

Employees' Retirement System of the City of Milwaukee

Actuarial Valuation Report

As of January 1, 2017
June 2017

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Document Version: 1.0 (May 2017).

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June 19, 2017

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:

This report presents 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, 2017, 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, 2017.

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

The valuation was based on the actuarial assumptions and methods as adopted by the Board of Trustees, and 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 as specified in the Charter. These rates are established consistent 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 the contribution that would result by calculating the 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 determined actuarial contribution rates under the Stable Employer Contribution Policy for policeman, fireman, and general employees of 22.63%, 24.83% and 8.48% respectively. These rates are in effect for employer contributions through January 1, 2018.

Effective May 18, 2010, the asset smoothing, asset corridor and amortization methods were added as Section 36-15-15 of the MCC. The actuarial cost method is prescribed in Section 36-15-15. Full Funding Limit (Section 36-08-6-h) was eliminated with the implementation of the Stable Employer Contribution Policy. The assumptions and methods used for this valuation are individually, and in the aggregate, reasonable and comply with generally accepted Actuarial Standards of Practice. As required under Section 36-15-14, experience reviews are performed once every five-year period. This valuation was prepared on the basis of the interest, salary and demographic assumptions that were determined from the Experience Study for the period January 1, 2007 to December 31, 2011 prepared by Conduent and approved by the Board for use beginning with the January 1, 2013 actuarial valuation. These assumptions will remain in effect for valuation purposes until such time as the Board adopts revised assumptions, which is scheduled to be performed before the January 1, 2018 valuation. Actuarial Standards of Practice now require that the likelihood and extent of future mortality improvements be considered for valuations performed on or after June 30, 2011.



We have reflected future mortality improvements beginning with the January 1, 2013 annual actuarial valuation.

Future actuarial measurements may differ significantly from the current measurement 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 validity of the actuarial valuation results 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, 2017 valuation are 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 period as adopted by the Board and specified in the MCC. The Board adopted a twenty-five-year amortization period effective with the January 1, 2009 actuarial valuation. The period will be reduced by one year each subsequent year until the period equals the future working lifetime of employees covered by the funds. The amortization period is seventeen years as of January 1, 2017.

On this basis, the valuation indicates that the employer contribution of \$89,590,432 (payable January 31, 2018) 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 the valuation report.



Events during 2016 that Impacted the 2017 Results

Results of this valuation differ from what we were projecting in last year's valuation for many reasons:

- (a) Market value return of 8.83% compared to 8.25% assumed, resulting in a slightly higher funded ratio than expected.
- (b) On the liability side of the equation, more benefits were paid than anticipated while payroll increased 8% mainly due to recent contract settlement for Policeman and Fireman and compared to the payroll growth assumption of 3%; average individual pay increased from last year resulting in a higher unfunded liability than anticipated.
- (c) Since the January 1, 2016 actuarial valuation was completed, thirteen individuals who were eligible for ERS benefits as of June 28, 2000 – and who had not consented to GPS – have now consented.
- (d) The plan changes of service retirement eligibility for Policeman hired on/after December 20, 2015 and Fireman hired on/after July 30, 2016, resulting a slightly higher funded ratio.
- (e) Overall, the funded ratio was lower than anticipated as a result of the events of 2016.

Qualified actuaries completed the valuation in accordance with accepted actuarial procedures as prescribed by the Actuarial Standards Board. The qualified actuaries are members of the American Academy of Actuaries and are experienced in performing actuarial valuations of public employee retirement systems. To the best of our knowledge, this report is complete and accurate and has been prepared in accordance with generally accepted actuarial principles and practice. The undersigned with actuarial designations meet the Qualification Standard to render the opinions contained in this report.

Sincerely,

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Principal, Consulting Actuary

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Consultant, Retirement Actuary

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Senior Consultant, Retirement Actuary

Conduent HR Services

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 seventy-ninth annual actuarial valuation of the ERS as of January 1, 2017.

In this report we present the results of the January 1, 2017 valuation and the recommended employer contributions for the year ending December 31, 2017. 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, 2013, based on the experience study for the five-year period ended December 31, 2011. The next experience review will be completed for the January 1, 2018 actuarial valuation. The 3.0% inflation assumption was adopted as of January 1, 2003. The projected unit credit actuarial cost method was adopted as of January 1, 1995, as prescribed in MCC Section 36-08. The actuarial asset valuation method and the amortization method were adopted as of January 1, 2010, 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. Note that similar measurements 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) for 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, 2016:

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, 2016 actuarial valuation was completed, thirteen individuals who were eligible for ERS benefits as of June 28, 2000 – and who had not consented to GPS – have now consented. The January 1, 2017 valuation reflects the impact of this change.

The service retirement eligibility for the Police employees enrolled on or after December 20, 2015 has changed to

- (1) 25 years of police qualifying time AND attaining age 50, or
- (2) Attaining age 57

From

- (1) any age after attaining 25 years of fire or police qualifying time, or
- (2) Attaining age 57

The service retirement eligibility for the Fire employes enrolled on or after July 30, 2016 has changed to

- 1) 25 years of fire qualifying time AND attaining age 52, or
- 2) Attaining age 57

From

- 1) 22 years of fire or police qualifying time AND attaining age 49, or
- 2) Attaining age 57

There is no immediate impact on the retirement system costs and liabilities regarding plan changes for the normal retirement eligibility. The plan changes reduced present value of future benefits and actuarial accrued liability as of January 1, 2017 by about \$252,000 and \$6,000 respectively.

Fiscal Impact of Changes

The fiscal impact of new consents to GPS is explained on page 8

Summary of Principal Results

Summarized below are the principal financial results for the ERS based upon the actuarial valuation as of January 1, 2017. Comparable results from the January 1, 2016 valuation are also shown.

Item	January 01, 2016	January 01, 2017
Membership Data		
Active Members		
➤ Number	10,982	11,083
➤ Total Annual Covered Payroll on the Valuation Date	\$535,802,000	\$583,950,000
➤ Average Pay	\$48,789	\$52,689
Retirees and Beneficiaries		
➤ Number	12,763	12,888
➤ Annual Benefit	\$328,296,000	\$340,772,000
➤ Average Benefit Payment	\$25,722	\$26,441
Asset Values (includes contributions receivable)		
➤ Actuarial Value	\$4,899,155,000	\$5,055,700,000
➤ Market Value	\$4,752,308,000	\$4,886,669,000
Actuarially Determined Employer Contribution	Due 1/31/2017	Due 1/31/2018
➤ Annual Cost	\$80,288,000	\$89,590,000
➤ As % of Covered Payroll	14.98%	15.34%
Funded Status		
➤ Accrued Liability	\$5,065,141,000	\$ 5,259,300,000
➤ Actuarial Value of Assets	<u>4,899,155,000</u>	<u>5,055,700,000</u>
➤ Unfunded (Overfunded) Accrued Liability	\$165,986,000	\$ 203,600,000
➤ Funded Ratio Based on Actuarial Value of Assets	96.7%	96.1%
➤ Accrued Liability	\$5,065,141,000	\$ 5,259,300,000
➤ Market Value of Assets	<u>4,752,308,000</u>	<u>4,886,669,000</u>
➤ Unfunded (Overfunded) Accrued Liability	\$312,833,000	\$ 372,631,000
➤ Funded Ratio Based on Market Value of Assets	93.8%	92.9%

Summarized below are the Actuarial Funding Results as of January 1, 2017 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	503,203	51,406	228,280	-	44,434	15,448	10,423	26,950	1,994	847,649	321,642	2,051,429
• Withdrawal Benefits	25,646	2,181	15,431	-	2,150	60	473	1,270	155	128,099	17,130	192,595
• Disability Benefits	28,448	2,637	16,775	-	2,443	274	530	1,548	167	21,798	51,761	126,381
• Death Benefits	4,695	469	2,478	-	453	140	113	267	21	2,597	1,007	12,240
Total	561,992	56,693	262,964	-	49,480	15,922	11,539	30,035	2,337	1,000,143	391,540	2,382,645
2. Inactive Members with Deferred Benefits	33,204	1,763	30,337	-	2,723	143	1,014	1,116	80	24,458	18,306	113,144
3. Retired Members and Beneficiaries Receiving Benefits	920,374	72,119	401,173	15,285	119,006	42,858	6,771	23,413	445	1,235,634	675,289	3,512,367
4. Total Present Value of Projected Benefits (1. + 2. + 3.)	1,515,570	130,575	694,474	15,285	171,209	58,923	19,324	54,564	2,862	2,260,235	1,085,135	6,008,156
5. Present Value of Future Normal Costs	160,337	15,375	91,165	-	14,596	2,017	3,395	9,094	883	335,143	116,851	748,856
6. Total Actuarial Accrued Liability (4. – 5.)	1,355,233	115,200	603,309	15,285	156,613	56,906	15,929	45,470	1,979	1,925,092	968,284	5,259,300

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	16,936	1,716	8,467	-	1,563	454	396	1,025	72	29,055	10,670	70,354
• Withdrawal Benefits	1,580	140	1,095	-	140	2	30	83	8	7,123	851	11,052
• Disability Benefits	1,486	142	1,040	-	129	8	31	88	8	1,118	2,474	6,524
• Death Benefits	211	22	140	-	21	4	6	14	1	120	45	584
2. Total Normal Cost	20,213	2,020	10,742	-	1,853	468	463	1,210	89	37,416	14,040	88,514

Fiscal Impact of New Consents to the Pension Settlement

Based on data provided by ERS to the actuary, thirteen 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 \$1,356,000. 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 employe group; fire, police, or general.

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 2016 was calculated as of January 1, 2016 (the beginning of the year of consent). Table 7 of this report provides the necessary details.

Contribution Requirements for Fiscal Year 2017

Actuarially Determined Employer Contributions:

The recommended contribution for 2017 payable January 31, 2018 is allocated to the different funds and employe groups as follows:

Item	General Employees	Policemen	Firemen	Total
Combined Fund	\$ 33,146,215	39,457,424	16,824,793	\$89,428,432
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	145,000	17,000	0	162,000
Total Contribution	\$33,291,215	\$39,474,424	\$16,824,793	\$89,590,432
Covered Compensation	\$ 361,660,000	\$ 160,106,000	\$ 62,184,000	\$ 583,950,000
Total Contribution as a Percentage of Covered Compensation	9.2%	24.7%	27.1%	15.3%

Member Contributions to the Funds shown on previous page:

Employer Paid

For Fire and Police employees hired prior to October 3, 2011, the City makes "member contributions" each pay period to the members' individual accounts equal to the following percentages of earnable compensation:

General Employees	5.5%
Elected Officials	7.0%
Fire	7.0%
Policemen	7.0% less \$1.00 per year per policeman

Generally, for Elected Officials, General City employees, and Fire and Police employees hired on or after October 3, 2011, the City no longer makes member contributions on behalf of the employees, and the members pay their own contributions each pay period in the form of payroll deductions. For additional details, refer to the Summary of Plan Provision section of this report.

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

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

Member Paid

General employees enrolled after 1999 who participate in the Combined Fund, contribute 1.6% of earnable compensation during their first 8 years of employment. However, members who are obligated to make the member contribution are not also required to make the 1.6% contribution (See Section 36-08-7-m).

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 96.1% as of January 1, 2017. The funded ratio is based on an actuarial value of assets of \$5.056 billion and an accrued liability of \$5.259 billion.

