 \$43,346
40 to 44	445 \$37,562	181 \$43,343	130 \$51,072	108 \$55,139	30 \$52,447	2 \$55,845				896 \$43,348
45 to 49	407 \$34,522	208 \$43,447	191 \$46,310	198 \$51,199	131 \$57,639	33 \$58,421	3 \$44,040			1,171 \$44,134
50 to 54	303 \$36,756	195 \$40,375	177 \$37,645	220 \$44,999	203 \$51,392	166 \$61,516	59 \$61,509	14 \$56,957		1,337 \$45,358
55 to 59	286 \$35,900	159 \$39,690	173 \$36,674	219 \$44,003	211 \$53,047	205 \$61,323	102 \$68,684	48 \$62,065	3 \$65,139	1,406 \$47,300
60 to 64	164 \$33,066	93 \$37,193	108 \$38,412	125 \$41,780	90 \$46,852	74 \$60,273	67 \$68,974	24 \$76,634	11 \$60,984	756 \$45,054
Over 64	57 \$29,638	50 \$40,648	51 \$42,022	28 \$48,759	24 \$52,586	21 \$57,923	11 \$77,703	8 \$85,111	14 \$80,988	264 \$46,887
Total	3,579 \$35,645	1,240 \$43,517	972 \$43,736	942 \$47,230	691 \$52,589	501 \$60,877	242 \$67,120	94 \$66,986	28 \$71,431	8,289 \$43,421

**Active Membership – Policemen
Number and Average Annual Salary
As of December 31, 2017**

Age	Years of Credited Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	76 \$61,336									76 \$61,336
25 to 29	130 \$58,130	53 \$85,995	19 \$88,828							202 \$68,328
30 to 34	115 \$65,811	70 \$86,578	97 \$90,679	13 \$90,697						295 \$80,012
35 to 39	42 \$63,624	34 \$83,837	144 \$90,192	71 \$91,586	14 \$94,460					305 \$86,346
40 to 44	16 \$63,625	8 \$85,041	92 \$88,467	115 \$90,461	67 \$95,864	4 \$92,384				302 \$89,512
45 to 49	5 \$61,857	6 \$84,795	34 \$87,909	96 \$89,900	219 \$94,768	33 \$100,158				393 \$92,867
50 to 54	3 \$60,476	1 \$82,998	18 \$88,265	42 \$88,570	93 \$92,604	39 \$97,992	2 \$117,698			198 \$92,133
55 to 59			2 \$86,379	15 \$88,451	27 \$89,801	18 \$90,837	5 \$95,731	1 \$86,623		68 \$90,066
60 to 64			2 \$86,526	2 \$86,099	3 \$87,853	2 \$96,742		1 \$98,733		10 \$90,103
Over 64		1 \$155,751			1 \$87,627	1 \$97,070	1 \$112,602		2 \$105,474	6 \$110,666
Total	387 \$61,932	173 \$86,107	408 \$89,543	354 \$90,209	424 \$94,074	97 \$97,135	8 \$103,331	2 \$92,678	2 \$105,474	1,855 \$85,102

**Active Membership – Firemen
Number and Average Annual Salary
As of December 31, 2017**

Age	Years of Credited Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	62 \$54,649									62 \$54,649
25 to 29	6 \$47,111	6 \$83,239								12 \$65,175
30 to 34	12 \$62,256	44 \$80,270	39 \$88,960	5 \$83,530						100 \$81,660
35 to 39	14 \$60,143	45 \$83,194	15 \$86,869	34 \$92,603	18 \$91,245					126 \$84,759
40 to 44	3 \$63,905	17 \$85,925	18 \$89,945	39 \$90,403	22 \$88,538					99 \$88,333
45 to 49	1 \$62,534	12 \$81,045	8 \$90,161	39 \$90,219	98 \$91,193	10 \$105,320				168 \$90,863
50 to 54		2 \$79,183	3 \$87,786	16 \$90,210	42 \$89,032	34 \$92,770	5 \$95,067			102 \$90,529
55 to 59		1 \$154,200		5 \$90,662	3 \$84,106	12 \$93,910	6 \$103,669	1 \$82,534		28 \$96,117
60 to 64				1 \$93,905		1 \$93,342	1 \$87,486	1 \$114,084		4 \$97,204
Over 64										
Total	98 \$56,267	127 \$82,842	83 \$88,869	139 \$90,654	183 \$90,267	57 \$95,222	12 \$98,736	2 \$98,309		701 \$84,651

Exhibit 2 Detailed Tabulations of the Data

Table 1
The Number and Annual Salaries of Members in Active Service Distributed by Age
as of December 31, 2017

General Employees

Age	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
19			1	\$ 27,059	1	\$ 27,059
20	1	\$ 27,931	1	24,588	2	52,519
21	3	79,292	9	238,974	12	318,266
22	15	471,886	21	601,682	36	1,073,568
23	16	536,373	29	773,668	45	1,310,041
24	19	672,652	49	1,275,224	68	1,947,876
25	30	1,178,166	64	1,830,111	94	3,008,277
26	54	2,022,449	68	1,922,462	122	3,944,911
27	55	2,172,195	87	2,818,267	142	4,990,462
28	58	2,389,142	83	2,691,931	141	5,081,073
29	55	2,238,020	73	2,313,986	128	4,552,006
30	57	2,235,380	91	2,859,084	148	5,094,464
31	79	3,450,333	99	3,681,772	178	7,132,105
32	48	2,239,490	93	3,405,704	141	5,645,194
33	71	3,581,060	97	3,424,127	168	7,005,187
34	71	3,484,349	85	3,125,022	156	6,609,371
35	76	3,803,966	85	3,126,394	161	6,930,360
36	92	4,234,789	99	3,888,187	191	8,122,976
37	71	3,506,948	91	3,385,735	162	6,892,683
38	81	3,832,900	109	4,339,552	190	8,172,452
39	67	3,540,184	106	4,356,036	173	7,896,220
40	92	4,727,354	123	4,891,138	215	9,618,492
41	73	3,343,613	84	2,930,835	157	6,274,448
42	67	3,476,384	97	3,369,178	164	6,845,562
43	89	5,121,995	100	3,460,955	189	8,582,950
44	72	3,834,500	99	3,683,700	171	7,518,200
45	81	4,311,209	101	3,563,310	182	7,874,519
46	106	5,259,375	132	5,207,489	238	10,466,864
47	134	7,362,922	135	4,723,497	269	12,086,419
48	100	5,071,989	138	5,357,894	238	10,429,883
49	120	6,575,385	124	4,247,660	244	10,823,045
50	127	6,714,898	123	4,367,360	250	11,082,258
51	123	6,586,985	126	4,658,873	249	11,245,858
52	125	6,750,558	152	5,486,014	277	12,236,572
53	123	6,676,995	161	6,463,663	284	13,140,658
54	132	7,340,838	145	5,597,599	277	12,938,437
55	126	7,492,603	173	6,750,433	299	14,243,036
56	163	9,507,272	146	5,734,101	309	15,241,373

Table 1 (continued)
The Number and Annual Salaries of Members in Active Service Distributed by Age
as of December 31, 2017

General Employees

Age	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
57	129	\$ 7,151,521	133	\$ 5,131,795	262	\$ 12,283,316
58	109	6,391,558	139	4,943,606	248	11,335,164
59	134	7,509,189	154	5,891,661	288	13,400,850
60	107	5,767,856	116	4,100,401	223	9,868,257
61	72	4,243,607	91	3,374,181	163	7,617,788
62	74	4,234,863	76	2,320,202	150	6,555,065
63	59	3,104,619	73	2,626,637	132	5,731,256
64	45	2,725,636	43	1,562,989	88	4,288,625
65	36	2,172,636	48	1,971,483	84	4,144,119
66	20	1,268,916	31	1,386,358	51	2,655,274
67	12	740,145	12	344,893	24	1,085,038
68	10	836,173	14	404,561	24	1,240,734
69	8	453,562	8	315,760	16	769,322
70	7	285,947	10	343,470	17	629,417
71	5	301,825	7	162,673	12	464,498
72	3	220,609	3	98,875	6	319,484
73	3	142,988	2	62,152	5	205,140
74	3	254,688	3	46,549	6	301,237
75	2	105,226	2	40,068	4	145,294
76			4	139,140	4	139,140
77	1	70,416	1	13,190	2	83,606
78			1	8,901	1	8,901
79	1	16,406			1	16,406
80			2	82,416	2	82,416
81			3	57,798	3	57,798
83			1	21,331	1	21,331
95	1	8,909			1	8,909
Total	3,713	\$ 193,859,675	4,576	\$ 166,054,354	8,289	\$ 359,914,029

Table 2**The Number and Annual Salaries of Members in Active Service Distributed by Years of Credited Service as of December 31, 2017****General Employees**