Reasons for Change in the Funded Ratio

The funded ratio based on the actuarial value of assets decreased from 96.7% as of January 1, 2016 to 96.1% as of January 1, 2017. The funded ratio based on the market value of assets decreased from 93.8% as of January 1, 2016 to 92.9% as of January 1, 2017. 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, 2016	96.7%	93.8%
Expected change	0.4%	0.2%
Change due to assumptions	0.0%	0.0%
Change due to asset return	0.1%	0.0%
Change due to liabilities	-1.1%	-1.1%
Change due to plan	0.0%	0.0%
Total change	-0.6%	-0.9%
January 1, 2017	96.1%	92.9%

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
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%
2007	4,899,721	3,846,481	-	127.4%	528,854	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, 2016, was 8.83% reported by ERS staff. The return based on the actuarial value of assets used for determining the System's funded status was 8.33%. 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
2016	8.33 %	8.83 %
2015	7.00	0.52
2014	9.91	4.72
2013	12.85	18.44
2012	0.43	13.50

Five-Year History of Market Value and Valuation Assets

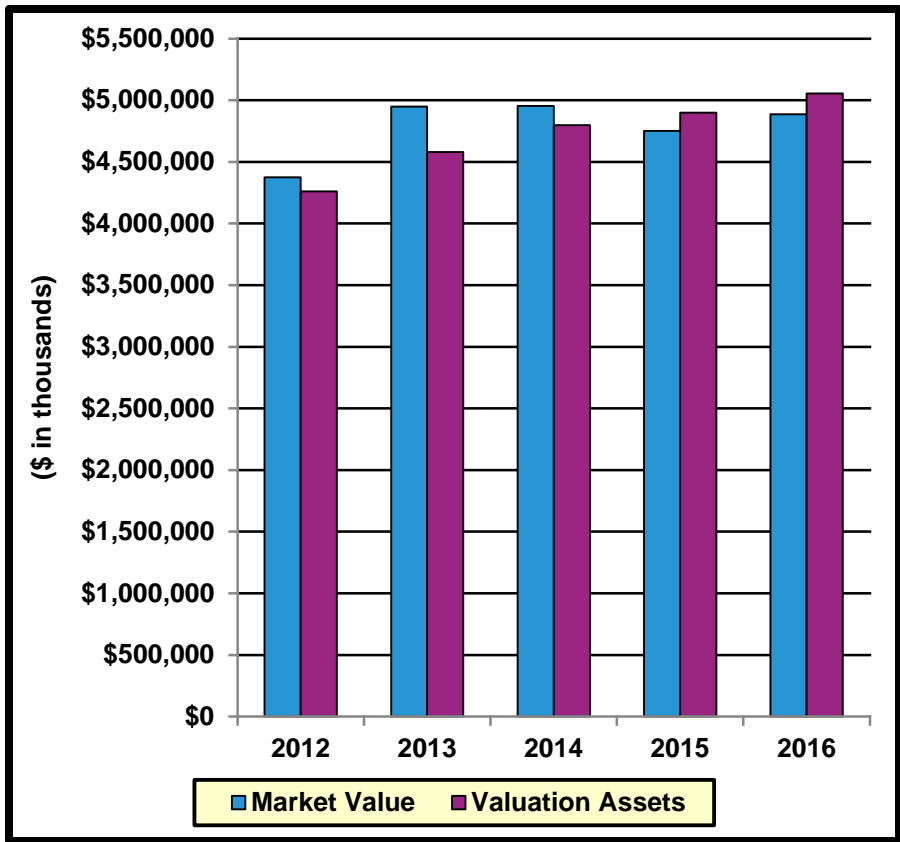


Table 1a Summary of Results of Actuarial Valuation

**Allocation of Total 2017 Contributions to Employee Groups
Members in Retirement and Duty Disability Funds
Amount due January 31, 2018**

Group	Active Members	Covered Compensation	Fund			January 31, 2018	
			Retirement	Duty Disability	Heart & Lung	Total Due	% of Pay
General City	8	\$ 377,351	\$ -	\$ -	\$ -	\$ -	0.00%
Water Department	1	52,174	-	-	-	-	0.00%
School Board	25	660,259	-	-	-	-	0.00%
Milwaukee Technical College	-	-	-	-	-	-	
Sewerage Commission	-	-	-	-	-	-	
Veolia	-	-	-	-	-	-	
Wisconsin Center District	-	-	-	-	-	-	
Housing Authority	-	-	-	-	-	-	
Redevelopment Authority	-	-	-	-	-	-	
Policemen	-	-	-	-	-	-	
Firemen	-	-	-	-	-	-	
TOTAL	34	\$ 1,089,784	\$ -	\$ -	\$ -	\$ -	0.00%

Table 1b Allocation of Total 2017 Contributions to Employee Groups

**Members in Combined Retirement and Disability Fund
Amount due January 31, 2018**

Group	Active Members	Covered Compensation	Fund		January 31, 2018	
			Combined Retirement & Disability	Heart & Lung	Total Due	% of Pay
General City	16	\$ 890,006	\$ 69,308	\$ -	\$ 69,308	7.79%
Water Department	-	-	-	-	-	-
School Board*	25	810,006	63,079	-	63,079	7.79%
Milwaukee Technical College	-	-	-	-	-	-
Sewerage Commission	-	-	-	-	-	-
Veolia	-	-	-	-	-	-
Wisconsin Center District	-	-	-	-	-	-
Housing Authority	3	161,965	12,613	-	12,613	7.79%
Redevelopment Authority	-	-	-	-	-	-
Policemen	1	97,442	17,000	-	17,000	17.45%
Firemen	-	-	-	-	-	-
TOTAL	45	\$ 1,959,419	\$ 162,000	\$ -	\$ 162,000	8.27%

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

Payable at	January 31, 2018
Normal cost	45,858
Past service portion	17,221
Total	63,079

**Table 1c Allocation of Total 2017 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, 2017	June 1, 2017	July 1, 2017	August 1, 2017	September 1, 2017	October 1, 2017	November 1, 2017	December 1, 2017	January 31, 2018	
General City *	3,332	\$ 182,988,398	8.48%	\$ 15,517,416	\$ 16,038,523	\$ 16,144,826	\$ 16,251,833	\$ 16,359,550	\$ 16,467,980	\$ 16,577,129	\$ 16,687,002	\$ 16,908,937	
Water Department	311	17,534,574	8.48%	1,486,932	1,536,866	1,547,052	1,557,306	1,567,628	1,578,018	1,588,477	1,599,006	1,620,272	
School Board****	4,174	122,400,905	8.48%	10,379,597	10,728,165	10,799,271	10,870,848	10,942,900	11,015,429	11,088,439	11,161,933	11,310,385	
Milwaukee Technical College	-	-	8.48%	-	-	-	-	-	-	-	-	-	
Sewerage Commission	216	17,177,813	8.48%	1,456,679	1,505,597	1,515,576	1,525,621	1,535,733	1,545,912	1,556,158	1,566,472	1,587,306	
Veolia	36	2,921,654	8.48%	247,756	256,076	257,774	259,482	261,202	262,933	264,676	266,430	269,974	
Wisconsin Center District	82	4,287,544	8.48%	363,584	375,794	378,284	380,792	383,315	385,856	388,414	390,988	396,188	
Housing Authority	179	10,608,347	8.48%	899,588	929,798	935,961	942,164	948,409	954,695	961,022	967,392	980,258	
Redevelopment Authority	9	788,869	8.48%	66,896	69,143	69,601	70,062	70,527	70,994	71,465	71,938	72,895	
Policemen	1,921	160,010,056	22.63%	36,210,276	37,426,291	37,674,351	37,924,056	38,175,415	38,428,440	38,683,143	38,939,533	39,457,424	
Firemen	744	62,183,635	24.83%	15,440,197	15,958,710	16,064,484	16,170,959	16,278,139	16,386,030	16,494,636	16,603,962	16,824,793	
TOTAL	11,004	\$ 580,901,795		\$ 82,068,921	\$ 84,824,963	\$ 85,387,180	\$ 85,953,123	\$ 86,522,818	\$ 87,096,287	\$ 87,673,559	\$ 88,254,656	\$ 89,428,432	

* 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 follow:

Payable at	January 1, 2017	June 1, 2017	July 1, 2017	August 1, 2017	September 1, 2017	October 1, 2017	November 1, 2017	December 1, 2017	January 31, 2018
Normal cost	3,467,035	3,583,465	3,607,216	3,631,124	3,655,191	3,679,418	3,703,805	3,728,354	3,777,940
Past service portion	6,912,562	7,144,700	7,192,055	7,239,724	7,287,709	7,336,011	7,384,634	7,433,579	7,532,445
Total	10,379,597	10,728,165	10,799,271	10,870,848	10,942,900	11,015,429	11,088,439	11,161,933	11,310,385

Table 1c (Continued)** Allocation of Total Estimated 2018 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, 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 *	3,332	\$ 188,478,050	8.48%	\$ 15,982,939	\$ 16,519,679	\$ 16,629,170	\$ 16,739,388	\$ 16,850,336	\$ 16,962,020	\$ 17,074,443	\$ 17,187,612	\$ 17,416,205			
Water Department	311	18,060,611	8.48%	1,531,540	1,582,972	1,593,464	1,604,025	1,614,657	1,625,359	1,636,132	1,646,976	1,668,880			
School Board****	4,174	126,072,932	8.48%	10,690,985	11,050,010	11,123,249	11,196,973	11,271,187	11,345,892	11,421,092	11,496,791	11,649,696			
Milwaukee Technical College	-	-	8.48%	-	-	-	-	-	-	-	-	-			
Sewerage Commission	216	17,693,147	8.48%	1,500,379	1,550,765	1,561,043	1,571,390	1,581,805	1,592,289	1,602,843	1,613,466	1,634,925			
Veolia	36	3,009,304	8.48%	255,189	263,759	265,507	267,267	269,038	270,821	272,616	274,423	278,073			
Wisconsin Center District	82	4,416,170	8.48%	374,491	387,067	389,633	392,215	394,815	397,432	400,066	402,718	408,074			
Housing Authority	179	10,926,597	8.48%	926,575	957,692	964,039	970,429	976,861	983,335	989,853	996,414	1,009,666			
Redevelopment Authority	9	812,535	8.48%	68,903	71,217	71,689	72,164	72,642	73,124	73,608	74,096	75,082			
Police	1,921	164,810,358	22.63%	37,296,584	38,549,080	38,804,582	39,061,777	39,320,678	39,581,294	39,843,637	40,107,720	40,641,147			
Firemen	744	64,049,144	24.83%	15,903,402	16,437,471	16,546,418	16,656,088	16,766,484	16,877,611	16,989,475	17,102,081	17,329,536			
TOTAL	11,004	\$ 598,328,848		\$ 84,530,987	\$ 87,369,712	\$ 87,948,794	\$ 88,531,716	\$ 89,118,503	\$ 89,709,177	\$ 90,303,765	\$ 90,902,297	\$ 92,111,284			

* 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, 2019.
 The actual employer contribution requirements due by January 31, 2019 will be based on the results of the January 1, 2018 actuarial valuation, which is scheduled to be approved at the June 2018 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 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	3,571,046	3,690,969	3,715,432	3,740,058	3,764,847	3,789,800	3,814,919	3,840,204	3,891,278
Past service portion	7,119,939	7,359,041	7,407,817	7,456,915	7,506,340	7,556,092	7,606,173	7,656,587	7,758,418
Total	10,690,985	11,050,010	11,123,249	11,196,973	11,271,187	11,345,892	11,421,092	11,496,791	11,649,696

Note: The stable contribution rates in calendar year 2018 will be reevaluated as the result of the 5-year experience review to be performed in 2017, early indication suggests a double digit increase in contribution dollar amounts are likely.