Age	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
0	461	\$ 18,596,278	748	\$ 22,256,431	1,209	\$ 40,852,709
1	352	13,753,898	550	16,471,987	902	30,225,885
2	298	12,797,449	399	12,178,776	697	24,976,225
3	221	10,150,195	266	8,768,316	487	18,918,511
4	151	7,424,671	133	5,174,713	284	12,599,384
5	155	8,223,981	169	6,078,768	324	14,302,749
6	101	5,574,679	123	4,492,974	224	10,067,653
7	116	5,823,804	145	5,496,316	261	11,320,120
8	97	4,931,902	125	4,226,335	222	9,158,237
9	93	4,912,957	116	4,198,994	209	9,111,951
10	92	5,302,114	118	4,687,951	210	9,990,065
11	106	5,971,885	90	3,326,490	196	9,298,375
12	91	5,260,395	108	3,587,892	199	8,848,287
13	72	3,794,754	113	3,869,591	185	7,664,345
14	61	2,825,198	121	3,885,339	182	6,710,537
15	84	4,921,297	130	4,569,839	214	9,491,136
16	96	5,579,671	114	4,674,773	210	10,254,444
17	77	4,354,963	117	4,882,962	194	9,237,925
18	76	4,633,321	83	2,998,505	159	7,631,826
19	74	4,537,864	91	3,337,728	165	7,875,592
20	113	6,849,116	69	2,742,711	182	9,591,827
21	87	4,821,021	72	2,858,673	159	7,679,694
22	81	4,664,044	72	3,405,243	153	8,069,287
23	63	3,731,520	40	1,874,575	103	5,606,095
24	44	2,815,370	50	2,576,873	94	5,392,243
25	53	3,282,158	45	2,403,127	98	5,685,285
26	73	5,265,245	43	2,029,489	116	7,294,734
27	71	4,514,682	51	2,831,750	122	7,346,432
28	50	3,384,791	46	2,539,698	96	5,924,489
29	34	2,312,669	35	1,935,633	69	4,248,302
30	32	2,338,122	36	1,849,628	68	4,187,750
31	27	1,949,845	22	1,296,368	49	3,246,213
32	39	2,885,603	32	2,031,748	71	4,917,351
33	18	1,356,280	18	1,317,185	36	2,673,465
34	5	379,948	13	838,231	18	1,218,179
35	10	661,280	11	683,392	21	1,344,672
36	11	873,945	11	596,173	22	1,470,118
37	5	365,959	17	974,031	22	1,339,990

Table 2 (continued)**The Number and Annual Salaries of Members in Active Service Distributed by Years of Credited Service as of December 31, 2017****General Employees**

Age	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
38	7	\$ 587,368	10	\$ 772,060	17	\$ 1,359,428
39	5	382,554	7	399,890	12	782,444
40	1	65,238	4	168,521	5	233,759
41	1	114,330	6	387,458	7	501,788
42	5	494,759	2	140,138	7	634,897
43	1	126,490	2	100,745	3	227,235
44	1	85,598	1	45,318	2	130,916
47			1	52,130	1	52,130
48	1	66,077			1	66,077
51	1	114,387			1	114,387
53			1	38,886	1	38,886
Total	3,713	\$ 193,859,675	4,576	\$ 166,054,354	8,289	\$ 359,914,029

Table 3
The Number and Annual Salaries of Members in Active Service Distributed by Age
as of December 31, 2017

Policemen

Age	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
21	6	\$ 294,828			6	\$ 294,828
22	19	1,085,804	3	\$ 174,731	22	1,260,535
23	20	1,313,833	3	196,678	23	1,510,511
24	23	1,445,330	2	150,315	25	1,595,645
25	33	2,245,238	5	282,193	38	2,527,431
26	33	2,251,762	7	550,433	40	2,802,195
27	34	2,224,874	5	261,251	39	2,486,125
28	39	2,691,779	4	263,075	43	2,954,854
29	38	2,762,946	4	268,800	42	3,031,746
30	42	3,240,602	10	741,607	52	3,982,209
31	47	3,761,732	9	706,914	56	4,468,646
32	55	4,306,866	11	998,978	66	5,305,844
33	57	4,498,192	8	636,842	65	5,135,034
34	51	4,291,273	5	420,662	56	4,711,935
35	53	4,467,510	14	1,182,104	67	5,649,614
36	38	3,157,848	11	919,429	49	4,077,277
37	50	4,385,667	13	1,064,806	63	5,450,473
38	49	4,412,604	13	1,119,966	62	5,532,570
39	52	4,555,643	12	1,069,814	64	5,625,457
40	44	3,770,809	7	536,751	51	4,307,560
41	39	3,481,228	5	465,217	44	3,946,445
42	55	4,970,311	15	1,331,200	70	6,301,511
43	56	5,016,422	6	573,128	62	5,589,550
44	64	5,871,214	11	1,016,424	75	6,887,638
45	60	5,548,207	17	1,610,326	77	7,158,533
46	70	6,413,665	8	727,874	78	7,141,539
47	72	6,639,504	23	2,156,382	95	8,795,886
48	57	5,373,826	17	1,542,848	74	6,916,674
49	59	5,559,872	10	924,155	69	6,484,027
50	57	5,214,964	7	666,277	64	5,881,241
51	31	2,839,240	11	1,011,099	42	3,850,339
52	32	2,967,101	10	948,922	42	3,916,023
53	15	1,357,581	7	636,040	22	1,993,621
54	25	2,304,826	3	296,299	28	2,601,125
55	14	1,264,102			14	1,264,102
56	19	1,686,221	5	449,749	24	2,135,970
57	13	1,190,547	2	192,150	15	1,382,697
58	8	720,309	1	86,888	9	807,197