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

Item	General Employees	Police	Fire	Total
1. Active Members	34	-	-	34
2. Covered Compensation	\$ 1,090	\$ -	\$ -	\$ 1,090
3. Normal Cost				
a. Total	153	-	-	153
b. Estimated Member Contributions	60	-	-	60
c. Employer Normal Cost (a) - (b), not less than zero	93	-	-	93
4. Active Actuarial Accrued Liability	4,020	-	-	4,020
5. Assets				
a. Actuarial value	9,206	-	-	9,206
b. Market value (Net of Inactive Liabilities)	8,789	-	-	8,789
6. Unfunded Accrued Liability				
a. Actuarial value	(5,186)	-	-	(5,186)
b. Market value (4) - (5)	(4,769)	-	-	(4,769)
7. Amortization of UAL				
a. Actuarial value	(448)	-	-	(448)
b. Market value (Closed Amortization Years)	(412) (17 years)	-	-	(412)
8. Full Funding Limit*				
a. Actuarial value	-	-	-	-
b. Market value (3) + (6), not less than zero, with interest to 1/31/2018	-	-	-	-
9. Annual Contribution Payable January 31, 2018				
a. Actuarial value	\$ -	\$ -	\$ -	\$ -
b. Market value (3) + (7), with interest to 1/31/2018, but not more than (8)	\$ -	\$ -	\$ -	\$ -

* The full funding limit is the contribution based on the January 1, 2017 valuation which, if made January 31, 2018, would bring the expected assets at that date equal to the expected Actuarial Accrued Liability at that date.

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

Item	General Employees	Police	Fire	Total
1. Active Members	44	1	-	45
2. Covered Compensation	\$ 1,862	\$ 96	\$ -	\$ 1,958
3. Normal Cost				
a. Total	205	20	-	225
b. Estimated Member Contributions	<u>102</u>	<u>7</u>	<u>-</u>	<u>109</u>
c. Employer Normal Cost (a) - (b), not less than zero	103	13	-	116
4. Active Actuarial Accrued Liability	3,776	343	-	4,119
5. Actuarial Assets				
a. Actuarial value	3,426	311	-	3,737
b. Market value (Net of Inactive Liabilities)	3,291	299	-	3,590
6. Unfunded Accrued Liability (UAL)				
a. Actuarial value	350	32	-	382
b. Market value (4) - (5)	485	44	-	529
7. Amortization of UAL				
a. Actuarial value	30	3	-	33
b. Market value (Closed Amortization Years)	42 (17 years)	4 (17 years)	-	46
8. Full Funding Limit*				
a. Actuarial value	494	49	-	543
b. Market value (3) + (6), not less than zero, with interest to 1/31/2018	641	62	-	703
9. Annual Contribution Payable January 31, 2018				
a. Actuarial value	\$ 145	\$ 17	\$ -	\$ 162
b. Market value (3) + (7), with interest to 1/31/2018, but not more than (8)	\$ 158	\$ 19	\$ -	\$ 177

* The full funding limit is the contribution based on the January 1, 2017 valuation which, if made January 31, 2018, would bring the expected assets at that date equal to the expected Actuarial Accrued Liability at that date.

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

Item	General Employees	Police	Fire	Total
1. Active Members	8,339	1,921	744	11,004
2. Covered Compensation	\$ 358,708	\$ 160,010	\$ 62,184	\$ 580,902
3. Normal Cost				
a. Total	36,700	37,395	14,040	88,135
b. Estimated Member Contributions	20,720	11,201	4,353	36,274
c. Employer Normal Cost (a) - (b), not less than zero	15,980	26,194	9,687	51,861
4. Active Actuarial Accrued Liability	686,281	664,658	274,691	1,625,630
5. Assets				
a. Actuarial value	591,069	572,446	236,582	1,400,097
b. Market value (Net of Inactive Liabilities)	519,951	503,568	208,115	1,231,634
6. Unfunded Accrued Liability				
a. Actuarial value	95,212	92,212	38,109	225,533
b. Market value (4) - (5)	166,330	161,090	66,576	393,996
7. Amortization of UAL				
a. Actuarial value	8,222	7,963	3,291	19,476
b. Market value (Closed Amortization Years)	14,363 (17 years)	13,911 (17 years)	5,749 (17 years)	34,023
8. Full Funding Limit*				
a. Actuarial value	121,163	129,024	52,082	302,269
b. Market value (3) + (6), not less than zero, with interest to 1/31/2018	198,659	204,079	83,102	485,840
9. Annual Contribution Payable January 31, 2018				
a. Actuarial value	\$ 26,372	\$ 37,220	\$ 14,142	\$ 77,734
b. Market value (3) + (7), with interest to 1/31/2018, but not more than (8)	\$ 33,064	\$ 43,701	\$ 16,820	\$ 93,585
10. Employer rate as of January 1, 2017 based on				
a. Stable Employer Contribution Policy	8.48%	22.63%	24.83%	14.13%
b. Prior Contribution Requirement	6.75%	21.35%	20.87%	12.28%
c. Market Based Prior Contribution Requirement	8.46%	25.06%	24.82%	14.78%

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

Item	General Employees	Police	Fire	Total
1. Active Members	34	-	-	34
2. Covered Compensation	\$ 1,090	\$ -	\$ -	\$ 1,090
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	20	-	-	20
b. Annuitants	-	-	-	-
c. Total	20	-	-	20
5. Actuarial Value of Assets	106	-	-	106
6. Unfunded Accrued Liability (UAL) (4) - (5)	(86)	-	-	(86)
7. Amortization of UAL (Closed Amortization Years)	(7) (17 years)	-	-	(7)
8. Full Funding Limit* (3) + (6), not less than zero, with interest to 1/31/2018	-	-	-	-
9. Annual Contribution Payable January 31, 2018 (3) + (7), with interest to 1/31/2018, but not more than (8)	\$ -	\$ -	\$ -	\$ -

* The full funding limit is the contribution based on the January 1, 2017 valuation which, if made January 31, 2018, would bring the expected assets at that date equal to the expected Actuarial Accrued Liability at that date.

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 1/31/2018	-
8. Annual Contribution Payable January 31, 2018	\$ -

* The full funding limit is the contribution which, if made January 31, 2018, would bring the assets at that date equal to the expected Actuarial Accrued Liability at that date.

Table 5 Member Data

Item	12/31/2015	12/31/2016		
	Total	Vested	Non-Vested	Total
Number of Members				
Active				
General Employes	8,276	5,408	3,009	8,417
Policemen	1,912	1,630	292	1,922
Firemen	794	664	80	744
Total Active Members	10,982	7,702	3,381	11,083
Inactive				
Deferred Retirees/Refunds	3,336			3,416
Deferred Fire & Police Survivors	2			-
Total Inactive Members	3,338			3,416
Benefit Recipients				
Combined Fund				
General Employes	9,190			9,294
Policemen	2,267			2,278
Firemen	1,289			1,300
Combined Fund Subtotal	12,746			12,872
Retirement Fund	17			16
Duty Disability Funds				
General Employes	-			-
Firemen	-			-
Policemen	-			-
Duty Disability Funds Subtotal	-			-
Firemen's Heart & Lung Fund	-			-
Total Benefit Recipients	12,763			12,888
TOTAL Membership	27,083			27,387

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	12/31/2016 Membership		
	Consenters	Others	Total
Number of Members			
Active			
General Employes	8,339	78	8,417
Policemen	1,921	1	1,922
Firemen	744	-	744
Total Active Members	11,004	79	11,083
Inactive			
Deferred Retirees/Refunds	3,277	139	3,416
Deferred Fire & Police Survivorship Fund	-	-	-
Total Inactive Members	3,277	139	3,416
Benefit Recipients			
Combined Fund	12,872		12,872
Retirement Fund		16	16
Duty Disability Funds			
General Employes	-	-	-
Firemen	-	-	-
Policemen	-	-	-
Duty Disability Funds Subtotal	-	-	-
Firemen's Heart & Lung Fund	-	-	-
Total Benefit Recipients	12,872	16	12,888
TOTAL Membership	27,153	234	27,387

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.
- (2) 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

Table 5 Member Data (continued)

Item	12/31/2015	12/31/2016
Annual Earnings		
General Employes	\$ 343,867,000	\$ 361,660,000
Policemen	135,571,000	160,106,000
Firemen	56,364,000	62,184,000
Total Annual Earnings	\$ 535,802,000	\$ 583,950,000
Average Earnings		
General Employes	\$ 41,550	\$ 42,968
Policemen	\$ 70,906	\$ 83,302
Firemen	\$ 70,987	\$ 83,581
Annual Benefit Payments Currently Being Made		
Combined Fund	\$ 328,150,928	\$ 340,633,635
Retirement Fund	\$ 144,736	\$ 138,235
Duty Disability Funds		
General Employes	\$ -	\$ -
Firemen	-	-
Policemen	-	-
Duty Disability Funds Subtotal	\$ -	\$ -
Firemen's Heart & Lung Fund	\$ -	\$ -
Total Benefit Payments	\$ 328,295,664	\$ 340,771,870

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.

Financial Data

Information was obtained from unaudited financial statements prepared by the ERS for the year ended December 31, 2016.

The Global Pension Settlement (GPS) requires transfers between various funds as of January 1, 2016 for members who consented to GPS during 2016. 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, 2017 (in thousands)

Item	Amount
1. Market Value of Assets as of December 31, 2015	\$ 4,752,308
2. Contributions During Year	
a. Member	35,918
b. City to Employers' Reserve Fund	-
c. Employer	74,095
d. Total	110,013
3. Disbursements During Year	
Benefit Payments and Refunds During Year	351,303
4. Investment Return (net of Administrative Expenses)	375,651
5. Market Value of Assets as of December 31, 2016 (1) + (2d) - (3) + (4)	4,886,669
6. Average Market Value During 2016 (1) + ((2d) - (3))/2	\$ 4,631,663
7. Rate of Return Reported by ERS Staff	8.83%

Table 7 Allocations between Non-Consenters Who Consented to Global Settlement During 2016 and Those Who Did Not
Allocation of 1/1/2016 Market Value of Assets in Proportion to 1/1/2016 Accrued Liability
Allocation of 1/31/2017 Employer Contribution in Proportion to 1/1/2016 Covered Compensation (in thousands)

Fund	Allocation of 1/1/2016 Market Value of Assets in Funds for Non-Consenters in Proportion to 1/1/2016 Accrued Liability			Allocation of 1/31/2017 Employer Contribution to Funds for Non-Consenters in Proportion to 1/1/2016 Covered Compensation		
	Consenters in 2016	Others	Total (Audited)	Consenters in 2016	Others	Total
1. Retirement Fund	\$ 2,355	\$ 11,203	\$ 13,558	\$ -	\$ -	\$ -
2. General Employees' Duty Disability Fund	20	94	114	-	-	-
3. Fire & Police Duty Disability Fund	-	-	-	-	-	-
4. Firemen's Heart & Lung Fund	-	-	-	-	-	-
5. Combined Retirement & Disability Fund	<u>131</u>	<u>3,828</u>	<u>3,959</u>	<u>3</u>	<u>142</u>	<u>145</u>
6. Total Funds for Non-Consenters	\$ 2,506	\$ 15,125	\$ 17,631	\$ 3	\$ 142	\$ 145

Notes:

- (1) January 1, 2016 Assets allocated to members who consented to Global Settlement during 2016 are transferred to the Global Combined Fund as of January 1, 2016.
- (2) January 31, 2017 Employer Contributions allocated to members who consented to Global Settlement during 2016 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, 2017 (in thousands)

Item	Total
1. Preliminary Actuarial Value January 1, 2016	\$ 4,899,527
2. Market Value January 1, 2016 (Unaudited)	4,752,308
3. Market Value January 1, 2017 (Unaudited)	4,886,669
4. Contributions	
(a) Member	35,918
(b) Employer	74,095
(c) Total	110,013
5. Benefits and Refunds Paid	351,303
6. Actual Market Return Net of Administrative Expenses	375,651
7. Expected Market Return based on 8-1/4% Interest	382,112
8. Excess of Actual over Expected Return	
(a) 2016	(6,461)
(b) 2015	(374,012)
(c) 2014	(170,983)
(d) 2013	434,858
(e) 2012	196,296
9. Excess Recognized in the Current Valuation*	
(a) 2016	(1,292)
(b) 2015	(74,802)
(c) 2014	(34,197)
(d) 2013	86,972
(e) 2012	39,259
(f) Total	15,940
10. Preliminary Value January 1, 2017 (1) + 4(c) - (5) + (7) + 9(f)	5,056,289
11. Ratio of Preliminary Value to Market Value (10) / (3)	103.47%
12. Ratio Adjusted for 80%--120% Corridor**	103.47%
13. Balance in Employers' Reserve Fund	15,470
14. Market Value Excluding Employers' Reserve Fund (3) - (13)	4,871,199
15. Actuarial Value (12) x (14) + (13)	\$ 5,055,700
16. Rate of Return on Actuarial Value of Assets	8.33%

* The Funding Policy was changed effective with the January 1, 2009 valuation from 3 year smoothing to 5 year smoothing.

** The actuarial value shall not be less than 80% nor greater than 120% of Market Value.

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 beginning on page 47 of this report

Table 9 Allocation of Assets among Funds as of January 1, 2017 (in thousands)

Fund	Market Value	Actuarial Value
1. Global Combined Fund	\$ 4,853,277	\$ 5,021,740
2. Employers' Reserve Fund	\$ 15,470	15,470
3. Retirement Fund	\$ 12,004	12,421
4. General Employees' Duty Disability Fund	\$ 102	106
5. Fire & Police Duty Disability Fund	-	-
6. Firemen's Heart & Lung Fund	-	-
7. Combined Retirement & Disability Fund	\$ 4,243	4,390
8. Securities Lending Fund	1,573	1,573
9. Total all Funds	\$ 4,886,669	\$ 5,055,700

Notes:

(1) Values shown include January 31, 2017 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 remains the same at 8.50%.

Tables 10 through 15 show the required disclosure items for the fiscal year-end 12/31/2016, prepared based on the valuation as of 1/1/2016. Table 16 shows the historical funded status 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, 2016 was determined by rolling forward the total pension liability as of January 1, 2016 to December 31, 2016. 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, 2016
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 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	8.25% for calendar years through 2017, and 8.50% beginning with calendar year 2018
Projected Salary Increases	General City 3.0% - 7.5% Police & Fire 3.0% - 14.4%
Inflation Assumption	3.00%
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-2000 Combined Mortality Table projected nine years using Scale AA. Future generational rates are projected from 2009 based on Scale AA. For duty and ordinary disability retirees, use the RP-2000 Disability Mortality Table. For death in active service, the rates are similar to those used for regular retirees and survivors with a 6-year setback.
Experience Study	The actuarial assumptions used in the December 31, 2016 valuation were based on the results of an actuarial experience study for the period January 1, 2007-December 31, 2011.

The average expected remaining years of service: The period is 4.16 years for the measurement year 2016
The following is a summary of the membership counts and the development of the average expected remaining years of service as of Jan. 1, 2016.

Members as of 12/31/2015

Group	Remaining service lives		Average
	Number	Service	
Retired members and survivors of deceased members currently receiving benefits	12,763	-	
Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits	3,338	-	
Active members	<u>10,982</u>	<u>112,677</u>	
Total	27,083	112,677	4.16

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

Total pension liability	\$	5,312,763
Plan fiduciary net position		<u>4,886,669</u>
Net pension liability (asset)	\$	<u><u>426,094</u></u>

Plan fiduciary net position as a percentage of total pension liability 91.98%

Covered employee payroll \$ 583,950

Net pension liability (asset) as a percentage of covered employee payroll 72.97%

Discount rate: The discount rate used to measure the total pension liability was 8.50 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 8.50 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 Plan's fiduciary net position, a municipal bond rate of 3.71 percent would have been used to discount the benefit payments not covered by the Plan's fiduciary net position. The 3.71 percent rate equals the S&P Municipal Bond 20-Year High Grade Rate Index (yield to maturity) at Dec. 30, 2016

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 8.50 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 (7.50 percent) or 1-percentage-point higher (9.50 percent) than the current rate:

	1% Decrease (7.50%)	Current Discount (8.50%)	1% Increase (9.50%)
ERS's net pension liability	\$ <u>1,004,645</u>	<u>426,094</u>	<u>(61,855)</u>

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 3.0 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
2017	8.25%	4,886,669,000	31,023,539	75,740,421	362,800,076	8,096,000	392,254,743	5,014,791,627
2018	8.50%	5,014,791,627	29,778,143	83,987,484	379,196,015	8,338,880	414,622,094	5,155,644,452
2019	8.50%	5,155,644,452	28,560,102	82,727,149	395,823,843	8,589,046	425,771,939	5,288,290,753
2020	8.50%	5,288,290,753	27,309,115	81,364,843	411,853,062	8,846,718	436,243,617	5,412,508,548
2021	8.50%	5,412,508,548	26,121,612	80,070,373	428,074,182	9,112,119	445,995,968	5,527,510,200
2022	8.50%	5,527,510,200	24,923,473	78,682,080	445,022,316	9,385,483	454,929,272	5,631,637,226
2023	8.50%	5,631,637,226	23,670,631	77,198,280	460,796,206	9,667,047	462,981,405	5,725,024,288
2024	8.50%	5,725,024,288	22,453,082	75,812,987	475,825,497	9,957,059	470,157,614	5,807,665,415
2025	8.50%	5,807,665,415	21,293,463	74,603,960	489,703,706	10,255,771	476,478,923	5,880,082,285
2026	8.50%	5,880,082,285	20,173,672	73,518,553	502,929,952	10,563,444	481,965,444	5,942,246,558
2027	8.50%	5,942,246,558	19,084,912	72,523,254	518,253,271	10,880,347	486,496,126	5,991,217,232
2028	8.50%	5,991,217,232	17,975,048	71,508,563	529,899,521	11,206,757	490,059,501	6,029,654,065
2029	8.50%	6,029,654,065	16,871,894	70,544,974	541,024,586	11,542,960	492,751,692	6,057,255,079
2030	8.50%	6,057,255,079	15,801,902	69,790,320	552,233,688	11,889,249	494,529,126	6,073,253,490
2031	8.50%	6,073,253,490	14,737,156	69,063,043	561,848,518	12,245,926	495,389,041	6,078,348,285
2032	8.50%	6,078,348,285	13,686,421	68,389,269	569,735,220	12,613,304	495,398,009	6,073,473,459
2033	8.50%	6,073,473,459	12,587,184	67,607,341	579,438,936	12,991,703	494,475,209	6,055,712,554
2034	8.50%	6,055,712,554	11,444,230	66,665,009	586,797,347	13,381,454	492,547,611	6,026,190,602
2035	8.50%	6,026,190,602	10,414,275	66,090,654	595,045,563	13,782,898	489,602,451	5,983,469,522
2036	8.50%	5,983,469,522	9,463,586	65,669,663	597,914,827	14,196,385	485,773,346	5,932,264,904
2037	8.50%	5,932,264,904	8,523,576	63,941,566	603,201,705	14,622,277	481,064,766	5,867,970,831
2038	8.50%	5,867,970,831	7,652,925	62,369,650	606,553,498	15,060,945	475,334,866	5,791,713,829
2039	8.50%	5,791,713,829	6,815,372	60,838,088	607,403,735	15,512,773	468,696,996	5,705,147,778
2040	8.50%	5,705,147,778	5,981,034	59,288,199	608,188,930	15,978,156	461,184,402	5,607,434,326
2041	8.50%	5,607,434,326	5,196,407	57,770,409	606,842,003	16,457,501	452,817,778	5,499,919,416
2042	8.50%	5,499,919,416	4,427,028	56,214,897	604,621,940	16,951,226	443,653,573	5,382,641,748
2043	8.50%	5,382,641,748	3,735,379	54,785,534	601,265,482	17,459,763	433,715,864	5,256,153,280
2044	8.50%	5,256,153,280	3,125,579	53,469,741	596,999,053	17,983,556	423,041,569	5,120,807,559
2045	8.50%	5,120,807,559	2,557,933	52,220,918	590,095,361	18,523,062	411,730,461	4,978,698,448
2046	8.50%	4,978,698,448	2,031,243	50,957,669	581,724,276	19,078,754	399,907,268	4,830,791,598
2047	8.50%	4,830,791,598	1,573,786	49,721,498	572,813,633	19,651,117	387,617,584	4,677,239,717
2048	8.50%	4,677,239,717	1,201,163	48,537,253	562,573,806	20,240,650	374,909,644	4,519,073,320
2049	8.50%	4,519,073,320	904,167	47,330,884	549,781,538	20,847,870	361,919,472	4,358,598,436
2050	8.50%	4,358,598,436	670,365	46,145,586	536,702,158	21,473,306	348,748,088	4,195,987,010
2051	8.50%	4,195,987,010	494,920	44,920,137	522,554,942	22,117,505	335,440,457	4,032,170,077
2052	8.50%	4,032,170,077	371,319	43,682,914	507,632,355	22,781,030	322,064,193	3,867,875,117

**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
2053	8.50%	3,867,875,117	270,249	42,407,574	491,861,966	23,464,461	308,681,819	3,703,908,333
2054	8.50%	3,703,908,333	194,664	43,353,062	475,525,812	24,168,395	295,445,983	3,543,207,834
2055	8.50%	3,543,207,834	137,192	44,378,906	458,775,281	24,893,447	282,508,679	3,386,563,883
2056	8.50%	3,386,563,883	91,234	45,417,670	441,651,603	25,640,250	269,932,155	3,234,713,088
2057	8.50%	3,234,713,088	57,324	46,517,898	424,242,871	26,409,458	257,777,335	3,088,413,316
2058	8.50%	3,088,413,316	34,702	47,709,187	406,595,946	27,201,742	246,107,845	2,948,467,362
2059	8.50%	2,948,467,362	22,397	48,957,520	388,837,571	28,017,794	234,985,019	2,815,576,933
2060	8.50%	2,815,576,933	14,741	50,244,415	371,065,032	28,858,328	224,463,311	2,690,376,040
2061	8.50%	2,690,376,040	9,328	51,563,084	353,345,523	29,724,078	214,593,333	2,573,472,184
2062	8.50%	2,573,472,184	4,715	52,932,923	335,739,444	30,615,800	205,424,887	2,465,479,465
2063	8.50%	2,465,479,465	2,443	54,356,156	318,316,575	31,534,274	197,007,334	2,366,994,549
2064	8.50%	2,366,994,549	695	55,845,270	301,122,038	32,480,302	189,389,891	2,278,628,065
2065	8.50%	2,278,628,065	324	57,382,361	284,203,393	33,454,711	182,621,680	2,200,974,326
2066	8.50%	2,200,974,326	214	58,954,973	267,587,214	34,458,353	176,751,477	2,134,635,424
2067	8.50%	2,134,635,424	106	60,574,710	251,281,347	35,492,103	171,830,569	2,080,267,358
2068	8.50%	2,080,267,358	0	62,251,659	235,299,028	36,556,866	167,914,545	2,038,577,668
2069	8.50%	2,038,577,668	0	63,982,585	219,660,851	37,653,572	165,062,499	2,010,308,329
2070	8.50%	2,010,308,329	0	65,754,044	204,362,055	38,783,179	163,337,082	1,996,254,220
2071	8.50%	1,996,254,220	0	67,572,584	189,396,575	39,946,675	162,806,355	1,997,289,910
2072	8.50%	1,997,289,910	0	69,432,486	174,765,837	41,145,075	163,544,309	2,014,355,792
2073	8.50%	2,014,355,792	0	71,343,574	160,476,962	42,379,427	165,630,948	2,048,473,925
2074	8.50%	2,048,473,925	0	73,310,831	146,551,527	43,650,810	169,152,395	2,100,734,814
2075	8.50%	2,100,734,814	0	75,314,904	133,022,043	44,960,334	174,199,092	2,172,266,432
2076	8.50%	2,172,266,432	0	77,360,284	119,948,195	46,309,144	180,864,522	2,264,233,899
2077	8.50%	2,264,233,899	0	79,452,796	107,405,876	47,698,419	189,244,693	2,377,827,093
2078	8.50%	2,377,827,093	0	81,598,683	95,463,089	49,129,371	199,438,067	2,514,271,383
2079	8.50%	2,514,271,383	0	83,803,040	84,183,648	50,603,252	211,546,253	2,674,833,775
2080	8.50%	2,674,833,775	0	86,056,183	73,617,690	52,121,350	225,674,349	2,860,825,268
2081	8.50%	2,860,825,268	0	88,362,427	63,814,732	53,684,991	241,931,813	3,073,619,785
2082	8.50%	3,073,619,785	0	90,725,896	54,789,346	55,295,540	260,434,925	3,314,695,720
2083	8.50%	3,314,695,720	0	93,154,923	46,565,151	56,954,406	281,308,639	3,585,639,724
2084	8.50%	3,585,639,724	0	95,656,700	39,157,557	58,663,039	304,687,411	3,888,163,240
2085	8.50%	3,888,163,240	0	98,225,599	32,555,069	60,422,930	330,716,898	4,224,127,739
2086	8.50%	4,224,127,739	0	100,861,022	26,752,419	62,235,618	359,555,460	4,595,556,185
2087	8.50%	4,595,556,185	0	103,568,172	21,723,645	64,102,686	391,376,304	5,004,674,330
2088	8.50%	5,004,674,330	0	106,356,693	17,417,168	66,025,767	426,371,153	5,453,959,241
2089	8.50%	5,453,959,241	0	109,230,110	13,782,875	68,006,540	464,752,765	5,946,152,702
2090	8.50%	5,946,152,702	0	112,188,956	10,758,944	70,046,736	506,756,769	6,484,292,747
2091	8.50%	6,484,292,747	0	115,236,665	8,283,372	72,148,138	552,644,103	7,071,742,005