Table 3 (continued)
The Number and Annual Salaries of Members in Active Service Distributed by Age
as of December 31, 2017

Policemen

Age	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
59	6	\$ 534,533			6	\$ 534,533
60	3	278,579	2	\$ 173,052	5	451,631
61	3	274,116			3	274,116
64	1	88,176	1	87,103	2	175,279
65			1	87,627	1	87,627
67	1	97,070			1	97,070
68	1	111,153			1	111,153
69	2	255,547			2	255,547
70	1	112,602			1	112,602
Total	1,547	\$ 131,336,056	308	\$ 26,528,109	1,855	\$ 157,864,165

Table 4
The Number and Annual Salaries of Members in Active Service Distributed by Years of Credited Service
as of December 31, 2017

Policemen

Age	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
0	91	\$ 4,362,499	15	\$ 671,991	106	\$ 5,034,490
1	79	4,518,718	15	867,951	94	5,386,669
2	56	3,779,750	8	541,254	64	4,321,004
3	101	7,616,922	15	1,117,367	116	8,734,289
4	5	388,905	2	102,285	7	491,190
5	33	2,697,225	7	581,308	40	3,278,533
6	12	974,715	2	144,474	14	1,119,189
7	38	3,295,180	3	256,511	41	3,551,691
8	38	3,326,312	4	355,187	42	3,681,499
9	32	2,902,962	4	362,661	36	3,265,623
10	109	9,671,662	14	1,268,444	123	10,940,106
11	91	8,209,724	20	1,795,812	111	10,005,536
12	45	4,000,392	8	742,221	53	4,742,613
13	61	5,415,360	9	800,152	70	6,215,512
14	39	3,532,651	12	1,097,245	51	4,629,896
15	78	6,976,379	15	1,348,107	93	8,324,486
16	88	7,927,647	27	2,399,227	115	10,326,874
17	55	5,004,594	10	909,663	65	5,914,257
18	40	3,664,763	10	887,411	50	4,552,174
19	24	2,172,212	7	643,947	31	2,816,159
20	67	6,190,778	15	1,408,214	82	7,598,992
21	80	7,418,809	17	1,636,014	97	9,054,823
22	89	8,444,162	20	1,884,295	109	10,328,457
23	51	4,769,782	7	650,919	58	5,420,701
24	55	5,293,504	23	2,190,891	78	7,484,395
25	34	3,206,141	9	901,350	43	4,107,491
26	29	2,886,202	3	301,213	32	3,187,415
27	9	899,558	2	196,411	11	1,095,969
28	4	362,396	3	290,681	7	653,077
29	3	289,818	1	88,280	4	378,098
30	2	209,672			2	209,672
31	1	98,733			1	98,733
32	4	430,620			4	430,620
34	1	87,627			1	87,627
36	1	98,733	1	86,623	2	185,356
40	1	111,153			1	111,153
48	1	99,796			1	99,796
Total	1,547	\$ 131,336,056	308	\$ 26,528,109	1,855	\$ 157,864,165

Table 5
The Number and Annual Salaries of Members in Active Service Distributed by Age
as of December 31, 2017