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

Actuarial Present value of Projected Benefit payments										8.50%
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 8.25-8.5%*	Unfunded Portion at 3.71%	Using a Single Discount Rate of	
12/31/	i	(a)	(b)	(c)	(d)	(e)	(f)= (d)/(1+i)^(a)	(g)= (e)/(1+3.71%)^(a)	(h)=(c)/(1+8.5%)^(a)	
2017	8.25%	1	4,886,669,000	362,800,076	362,800,076	0	335,150,186	0	334,381,473	
2018	8.50%	2	5,014,791,627	379,196,015	379,196,015	0	322,110,060	0	322,116,847	
2019	8.50%	3	5,155,644,452	395,823,843	395,823,843	0	309,893,692	0	309,903,486	
2020	8.50%	4	5,288,290,753	411,853,062	411,853,062	0	297,182,579	0	297,195,101	
2021	8.50%	5	5,412,508,548	428,074,182	428,074,182	0	284,688,775	0	284,703,771	
2022	8.50%	6	5,527,510,200	445,022,316	445,022,316	0	272,774,244	0	272,791,485	
2023	8.50%	7	5,631,637,226	460,796,206	460,796,206	0	260,315,919	0	260,335,116	
2024	8.50%	8	5,725,024,288	475,825,497	475,825,497	0	247,747,799	0	247,768,678	
2025	8.50%	9	5,807,665,415	489,703,706	489,703,706	0	234,998,855	0	235,021,136	
2026	8.50%	10	5,880,082,285	502,929,952	502,929,952	0	222,438,582	0	222,462,016	
2027	8.50%	11	5,942,246,558	518,253,271	518,253,271	0	211,258,860	0	211,283,342	
2028	8.50%	12	5,991,217,232	529,899,521	529,899,521	0	199,084,142	0	199,109,310	
2029	8.50%	13	6,029,654,065	541,024,586	541,024,586	0	187,339,952	0	187,365,609	
2030	8.50%	14	6,057,255,079	552,233,688	552,233,688	0	176,240,843	0	176,266,837	
2031	8.50%	15	6,073,253,490	561,848,518	561,848,518	0	165,262,062	0	165,288,178	
2032	8.50%	16	6,078,348,285	569,735,220	569,735,220	0	154,453,323	0	154,479,358	
2033	8.50%	17	6,073,473,459	579,438,936	579,438,936	0	144,777,851	0	144,803,780	
2034	8.50%	18	6,055,712,554	586,797,347	586,797,347	0	135,130,335	0	135,155,961	
2035	8.50%	19	6,026,190,602	595,045,563	595,045,563	0	126,294,720	0	126,320,001	
2036	8.50%	20	5,983,469,522	597,914,827	597,914,827	0	116,961,939	0	116,986,584	
2037	8.50%	21	5,932,264,904	603,201,705	603,201,705	0	108,752,202	0	108,776,263	
2038	8.50%	22	5,867,970,831	606,553,498	606,553,498	0	100,789,403	0	100,812,764	
2039	8.50%	23	5,791,713,829	607,403,735	607,403,735	0	93,023,672	0	93,046,214	
2040	8.50%	24	5,705,147,778	608,188,930	608,188,930	0	85,846,935	0	85,868,642	
2041	8.50%	25	5,607,434,326	606,842,003	606,842,003	0	78,946,372	0	78,967,166	
2042	8.50%	26	5,499,919,416	604,621,940	604,621,940	0	72,495,443	0	72,515,302	
2043	8.50%	27	5,382,641,748	601,265,482	601,265,482	0	66,445,158	0	66,464,060	
2044	8.50%	28	5,256,153,280	596,999,053	596,999,053	0	60,805,235	0	60,823,173	
2045	8.50%	29	5,120,807,559	590,095,361	590,095,361	0	55,393,626	0	55,410,551	
2046	8.50%	30	4,978,698,448	581,724,276	581,724,276	0	50,329,781	0	50,345,689	
2047	8.50%	31	4,830,791,598	572,813,633	572,813,633	0	45,676,357	0	45,691,276	
2048	8.50%	32	4,677,239,717	562,573,806	562,573,806	0	41,345,465	0	41,359,405	
2049	8.50%	33	4,519,073,320	549,781,538	549,781,538	0	37,239,924	0	37,252,873	
2050	8.50%	34	4,358,598,436	536,702,158	536,702,158	0	33,505,974	0	33,517,977	
2051	8.50%	35	4,195,987,010	522,554,942	522,554,942	0	30,067,071	0	30,078,159	
2052	8.50%	36	4,032,170,077	507,632,355	507,632,355	0	26,920,227	0	26,930,438	

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

Actuarial Present value of Projected Benefit payments										8.50%
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 8.25-8.5%*	Unfunded Portion at 3.71%	Using a Single Discount Rate of	
12/31/	i	(a)	(b)	(c)	(d)	(e)	(f)= (d)/(1+i)^(a)	(g)= (e)/(1+3.71%)^(a)	(h)=(c)/(1+8.5%)^(a)	
2053	8.50%	37	3,867,875,117	491,861,966	491,861,966	0	24,040,469	0	24,049,841	
2054	8.50%	38	3,703,908,333	475,525,812	475,525,812	0	21,421,212	0	21,429,789	
2055	8.50%	39	3,543,207,834	458,775,281	458,775,281	0	19,047,598	0	19,055,425	
2056	8.50%	40	3,386,563,883	441,651,603	441,651,603	0	16,900,139	0	16,907,262	
2057	8.50%	41	3,234,713,088	424,242,871	424,242,871	0	14,962,194	0	14,968,658	
2058	8.50%	42	3,088,413,316	406,595,946	406,595,946	0	13,216,426	0	13,222,275	
2059	8.50%	43	2,948,467,362	388,837,571	388,837,571	0	11,649,022	0	11,654,300	
2060	8.50%	44	2,815,576,933	371,065,032	371,065,032	0	10,245,698	0	10,250,448	
2061	8.50%	45	2,690,376,040	353,345,523	353,345,523	0	8,992,105	0	8,996,369	
2062	8.50%	46	2,573,472,184	335,739,444	335,739,444	0	7,874,707	0	7,878,524	
2063	8.50%	47	2,465,479,465	318,316,575	318,316,575	0	6,881,158	0	6,884,566	
2064	8.50%	48	2,366,994,549	301,122,038	301,122,038	0	5,999,501	0	6,002,535	
2065	8.50%	49	2,278,628,065	284,203,393	284,203,393	0	5,218,817	0	5,221,512	
2066	8.50%	50	2,200,974,326	267,587,214	267,587,214	0	4,528,751	0	4,531,137	
2067	8.50%	51	2,134,635,424	251,281,347	251,281,347	0	3,919,617	0	3,921,723	
2068	8.50%	52	2,080,267,358	235,299,028	235,299,028	0	3,382,780	0	3,384,633	
2069	8.50%	53	2,038,577,668	219,660,851	219,660,851	0	2,910,560	0	2,912,185	
2070	8.50%	54	2,010,308,329	204,362,055	204,362,055	0	2,495,712	0	2,497,132	
2071	8.50%	55	1,996,254,220	189,396,575	189,396,575	0	2,131,751	0	2,132,987	
2072	8.50%	56	1,997,289,910	174,765,837	174,765,837	0	1,812,972	0	1,814,042	
2073	8.50%	57	2,014,355,792	160,476,962	160,476,962	0	1,534,326	0	1,535,247	
2074	8.50%	58	2,048,473,925	146,551,527	146,551,527	0	1,291,414	0	1,292,203	
2075	8.50%	59	2,100,734,814	133,022,043	133,022,043	0	1,080,361	0	1,081,033	
2076	8.50%	60	2,172,266,432	119,948,195	119,948,195	0	897,862	0	898,429	
2077	8.50%	61	2,264,233,899	107,405,876	107,405,876	0	740,993	0	741,469	
2078	8.50%	62	2,377,827,093	95,463,089	95,463,089	0	607,004	0	607,401	
2079	8.50%	63	2,514,271,383	84,183,648	84,183,648	0	493,349	0	493,677	
2080	8.50%	64	2,674,833,775	73,617,690	73,617,690	0	397,630	0	397,898	
2081	8.50%	65	2,860,825,268	63,814,732	63,814,732	0	317,679	0	317,896	
2082	8.50%	66	3,073,619,785	54,789,346	54,789,346	0	251,382	0	251,556	
2083	8.50%	67	3,314,695,720	46,565,151	46,565,151	0	196,910	0	197,049	
2084	8.50%	68	3,585,639,724	39,157,557	39,157,557	0	152,614	0	152,723	
2085	8.50%	69	3,888,163,240	32,555,069	32,555,069	0	116,941	0	117,026	
2086	8.50%	70	4,224,127,739	26,752,419	26,752,419	0	88,569	0	88,634	
2087	8.50%	71	4,595,556,185	21,723,645	21,723,645	0	66,286	0	66,336	
2088	8.50%	72	5,004,674,330	17,417,168	17,417,168	0	48,982	0	49,019	
2089	8.50%	73	5,453,959,241	13,782,875	13,782,875	0	35,725	0	35,752	
2090	8.50%	74	5,946,152,702	10,758,944	10,758,944	0	25,702	0	25,722	
2091	8.50%	75	6,484,292,747	8,283,372	8,283,372	0	18,238	0	18,252	

*8.25% through 2017, and 8.50% beginning with calendar year 2018

**There is no crossover point in this analysis.

After 2076, the projected Investment earnings will exceed the projected benefit payments and administrative expense