Firemen

Age	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
21	16	\$ 810,053	2	\$ 102,205	18	\$ 912,258
22	16	851,114	2	109,607	18	960,721
23	14	802,660	3	166,542	17	969,202
24	9	546,055			9	546,055
25	2	118,733			2	118,733
27	1	308			1	308
28	1	48,564			1	48,564
29	7	548,695	1	65,799	8	614,494
30	13	987,049	1	85,200	14	1,072,249
31	17	1,384,338			17	1,384,338
32	21	1,771,365	1	96,578	22	1,867,943
33	28	2,318,193			28	2,318,193
34	19	1,523,286			19	1,523,286
35	22	1,899,297	1	84,676	23	1,983,973
36	28	2,324,382	1	84,405	29	2,408,787
37	21	1,795,784			21	1,795,784
38	31	2,711,149			31	2,711,149
39	21	1,703,929	1	76,062	22	1,779,991
40	22	1,955,751			22	1,955,751
41	20	1,729,890	1	87,452	21	1,817,342
42	19	1,699,140	1	75,008	20	1,774,148
43	20	1,796,826			20	1,796,826
44	16	1,400,937			16	1,400,937
45	24	2,146,816			24	2,146,816
46	40	3,706,002	1	93,593	41	3,799,595
47	45	4,111,914	2	205,490	47	4,317,404
48	20	1,779,525			20	1,779,525
49	34	3,055,440	2	166,235	36	3,221,675
50	23	2,049,703	1	82,629	24	2,132,332
51	18	1,616,001	1	86,857	19	1,702,858
52	23	2,100,883	2	165,068	25	2,265,951
53	17	1,528,971			17	1,528,971
54	17	1,603,815			17	1,603,815
55	6	587,928			6	587,928
56	8	782,364			8	782,364
57	4	334,119			4	334,119

Table 5 (continued)

**The Number and Annual Salaries of Members in Active Service Distributed by Age
as of December 31, 2017**

Firemen

Age	Number	Men		Women		Totals	
		Number	Compensation	Number	Compensation	Number	Compensation
58	3		\$ 267,054			3	\$ 267,054
59	7		719,820			7	719,820
60	1		87,486			1	87,486
61	2		187,247			2	187,247
64	1		114,084			1	114,084
Total	677		\$ 57,506,670	24	\$ 1,833,406	701	\$ 59,340,076

Table 6

The Number and Annual Salaries of Members in Active Service Distributed by Years of Credited Service as of December 31, 2017

Firemen

Age	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
0	19	\$ 903,840	1	\$ 50,270	20	\$ 954,110
1	21	1,047,221	3	155,576	24	1,202,797
2	20	1,142,590	3	172,508	23	1,315,098
3	9	564,737			9	564,737
4	21	1,411,674	1	65,799	22	1,477,473
5	24	1,735,094			24	1,735,094
6	27	2,118,705	2	151,070	29	2,269,775
7	29	2,597,649			29	2,597,649
8	44	3,834,892			44	3,834,892
9	1	83,469			1	83,469
10	15	1,285,476			15	1,285,476
11	9	784,961	1	85,200	10	870,161
12	12	1,052,242			12	1,052,242
13	28	2,587,505	1	96,578	29	2,684,083
14	17	1,484,147			17	1,484,147
15	18	1,592,271	1	87,452	19	1,679,723
16	17	1,512,227			17	1,512,227
17	52	4,629,917	1	84,676	53	4,714,593
18	25	2,337,279	1	84,405	26	2,421,684
19	23	2,185,897	1	86,857	24	2,272,754
20	48	4,380,953	2	192,828	50	4,573,781
21	33	2,928,853			33	2,928,853
22	28	2,583,401			28	2,583,401
23	47	4,185,223	2	166,235	49	4,351,458
24	21	1,916,152	2	165,163	23	2,081,315
25	21	2,103,457	1	106,255	22	2,209,712
26	13	1,191,021			13	1,191,021
27	13	1,210,839	1	82,534	14	1,293,373
28	3	308,308			3	308,308
29	5	425,218			5	425,218
30	6	597,144			6	597,144
32	3	284,187			3	284,187
33	3	303,503			3	303,503
36	1	114,084			1	114,084
37	1	82,534			1	82,534
Total	677	\$ 57,506,670	24	\$ 1,833,406	701	\$ 59,340,076

Table 7A
The Number and Annual Benefits Payable to Consenting General Employees from the Combined Fund
as of December 31, 2017

Age	Members		Beneficiaries		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
10			1	\$ 2,630	1	\$ 2,630
13			1	2,241	1	2,241
17			1	1,922	1	1,922
20			2	13,710	2	13,710
21			1	5,157	1	5,157
23			1	5,785	1	5,785
24			1	1,257	1	1,257
25			1	8,879	1	8,879
26			4	15,114	4	15,114
27			2	8,283	2	8,283
28			6	32,835	6	32,835
29			2	17,769	2	17,769
30			6	28,415	6	28,415
31			4	26,980	4	26,980
32			3	15,195	3	15,195
33			2	6,455	2	6,455
34			2	6,324	2	6,324
35			2	9,385	2	9,385
36			2	16,052	2	16,052
37			2	4,391	2	4,391
38			2	6,233	2	6,233
39			5	32,782	5	32,782
40			3	11,467	3	11,467
41	1	\$ 6,484	2	12,900	3	19,384
42	1	42,877	3	13,195	4	56,072
43	6	88,414	5	33,476	11	121,890
44	1	19,635	4	40,543	5	60,178
45	1	28,524	2	10,477	3	39,001
46	2	21,452	3	20,332	5	41,784
47	4	33,395	4	21,361	8	54,756
48	6	75,232	2	29,832	8	105,064
49	10	105,997	3	19,298	13	125,295
50	3	31,482	8	79,252	11	110,734
51	6	95,968	2	8,437	8	104,404
52	4	41,679	4	35,936	8	77,614
53	5	69,925	6	102,716	11	172,641
54	12	142,651	3	77,760	15	220,410
55	26	627,511	7	78,829	33	706,340

Table 7A (continued)
The Number and Annual Benefits Payable to Consenting General Employees from the Combined Fund
as of December 31, 2017

Age	Members		Beneficiaries		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
56	60	\$ 1,795,378	8	\$ 114,758	68	\$ 1,910,136
57	67	1,854,780	10	166,512	77	2,021,293
58	90	2,467,007	9	121,398	99	2,588,405
59	97	2,902,833	16	224,208	113	3,127,041
60	133	3,358,860	17	240,955	150	3,599,815
61	275	5,874,456	8	120,467	283	5,994,924
62	311	6,283,906	18	344,180	329	6,628,087
63	353	7,008,854	27	385,616	380	7,394,470
64	378	7,780,366	26	337,566	404	8,117,932
65	358	6,688,194	23	364,117	381	7,052,311
66	416	8,215,363	13	181,500	429	8,396,862
67	463	9,318,405	24	321,572	487	9,639,976
68	446	9,260,289	23	268,650	469	9,528,939
69	406	8,653,163	24	288,494	430	8,941,657
70	388	8,620,642	25	308,617	413	8,929,258
71	371	7,654,709	34	444,481	405	8,099,190
72	235	5,007,656	33	507,279	268	5,514,935
73	242	5,218,146	29	348,292	271	5,566,438
74	202	4,456,367	33	496,064	235	4,952,431
75	224	4,164,609	40	588,523	264	4,753,132
76	181	3,721,251	43	681,081	224	4,402,333
77	179	3,370,191	28	483,522	207	3,853,713
78	155	2,728,061	39	497,260	194	3,225,321
79	163	2,565,524	39	580,069	202	3,145,593
80	193	3,575,736	36	457,240	229	4,032,976
81	168	3,349,615	43	560,034	211	3,909,649
82	129	1,771,808	48	693,805	177	2,465,614
83	143	2,391,986	41	552,283	184	2,944,269
84	115	1,541,328	45	603,991	160	2,145,319
85	133	2,033,914	47	646,550	180	2,680,464
86	147	2,278,641	46	571,283	193	2,849,923
87	123	1,928,060	49	527,386	172	2,455,446
88	98	1,452,196	42	487,498	140	1,939,694
89	97	1,241,989	49	590,935	146	1,832,924
90	78	1,028,829	48	577,214	126	1,606,042
91	97	1,350,819	45	503,369	142	1,854,188
92	64	881,166	28	288,480	92	1,169,646
93	61	865,484	33	358,840	94	1,224,324

Table 7A (continued)
The Number and Annual Benefits Payable to Consenting General Employees from the Combined Fund
as of December 31, 2017

Age	Members		Beneficiaries		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
94	35	\$ 443,010	20	\$ 223,184	55	\$ 666,194
95	36	342,827	13	141,370	49	484,197
96	21	314,533	19	148,785	40	463,318
97	20	150,639	9	65,125	29	215,764
98	10	69,091	3	18,035	13	87,126
99	7	56,185	6	50,746	13	106,931
100	10	69,195	1	4,490	11	73,685
101			2	12,373	2	12,373
102	1	1,679	2	16,035	3	17,714
103			1	5,391	1	5,391
Total	8,067	\$ 157,538,964	1,379	\$ 17,383,228	9,446	\$ 174,922,192

Table 7B
The Number and Annual Benefits Payable to Consenting Firemen from the Combined Fund
as of December 31, 2017