Table 13 Schedule of Changes in the Net Pension Liability

Total pension liability		
Service cost	\$	70,377
Interest		430,745
Changes in benefit items		0
Differences between expected and actual experience		(9,921)
Changes of assumptions		0
Benefit payments including refunds of member contributions		<u>(351,303)</u>
Net change in total pension liability		139,898
Total pension liability - beginning		<u>5,172,865</u>
Total pension liability - ending	\$	<u><u>5,312,763</u></u>
Plan fiduciary net position		
Contributions - employer	\$	74,095
Contributions - member		35,918
Net investment income		383,747
Benefit payments, including refunds of member contributions		<u>(351,303)</u>
Administrative expense		(8,096)
Other		0
Net change in plan fiduciary net pension		<u>134,361</u>
Plan fiduciary net position - beginning		<u>4,752,308</u>
Plan fiduciary net position - ending	\$	<u><u>4,886,669</u></u>
Net pension liability (asset) - ending	\$	<u><u>426,094</u></u>

Table 14 Schedule of Contributions

Last 10 Fiscal Years (Dollar Amounts in thousands)	Fiscal Year Ending December 31									
	<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>	<u>2007</u>
Actuarially Determined Contributions	\$ 74,095	\$ 72,198	\$ 72,844	\$ 79,533	\$ 73,159	\$ 0	\$ 0	\$ 60,098	\$ 0	\$ 0
Contributions in relation to the actuarially determined contribution	74,095	72,198	72,844	79,533	73,159	0	0	60,098	0	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	\$ 583,950	\$ 535,802	\$ 529,939	\$ 521,651	\$ 523,738	\$ 525,181	\$ 538,218	\$ 553,846	\$ 536,558	\$ 532,412
Contributions as a percentage of covered-employee payroll	12.69%	13.47%	13.75%	15.25%	13.97%	0.00%	0.00%	10.85%	0.00%	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, 2016	Measurement Year Ending Dec. 31, 2015
Pension Expense		
Service cost	\$ 70,377	\$ 70,500
Interest cost on total pension liability	430,745	418,874
Projected earnings on plan investments	(381,778)	(398,907)
Contributions - Member	(35,918)	(49,553)
Administrative expense	8,096	9,686
Current period	-	-
Plan changes	-	-
Changes in assumptions	-	(1,240)
Differences between expected and actual liab. experience	(2,385)	(7,152)
Difference between projected and actual earnings	(394)	72,786
Recognition of prior years'	-	-
Deferred outflows	104,727	31,941
Deferred inflows	(8,392)	-
Other changes in fiduciary net position	-	-
Pension expense	185,078	146,935

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	Outflows	Inflows	Total
Amount Established	-	(5,206)	-			
Recognition Period	4.09	4.20	4.16			
Annual Recognition	-	(1,240)	-			
Amount Recognized						
2014	-	-	-	-	-	-
2015	-	(1,240)	-	-	(1,240)	(1,240)
2016	-	(1,240)	-	-	(1,240)	(1,240)
2017	-	(1,240)	-	-	(1,240)	(1,240)
2018	-	(1,240)	-	-	(1,240)	(1,240)
2019	-	(246)	-	-	(246)	(246)
2020	-	-	-	-	-	-
Deferred Balance						
2014	-	-	-	-	-	-
2015	-	(3,966)	-	-	(3,966)	(3,966)
2016	-	(2,726)	-	-	(2,726)	(2,726)
2017	-	(1,486)	-	-	(1,486)	(1,486)
2018	-	(246)	-	-	(246)	(246)
2019	-	-	-	-	-	-

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	Outflows	Inflows	Total
Amount Established	-	(30,036)	(9,921)			
Recognition Period	4.09	4.20	4.16			
Annual Recognition	-	(7,152)	(2,385)			
Amount Recognized						
2014	-			-	-	-
2015	-	(7,152)	-	-	(7,152)	(7,152)
2016	-	(7,152)	(2,385)	-	(9,537)	(9,537)
2017	-	(7,152)	(2,385)	-	(9,537)	(9,537)
2018	-	(7,152)	(2,385)	-	(9,537)	(9,537)
2019	-	(1,428)	(2,385)	-	(3,813)	(3,813)
2020	-	-	(381)	-	(381)	(381)
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)	-	(13,731)	(13,731)
2018	-	(1,428)	(2,766)	-	(4,194)	(4,194)
2019	-	-	(381)	-	(381)	(381)
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	Outflows	Inflows	Total
Amount Established	159,705	363,926	(1,969)			
Recognition Period	5.00	5.00	5.00			
Annual Recognition	31,941	72,786	(394)			
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)	104,727	(394)	104,333
2018	31,941	72,786	(394)	104,727	(394)	104,333
2019	-	72,782	(394)	72,782	(394)	72,388
2020	-	-	(393)	-	(393)	(393)
2021	-	-	-	-	-	-
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)	177,509	(1,181)	176,328
2018	-	72,782	(787)	72,782	(787)	71,995
2019	-	-	(393)	-	(393)	(393)
2020	-	-	-	-	-	-

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

Entity	Deferred Outflows of Resources							Deferred Inflows of Resources					Pension Expense		
	12/31/2015	12/31/2016	Difference Between Expected and Actual Experience	Net Difference Between Projected and Actual Earnings on Pension Plan Investments	Changes of Assumptions	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 Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Pension Expense	Net Amortization Deferred Amount from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Pension Expense
	Net pension liability (asset)	Net Pension Liability (asset)													
General City	84,362	86,362	-	57,205	-	96	57,301	4,716	320	552	2	5,590	37,512	29	37,541
Water Department	7,652	7,961	-	5,273	-	28	5,301	435	29	51	-	515	3,458	10	3,468
School Board	53,736	56,030	-	37,113	-	172	37,285	3,060	207	358	31	3,656	24,337	39	24,376
Milwaukee Area Technical College	28	-	-	-	-	-	-	-	-	-	3	3	-	(1)	(1)
Sewerage Commission	8,075	8,222	-	5,446	-	5	5,451	449	30	53	-	532	3,571	2	3,573
Veolia	2,006	1,674	-	1,109	-	7	1,116	91	6	11	39	147	727	(9)	718
Wisconsin Center	1,873	1,953	-	1,294	-	8	1,302	107	7	12	-	126	848	3	851
Housing Authority	4,904	4,785	-	3,170	-	8	3,178	261	18	31	20	330	2,079	(2)	2,077
Redevelopment Authority	521	398	-	263	-	2	265	22	1	3	14	40	173	(3)	170
Policemen	176,750	177,629	-	117,658	-	-	117,658	9,700	657	1,136	214	11,707	77,155	(78)	77,077
Firemen	80,650	81,079	-	53,705	-	65	53,770	4,427	300	519	68	5,314	35,218	10	35,228
Total for All Entities	\$ 420,557	426,093	-	282,236	-	391	282,627	23,268	1,575	2,726	391	27,960	185,078	0	185,078

Table 16 January 1, 2017 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	\$ 5,247,273	\$ 5,021,740	\$ 4,853,277	\$ 225,533	\$ 393,996	95.7%	92.5%
2. Employers' Reserve Fund	-	15,470	15,470	(15,470)	(15,470)	N/A	N/A
3. Retirement Fund	7,235	12,421	12,004	(5,186)	(4,769)	171.7%	165.9%
4. General Employes' Duty Disability Fund	20	106	102	(86)	(82)	530.0%	510.0%
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	4,772	4,390	4,243	382	529	92.0%	88.9%
8. Securities Lending Fund	-	1,573	1,573	(1,573)	(1,573)	N/A	N/A
8. Total All Funds	\$ 5,259,300	\$ 5,055,700	\$ 4,886,669	\$ 203,600	\$ 372,631	96.1%	92.9%

Table 17 Actuarial Balance Sheet for Members at January 1, 2017 (in thousands)

Item	2016	2017
Assets:		
Market Value of Assets	\$ 4,752,308	\$ 4,886,669
Market Adjustment	146,847	169,031
Actuarial Value of Assets	\$ 4,899,155	\$ 5,055,700
Present Value of Future Anticipated Contributions	165,986	203,600
Financial Resources for Actuarial Accrued Liability	\$ 5,065,141	\$ 5,259,300
Liabilities:		
Actuarial Accrued Liability		
Annuitants	\$3,462,308	\$ 3,512,367
Inactive Members		
Member Contributions	68,215	81,654
Employer Financed Portion	21,778	31,490
Active Members		
Member Contributions	512,752	508,005
Employer Financed Portion	1,000,088	1,125,784
Total Liabilities	\$5,065,141	\$ 5,259,300

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: Projected Unit Credit

Under the Projected Unit Credit Method, the Normal Cost for a year is the Actuarial Present Value (APV) of the benefits expected to be earned in that year, based on pay projected to separation from ERS. The Actuarial Accrued Liability (AAL) is the APV of all benefits earned to the beginning of the year. 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 over a period equal to the future working lifetime of Employees covered by the Funds from the valuation date as a level dollar amount.

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). We then develop an actual market return (6) and an expected market return based on 8.25% (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 8.25% (7) and the current year's amortization (9). The preliminary actuarial value (10) divided by the market value at year end (3) results in a ratio (11). The ratio shall not be less than 80% or more than 120% of the market value. If it is, a final adjustment to the preliminary actuarial value (9) will be made accordingly (12) to develop the final actuarial value (15).

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

Amortization Method

Closed; Level Percent of Pay; Pay assumed to grow 3% per year

Remaining Amortization Period

17 years as of January 1, 2017

Other Considerations

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

Actuarial Assumptions

Adopted Effective January 1, 2013 (except as noted)

Interest Rate and Inflation

Interest: 8.50% return for calendar years 2000 through 2012, 8.25% for calendar years 2013 through 2017, and 8.50% beginning with calendar year 2018 (adopted 1/1/2013)

Inflation: 3.0% per annum (adopted 1/1/2003)

Salary Increases

Career average of 3.8% per annum for general Employees and 4.5% per annum for police and fire, compounded annually (adopted 1/1/2013). Representative values are as follows:

Age	General	Fire and Police
25	6.9%	10.5%
30	5.8	6.7
35	4.8	4.8
40	3.9	3.7
45	3.3	3.3
50	3.0	3.1
55	3.0	3.0
60	3.0	3.0
65	3.0	3.0

Annual increases of 3% per annum are 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	
		Males	Females		Not in Combined Fund	In Combined Fund
42						10%
43						10
44						16
45						16
46						16
47						16
48				5%		16
49				8		19
50				8		20
51				10	44%	20
52				15	44	25
53				15	24	25
54		40%	26%	25	24	25
55	2%	50	30	25	24	25
56	2	35	20	25	40	25
57	2	32	18	25	35	25
58	2	30	28	30	35	25
59	2	22	23	35	35	25
60		21	19	45	35	25
61		25	20	50	35	25
62		30	25	50	50	50
63		26	19	100	100	100
64		20	19	100	100	100
65		23	25	100	100	100
66		23	23	100	100	100
67		20	19	100	100	100
68		20	13	100	100	100
69		20	13	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% (Adopted 1/1/1998)

Police & Fire: 10% In addition, amongst firemen, 25% of duty deaths are assumed to occur under the Heart and Lung Law. (Adopted 1/1/2003)

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	20.0%	N/A	N/A	1998
Police other than MPA	75.0%	5.0%	N/A	2008
MPA enrolled on or before 4/18/2005	75.0%	5.0%	N/A	2008
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 Employes:	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 Employes, Firemen, and Policemen

Age	Less than 5 Years' Service		At least 5 Years' Service	
	Males	Females	Males	Females
General Employes				
20	13.55%	18.50%	-	-
25	12.25	18.55	9.75%	11.00%
30	8.70	12.90	5.32	6.50
35	8.20	12.00	5.53	5.59
40	6.75	8.00	3.47	6.50
45	7.00	7.10	2.30	3.59
50	6.40	6.60	1.83	2.60
55	5.25	6.00	1.53	2.80
60	-	-	-	-
Fire and Police				
20	8.20%	7.40%	-	-
25	3.10	6.20	1.92%	3.33%
30	2.20	5.90	1.62	4.77
35	2.70	5.30	1.57	2.69
40	4.40	4.40	1.29	1.39
45	5.40	4.40	1.54	2.18
50	8.80	4.40	5.79	9.57
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 Employes, Firemen, and Policemen

Age	Disability	Remarriage
General Employes		
20	0.050%	14.46%
25	0.050	9.45
30	0.060	5.94
35	0.077	4.02
40	0.146	2.80
45	0.180	1.75
50	0.284	0.96
55	0.585	0.26
60	0.077	-
65	0.200	-
Fire		
20	0.06%	14.46%
25	0.136	9.45
30	0.28	5.94
35	0.76	4.02
40	1.2	2.80
45	1.2	1.75
50	1.35	0.96
55	1.35	0.26
60	1.35	-
65	1.35	-
Police		
20	0.03%	14.46%
25	0.03	9.45
30	0.1	5.94
35	0.17	4.02
40	0.21	2.80
45	0.21	1.75
50	0.21	0.96
55	0.21	0.26
60	0.21	-
65	0.21	-

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

For regular retirees and for survivors, the RP-2000 Combined Mortality Table projected nine years using Scale AA. Future generational rates are projected from 2009 based on Scale AA. For duty and ordinary disability retirees, use the RP-2000 Disability Mortality Table. For death in active service, the rates are similar to those used for regular retirees and survivors with a 6-year setback.