Age	Members		Beneficiaries		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
29			1	\$ 3,547	1	\$ 3,547
33			1	3,547	1	3,547
35	1	\$ 55,572			1	55,572
37	1	57,056			1	57,056
40	2	98,942			2	98,942
41	2	117,716			2	117,716
44	1	24,875			1	24,875
45	4	241,584			4	241,584
46	6	340,375			6	340,375
47	1	56,576			1	56,576
48	4	223,075	1	59,645	5	282,720
49	11	640,622			11	640,622
50	13	748,763			13	748,763
51	14	793,537			14	793,537
52	20	1,121,951	2	83,837	22	1,205,788
53	21	1,158,845	1	19,880	22	1,178,725
54	27	1,625,289	2	71,346	29	1,696,634
55	30	1,772,228			30	1,772,228
56	23	1,395,618			23	1,395,618
57	32	1,790,484			32	1,790,484
58	37	2,105,861	1	3,600	38	2,109,461
59	36	2,179,159	3	137,734	39	2,316,893
60	55	3,062,408	3	88,367	58	3,150,775
61	54	3,136,744	1	33,310	55	3,170,054
62	50	2,808,019	1	36,203	51	2,844,222
63	46	2,604,915	5	134,826	51	2,739,741
64	42	2,332,446	4	107,478	46	2,439,924
65	40	2,378,756	7	69,797	47	2,448,553
66	26	1,431,084	3	99,506	29	1,530,590
67	25	1,300,710			25	1,300,710
68	27	1,560,037	3	73,084	30	1,633,121
69	31	1,926,464	1	4,802	32	1,931,266
70	32	1,786,898	7	109,664	39	1,896,562
71	48	3,093,493	7	220,602	55	3,314,094
72	26	1,517,114	3	120,850	29	1,637,963
73	18	1,015,251	6	178,820	24	1,194,071
74	27	1,248,833	4	118,230	31	1,367,063
75	34	1,785,218	9	226,184	43	2,011,402

Table 7B (continued)
The Number and Annual Benefits Payable to Consenting Firemen from the Combined Fund
as of December 31, 2017

Age	Members		Beneficiaries		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
76	30	\$ 1,665,975	7	\$ 249,637	37	\$ 1,915,613
77	16	826,987	6	142,920	22	969,907
78	18	884,042	4	56,250	22	940,291
79	17	862,875	4	141,787	21	1,004,663
80	14	598,159	10	251,637	24	849,796
81	10	533,374	9	222,399	19	755,774
82	18	813,901	11	234,232	29	1,048,133
83	9	387,374	8	200,504	17	587,878
84	12	502,127	9	181,496	21	683,622
85	8	315,544	9	260,134	17	575,678
86	15	631,919	10	200,763	25	832,682
87	23	892,311	15	282,486	38	1,174,797
88	12	571,550	16	344,413	28	915,962
89	17	666,185	13	240,522	30	906,707
90	6	196,620	12	289,910	18	486,530
91	8	306,202	7	130,027	15	436,229
92	1	23,271	3	76,734	4	100,004
93	6	239,295	2	17,183	8	256,478
94	3	109,172			3	109,172
95	3	90,612	1	27,505	4	118,117
96			1	24,077	1	24,077
97	2	69,003			2	69,003
99	1	21,057			1	21,057
Total	1,116	\$ 60,744,068	233	\$ 5,579,476	1,349	\$ 66,323,545

Table 7C
The Number and Annual Benefits Payable to Consenting Policemen from the Combined Fund
as of December 31, 2017

Age	Members		Beneficiaries		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
15			1	\$ 15,059	1	\$ 15,059
16			1	10,542	1	10,542
17			1	15,059	1	15,059
18			1	9,945	1	9,945
20			1	13,768	1	13,768
21			1	23,969	1	23,969
29			1	13,768	1	13,768
31			1	9,945	1	9,945
33			1	10,542	1	10,542
34			1	51,334	1	51,334
35	1	70,227			1	70,227
36	1	27,371	1	9,188	2	36,560
37	1	58,290			1	58,290
39	3	208,092			3	208,092
40	3	174,870			3	174,870
41	1	57,330	1	50,665	2	107,995
42	4	207,253			4	207,253
43	2	113,361			2	113,361
44	3	181,272	1	43,870	4	225,142
45	10	592,379	1	8,687	11	601,066
46	12	727,177	3	101,545	15	828,723
47	9	547,298			9	547,298
48	19	1,138,652	1	8,687	20	1,147,339
49	28	1,782,247			28	1,782,247
50	35	2,119,959			35	2,119,959
51	25	1,536,305			25	1,536,305
52	35	1,953,723	2	55,563	37	2,009,287
53	36	2,187,221	3	82,999	39	2,270,220
54	39	2,319,083			39	2,319,083
55	44	2,707,137	1	30,197	45	2,737,334
56	34	2,202,700	4	210,565	38	2,413,265
57	39	2,289,822	2	76,211	41	2,366,033
58	58	3,277,945	5	160,835	63	3,438,780
59	62	3,542,780	3	86,760	65	3,629,540
60	53	2,909,971	5	130,125	58	3,040,096
61	63	3,725,239	3	25,947	66	3,751,185
62	58	3,451,449	9	290,034	67	3,741,483
63	65	3,565,870	5	281,651	70	3,847,520