Age	Disability Recovery	
	Males	Females
20	14.950%	14.950%
25	9.940	9.940
30	4.880	4.880
35	6.920	6.920
40	2.830	2.830
45	1.700	1.700
50	0.450	0.450
55	--	--

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 employe prior to January 1, 1938, or prior to an amendment which made the employe eligible for membership in the ERS. Membership service means service as an employe 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.

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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 employe 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 employe and/or Playground Laborer-Seasonal employe (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 Employes represented by Local 950, OEIU, also includes site differential pay.

Final Average Salary

- a) For general Employes, 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 Employes enrolled prior to January 1, 2014 and all Fire and Police Employes), 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 Employes and age 57 for policemen and firemen.
- b) General Employes 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) Policeman 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 employes, 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 employes 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, if 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 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 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 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, benefits for the named beneficiary will be deferred until the date the fireman would have attained age 49. 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 Employes	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 employes 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 MPSO 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 employe 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 employe 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 employe 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 1/1/2000, 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, 2016**

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 25	28 \$35,094	1 \$35,397								29 \$35,104
25-29	145 \$43,615	25 \$45,037	1 \$41,530							171 \$43,810
30-34	204 \$46,785	77 \$52,576	23 \$50,417	1 \$52,924						305 \$48,541
35-39	178 \$48,432	84 \$55,636	72 \$59,876	34 \$52,230	1 \$42,425					369 \$52,639
40-44	112 \$45,223	73 \$53,812	52 \$63,175	78 \$57,098	14 \$60,753					329 \$53,442
45-49	127 \$44,932	94 \$54,408	84 \$55,227	117 \$58,919	77 \$63,041	22 \$56,830	3 \$49,821			524 \$54,594
50-54	90 \$45,000	68 \$49,427	68 \$50,721	92 \$53,705	94 \$58,287	94 \$65,794	37 \$63,730	20 \$55,747		563 \$54,951
55-59	77 \$45,412	56 \$50,360	52 \$55,751	78 \$58,329	79 \$66,626	137 \$64,351	91 \$68,409	42 \$62,041	3 \$71,850	615 \$59,986
60-64	26 \$48,971	33 \$46,422	36 \$57,195	42 \$52,753	51 \$64,272	42 \$69,997	56 \$70,155	17 \$82,640	10 \$60,138	313 \$61,446
Over 64	10 \$48,267	24 \$50,027	29 \$55,925	20 \$56,660	12 \$59,264	15 \$69,430	9 \$73,891	4 \$72,969	15 \$74,566	138 \$59,901
Total	997 \$45,683	535 \$52,037	417 \$56,272	462 \$56,310	328 \$62,434	310 \$65,265	196 \$67,992	83 \$65,270	28 \$69,122	3,356 \$54,903

**Active Membership – Water Department
Number and Average Annual Salary
As of December 31, 2016**

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 25	1 \$42,289									1 \$42,289
25-29	12 \$46,004	2 \$47,062								14 \$46,156
30-34	20 \$47,047	4 \$51,995	1 \$54,422							25 \$48,134
35-39	14 \$45,335	8 \$58,662	8 \$59,299	2 \$62,426	1 \$71,950					33 \$53,793
40-44	13 \$46,507	8 \$49,645	6 \$57,541	5 \$70,124						32 \$53,050
45-49	8 \$45,221	13 \$49,289	7 \$59,308	6 \$59,809	7 \$61,575	4 \$66,501				45 \$54,968
50-54	9 \$44,865	14 \$47,495	12 \$57,737	6 \$57,665	8 \$63,022	11 \$63,203	7 \$71,400	1 \$95,881		68 \$57,392
55-59	7 \$45,211	9 \$48,683		2 \$56,527	8 \$55,472	14 \$67,060	17 \$71,883	1 \$49,911		58 \$60,728
60-64	6 \$50,520	2 \$41,430	3 \$59,385	2 \$58,150	3 \$80,553	5 \$74,352	4 \$76,274	3 \$65,813	1 \$89,407	29 \$65,027
Over 64		2 \$45,635	1 \$72,093	1 \$42,368	1 \$50,876		2 \$90,666			7 \$62,563
Total	90 \$46,219	62 \$49,783	38 \$58,745	24 \$60,501	28 \$62,267	34 \$66,819	30 \$73,608	5 \$68,646	1 \$89,407	312 \$56,368

**Active Membership – School Board
Number and Average Annual Salary
As of December 31, 2016**

Age	Years of Service									Total	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+		
Under 25	101 \$25,169										101 \$25,169
25-29	393 \$25,392	5 \$31,693									398 \$25,471
30-34	324 \$26,757	50 \$34,609	6 \$29,543								380 \$27,834
35-39	293 \$28,460	89 \$28,660	29 \$36,088	19 \$41,598	2 \$40,791						432 \$29,648
40-44	248 \$28,168	95 \$25,424	55 \$30,541	31 \$45,029	8 \$45,791						437 \$29,389
45-49	223 \$28,119	104 \$26,051	113 \$28,061	78 \$33,788	43 \$40,861	14 \$52,100					575 \$30,039
50-54	186 \$26,349	113 \$31,220	107 \$23,964	128 \$30,110	98 \$39,518	44 \$47,042	16 \$56,060	3 \$55,514			695 \$31,443
55-59	163 \$28,464	78 \$22,842	111 \$23,284	135 \$28,143	107 \$37,119	52 \$42,739	23 \$55,254	17 \$47,202	1 \$39,342		687 \$30,731
60-64	91 \$24,503	48 \$22,643	79 \$26,620	76 \$29,683	56 \$30,740	32 \$44,213	9 \$56,880	5 \$45,988	2 \$87,635		398 \$29,469
Over 64	35 \$22,862	25 \$21,317	24 \$21,415	18 \$30,720	9 \$26,379	4 \$25,028	4 \$39,921	1 \$22,367	1 \$77,819		121 \$24,772
Total	2,057 \$26,911	607 \$27,172	524 \$26,412	485 \$31,513	323 \$37,177	146 \$44,771	52 \$54,604	26 \$46,973	4 \$73,108		4,224 \$29,326

**Active Membership – Milwaukee Technical College
Number and Average Annual Salary
As of December 31, 2016**

None as of December 31, 2016

**Active Membership – Sewerage Commission
Number and Average Annual Salary
As of December 31, 2016**

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 25	1 \$57,254									1 \$57,254
25-29	13 \$58,627	1 \$73,694								14 \$59,703
30-34	12 \$63,538	10 \$72,383	2 \$73,578							24 \$68,060
35-39	10 \$59,943	9 \$85,291	4 \$69,270							23 \$71,484
40-44	6 \$80,540	8 \$82,105	10 \$81,124	2 \$75,444						26 \$80,854
45-49	1 \$45,454	3 \$101,315	6 \$81,105	6 \$106,431		1 \$62,100				17 \$90,395
50-54	3 \$68,110	4 \$85,312	5 \$80,059	2 \$112,360	3 \$96,462	11 \$77,822	1 \$62,008			29 \$82,001
55-59	4 \$65,731	2 \$103,925	5 \$94,129	6 \$103,504	3 \$64,921	8 \$71,943	7 \$77,510	2 \$75,644		37 \$81,800
60-64	5 \$77,887	2 \$84,770	2 \$57,339	5 \$108,228	1 \$92,084	8 \$73,330	4 \$83,161	3 \$111,036		30 \$85,309
Over 64	2 \$87,277	2 \$90,015	4 \$73,977	3 \$92,971	1 \$101,869		1 \$94,774	2 \$139,137		15 \$93,621
Total	57 \$65,636	41 \$83,527	38 \$79,043	24 \$102,303	8 \$84,763	28 \$74,297	13 \$79,385	7 \$108,953		216 \$79,527

**Active Membership – Veolia
Number and Average Annual Salary
As of December 31, 2016**

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 25										
25-29										
30-34										
35-39										
40-44										
45-49					1					1
					\$67,629					\$67,629
50-54					1	5				6
					\$77,091	\$77,567				\$77,488
55-59					4	9	2			15
					\$88,271	\$75,394	\$84,038			\$79,980
60-64					1	5	5	2		13
					\$94,370	\$81,319	\$88,198	\$81,436		\$84,987
Over 64						1				1
						\$84,570				\$84,570
Total					7	20	7	2		36
					\$84,596	\$77,877	\$87,009	\$81,436		\$81,157

**Active Membership – Wisconsin Center District
Number and Average Annual Salary
As of December 31, 2016**

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 25	1									1
	\$29,713									\$29,713
25-29	5	1								6
	\$51,470	\$39,887								\$49,539
30-34	1	1	1							3
	\$44,781	\$42,025	\$43,699							\$43,502
35-39	5		5	1						11
	\$51,326		\$44,586	\$45,945						\$47,773
40-44	3	2		1						6
	\$58,295	\$67,900		\$47,460						\$59,691
45-49	4	1	1	2	1					9
	\$32,495	\$18,316	\$51,072	\$65,607	\$74,091					\$44,964
50-54	2	1	3	2	2	1	1			12
	\$46,845	\$20,517	\$50,313	\$79,668	\$47,247	\$59,552	\$35,201			\$51,144
55-59	3	3	3	2	2	1	2	1		17
	\$62,847	\$32,856	\$47,778	\$75,692	\$88,983	\$38,213	\$58,088	\$105,402		\$59,975
60-64	3	3	1	3		1				11
	\$15,455	\$41,954	\$64,194	\$96,664		\$38,297				\$51,338
Over 64		2	1	1	1				1	6
		\$39,728	\$8,649	\$98,465	\$47,194				\$109,985	\$57,291
Total	27	14	15	12	6	3	3	1	1	82
	\$45,257	\$40,031	\$45,655	\$76,983	\$65,624	\$45,354	\$50,459	\$105,402	\$109,985	\$52,287