Table 7C (continued)
The Number and Annual Benefits Payable to Consenting Policemen from the Combined Fund
as of December 31, 2017

Age	Members		Beneficiaries		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
64	65	\$ 3,566,476	4	\$ 108,135	69	\$ 3,674,611
65	70	4,089,698	7	311,639	77	4,401,337
66	53	2,921,977	9	398,504	62	3,320,480
67	52	3,324,858	11	341,087	63	3,665,945
68	66	3,714,912	7	290,710	73	4,005,623
69	62	3,548,992	7	174,588	69	3,723,580
70	84	5,133,351	9	426,798	93	5,560,149
71	69	3,930,402	17	519,517	86	4,449,919
72	50	2,911,362	9	215,032	59	3,126,395
73	47	2,689,937	15	607,747	62	3,297,684
74	51	2,589,452	16	588,546	67	3,177,998
75	67	3,166,247	18	586,157	85	3,752,405
76	42	2,103,421	13	351,852	55	2,455,273
77	41	2,098,056	13	353,544	54	2,451,600
78	48	2,165,992	10	273,624	58	2,439,615
79	36	1,613,573	13	356,225	49	1,969,798
80	29	1,266,016	10	351,147	39	1,617,163
81	21	942,520	13	371,006	34	1,313,525
82	27	1,231,504	24	647,699	51	1,879,203
83	22	916,689	16	359,185	38	1,275,874
84	16	610,436	22	502,915	38	1,113,350
85	18	631,613	25	517,386	43	1,149,000
86	23	880,611	16	403,237	39	1,283,848
87	18	669,844	22	508,670	40	1,178,514
88	15	579,458	21	419,133	36	998,591
89	17	730,780	16	301,768	33	1,032,548
90	16	573,397	15	328,516	31	901,914
91	11	422,711	18	347,863	29	770,574
92	4	99,738	10	118,419	14	218,157
93	5	119,627	4	46,545	9	166,172
94	4	115,413	5	85,195	9	200,608
95	4	75,563	2	47,273	6	122,835
96	2	62,109	4	46,137	6	108,247
97			3	52,158	3	52,158
98	1	28,684	2	22,282	3	50,967
99			1	11,771	1	11,771
Total	1,899	\$ 103,200,446	487	\$ 13,219,470	2,386	\$ 116,419,916

Table 8
The Number and Annual Benefits Payable to Non-Consenters from the Retirement Fund
as of December 31, 2017

Age	Members		Beneficiaries		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
59			1	\$ 9,683	1	\$ 9,683
65	1	\$ 1,813	1	7,743	2	9,555
67	1	25,479			1	25,479
69	1	3,588			1	3,588
73	1	5,296			1	5,296
74	1	2,859			1	2,859
75	1	17,091			1	17,091
77	1	19,489			1	19,489
80	1	501			1	501
83	1	1,254			1	1,254
85	1	3,474			1	3,474
86			1	10,446	1	10,446
88	1	9,922			1	9,922
101	1	11,106			1	11,106
Total	12	\$ 101,872	3	\$ 27,871	15	\$ 129,744

Exhibit 3 Reconciliation of Membership Data

**Reconciliation of Membership Data
From January 1, 2017 to January 1, 2018**

	Benefit Recipients					
	Active Members	Inactive Members	Disableds	Service Retirees	Beneficiaries	Total
Participants as of January 1, 2017	11,083	3,416	905	9,881	2,102	27,387
Changes due to:		-				-
New participants	1,094	-	-	-	162	1,256
Vested terminations	(355)	355	-	-	-	-
Retirements	(463)	(191)	-	654	-	-
Disabilities	(19)	(7)	26	-	-	-
Return to work	61	(61)	-	-	-	-
Refund/Withdrawal	(523)	(87)	-	-	-	(610)
Death	(27)	(10)	(34)	(340)	(159)	(570)
Cessation of benefits	-	-	(1)	(12)	(2)	(15)
Assumed Refund	-	(297)	-	-	-	(297)
Data adjustments	(6)	17	7	8	(1)	25
Total changes	(238)	(281)	(2)	310	-	(211)
Participants as of January 1, 2018	10,845	3,135	903	10,191	2,102	27,176

© 2017 Conduent Business Services, LLC. All rights reserved. Conduent™ and Conduent Agile Star™ are trademarks of Conduent Business Services, LLC in the United States and/or other countries.

Other company trademarks are also acknowledged.
Document Version: 1.0 (March 2017) BR700