**Active Membership – Housing Authority
Number and Average Annual Salary
As of December 31, 2016**

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 25	3 \$36,050									3 \$36,050
25-29	4 \$53,821	1 \$56,706								5 \$54,398
30-34	5 \$43,396	2 \$35,191	2 \$57,129							9 \$44,624
35-39	13 \$39,798	4 \$49,946	3 \$48,680							20 \$43,160
40-44	12 \$46,444	5 \$53,296	3 \$48,808	2 \$60,812	1 \$46,819					23 \$49,508
45-49	7 \$47,496	6 \$51,671	4 \$64,104	9 \$67,037		1 \$67,617				27 \$58,143
50-54	3 \$45,533	6 \$68,763	5 \$55,252	4 \$61,097	6 \$87,932	1 \$68,921	4 \$77,523			29 \$68,153
55-59	7 \$47,516	3 \$63,337	1 \$70,256	8 \$73,807	4 \$61,320	3 \$70,603	5 \$84,665	1 \$85,047		32 \$67,150
60-64	1 \$28,015	10 \$55,745	6 \$73,470	1 \$156,024	1 \$53,403	5 \$88,992		1 \$99,864		25 \$71,221
Over 64	2 \$40,057	4 \$56,587		2 \$62,522			1 \$79,563			9 \$56,785
Total	57 \$44,297	41 \$55,848	24 \$60,437	26 \$70,803	12 \$72,758	10 \$79,331	10 \$81,298	2 \$92,456		182 \$59,178

**Active Membership – Redevelopment Authority
Number and Average Annual Salary
As of December 31, 2016**

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 25										
25-29										
30-34			1 \$90,616							1 \$90,616
35-39		1 \$43,630								1 \$43,630
40-44		1 \$51,182		1 \$77,110						2 \$64,146
45-49			2 \$114,855							2 \$114,855
50-54						1 \$104,706				1 \$104,706
55-59		1 \$104,406			1 \$87,510					2 \$95,958
60-64										
Over 64										
Total		3 \$66,406	3 \$106,775	1 \$77,110	1 \$87,510	1 \$104,706				9 \$87,652

**Active Membership – General Employees
Number and Average Annual Salary
As of December 31, 2016**

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 25	135 \$27,868	1 \$35,397								136 \$27,923
25-29	572 \$31,626	35 \$44,252	1 \$41,530							608 \$32,369
30-34	566 \$35,651	144 \$47,382	36 \$49,639	1 \$52,924						747 \$38,610
35-39	513 \$36,974	195 \$44,639	121 \$53,538	56 \$48,874	4 \$48,989					889 \$41,713
40-44	394 \$35,205	192 \$40,891	126 \$49,744	120 \$54,977	23 \$54,943					855 \$41,930
45-49	370 \$34,721	221 \$41,162	217 \$42,622	218 \$51,656	129 \$55,689	42 \$56,557	3 \$49,821			1,200 \$43,468
50-54	293 \$33,410	206 \$40,428	200 \$37,668	234 \$41,749	212 \$51,153	168 \$62,064	66 \$63,062	24 \$57,390		1,403 \$44,356
55-59	261 \$35,391	152 \$37,111	172 \$35,860	231 \$42,532	208 \$51,623	224 \$60,185	147 \$67,811	64 \$59,372	4 \$63,723	1,463 \$47,240
60-64	132 \$32,348	98 \$36,270	127 \$39,054	129 \$43,217	113 \$48,503	98 \$63,295	78 \$70,760	31 \$78,326	13 \$66,620	819 \$47,444
Over 64	49 \$31,378	59 \$39,164	59 \$42,584	45 \$49,577	24 \$47,855	20 \$61,307	17 \$69,433	7 \$84,645	17 \$76,841	297 \$47,291
Total	3,285 \$34,262	1,303 \$41,361	1,059 \$42,490	1,034 \$46,468	713 \$51,690	552 \$61,074	311 \$67,458	126 \$65,062	34 \$71,389	8,417 \$42,968

**Active Membership – Policemen
Number and Average Annual Salary
As of December 31, 2016**

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 25	66 \$55,082	2 \$78,608								68 \$55,774
25-29	88 \$53,860	61 \$82,548	10 \$85,261							159 \$66,841
30-34	123 \$63,716	95 \$84,933	75 \$86,084	15 \$87,318						308 \$76,856
35-39	36 \$60,281	50 \$82,522	116 \$86,539	72 \$88,273	9 \$91,326					283 \$83,082
40-44	13 \$59,554	23 \$84,227	95 \$86,154	110 \$88,390	82 \$92,936	8 \$90,763				331 \$87,510
45-49	5 \$66,182	7 \$83,732	42 \$84,803	100 \$87,541	222 \$91,186	61 \$96,363	1 \$84,467			438 \$90,043
50-54	2 \$57,617	3 \$84,056	20 \$84,797	29 \$86,396	91 \$90,109	62 \$90,813	4 \$102,726	1 \$121,064		212 \$89,298
55-59			5 \$84,128	14 \$86,883	37 \$87,557	32 \$92,394	9 \$98,616	4 \$93,993		101 \$90,067
60-64			2 \$84,065		5 \$87,747	4 \$84,708	2 \$89,548	3 \$94,351		16 \$87,990
Over 64		1 \$161,828				3 \$98,843			2 \$102,382	6 \$110,520
Total	333 \$58,866	242 \$83,986	365 \$85,968	340 \$87,836	446 \$90,951	170 \$93,098	16 \$97,626	8 \$97,511	2 \$102,382	1,922 \$83,303

**Active Membership – Firemen
Number and Average Annual Salary
As of December 31, 2016**

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 25	46 \$54,109									46 \$54,109
25-29	8 \$65,933	5 \$76,528	1 \$83,376							14 \$70,963
30-34	24 \$59,021	37 \$81,049	39 \$88,019	9 \$85,905						109 \$79,094
35-39	20 \$58,852	42 \$82,623	11 \$80,910	43 \$89,772	9 \$88,316					125 \$81,538
40-44	5 \$61,622	18 \$82,487	20 \$81,682	34 \$89,642	21 \$86,631					98 \$84,628
45-49	1 \$56,828	12 \$79,182	12 \$85,376	35 \$88,987	114 \$90,026	10 \$95,286				184 \$88,923
50-54		1 \$81,766	6 \$88,901	13 \$87,634	47 \$89,140	53 \$89,927	4 \$90,992			124 \$89,307
55-59		1 \$156,680		5 \$86,591	6 \$87,069	17 \$92,659	7 \$103,141	2 \$92,518		38 \$94,586
60-64				1 \$112,086	1 \$86,449	1 \$92,551	2 \$84,237	1 \$104,342		6 \$93,984
Over 64										
Total	104 \$57,452	116 \$82,112	89 \$85,367	140 \$89,143	198 \$89,270	81 \$91,194	13 \$96,495	3 \$96,459		744 \$83,580

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, 2016
General Employes

Age	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
20	3	\$ 63,649	4	\$ 99,431	7	\$ 163,080
21	4	108,036	7	208,561	11	316,597
22	3	81,866	11	325,382	14	407,248
23	18	540,020	22	552,589	40	1,092,609
24	16	540,818	48	1,277,187	64	1,818,005
25	36	1,258,906	68	1,956,279	104	3,215,185
26	48	1,757,666	76	2,288,166	124	4,045,832
27	38	1,271,661	84	2,511,907	122	3,783,568
28	55	2,252,255	68	2,009,996	123	4,262,251
29	49	1,839,618	86	2,533,804	135	4,373,422
30	59	2,500,149	102	3,395,253	161	5,895,402
31	58	2,269,066	91	3,164,414	149	5,433,480
32	57	2,717,209	87	3,160,392	144	5,877,601
33	67	3,077,014	84	2,723,663	151	5,800,677
34	64	3,198,407	78	2,635,933	142	5,834,340
35	80	3,658,665	94	3,281,298	174	6,939,963
36	72	3,195,334	92	3,398,003	164	6,593,337
37	74	3,321,533	99	3,886,163	173	7,207,696
38	74	3,831,164	100	4,006,549	174	7,837,713
39	86	4,131,866	118	4,372,638	204	8,504,504
40	77	3,775,367	104	4,001,642	181	7,777,009
41	66	3,168,166	90	2,792,708	156	5,960,874
42	83	4,372,777	101	3,300,851	184	7,673,628
43	68	3,822,425	92	3,438,113	160	7,260,538
44	73	3,659,366	101	3,518,834	174	7,178,200
45	90	4,670,605	119	4,377,900	209	9,048,505
46	116	6,022,007	130	4,747,390	246	10,769,397
47	121	6,320,558	130	4,926,689	251	11,247,247
48	103	5,387,299	123	4,222,850	226	9,610,149
49	129	6,609,236	139	4,877,506	268	11,486,742
50	130	6,643,358	128	4,434,736	258	11,078,094
51	124	6,584,769	135	4,505,595	259	11,090,364
52	126	6,567,999	149	5,403,848	275	11,971,847
53	125	6,785,060	160	6,499,619	285	13,284,679
54	140	7,665,213	186	7,140,634	326	14,805,847
55	149	8,790,875	173	7,085,447	322	15,876,322
56	147	8,524,082	146	5,689,353	293	14,213,435
57	128	7,203,666	152	5,352,584	280	12,556,250
58	136	7,578,507	168	6,601,082	304	14,179,589
59	127	7,396,060	137	4,890,708	264	12,286,768

Table 1
The Number and Annual Salaries of Members in Active Service Distributed by Age
as of December 31, 2016
General Employes

Age	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
60	108	\$ 6,248,752	125	\$ 4,616,925	233	\$ 10,865,677
61	106	5,970,696	83	3,381,736	189	9,352,432
62	79	4,898,623	97	3,041,762	176	7,940,385
63	55	3,278,234	74	2,978,210	129	6,256,444
64	43	2,489,463	49	1,952,048	92	4,441,511
65	40	2,489,068	55	2,343,255	95	4,832,323
66	25	1,589,271	29	936,022	54	2,525,293
67	11	844,543	20	487,986	31	1,332,529
68	19	1,296,999	15	699,389	34	1,996,388
69	7	350,695	7	206,098	14	556,793
70	9	515,561	12	385,895	21	901,456
71	5	389,987	8	240,947	13	630,934
72	3	142,452	3	105,833	6	248,285
73	4	174,141	2	25,051	6	199,192
74	4	301,140	2	39,247	6	340,387
75	1	48,974	3	100,185	4	149,159
76			2	57,482	2	57,482
77	1	71,476			1	71,476
78			1	8,641	1	8,641
79	1	15,159	1	39,342	2	54,501
80			1	43,888	1	43,888
81			3	55,336	3	55,336
82			1	19,178	1	19,178
83			1	13,532	1	13,532
94	1	8,649			1	8,649
Total	3,741	\$ 194,286,180	4,676	\$ 167,373,685	8,417	\$ 361,659,865

Table 2
The Number and Annual Salaries of Members in Active Service Distributed by Years of
Credited Service as of December 31, 2016
General Employes

Years of Service	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
0	255	\$ 9,191,351	537	\$ 16,245,015	792	\$ 25,436,366
1	393	15,184,991	574	16,545,736	967	31,730,727
2	310	12,547,577	466	12,809,955	776	25,357,532
3	226	10,073,661	248	7,729,791	474	17,803,452
4	145	7,132,933	131	5,088,058	276	12,220,991
5	148	7,406,329	173	5,846,771	321	13,253,100
6	115	6,360,980	168	5,764,641	283	12,125,621
7	117	5,349,448	125	4,004,958	242	9,354,406
8	99	4,953,529	130	4,390,172	229	9,343,701
9	92	4,848,262	136	4,968,665	228	9,816,927
10	113	6,280,199	112	4,256,591	225	10,536,790
11	107	6,132,342	110	3,705,641	217	9,837,983
12	76	3,955,737	125	4,130,847	201	8,086,584
13	77	3,899,927	120	3,861,965	197	7,761,892
14	80	4,213,856	139	4,559,840	219	8,773,696
15	111	6,213,031	133	4,655,964	244	10,868,995
16	104	5,659,140	142	5,677,116	246	11,336,256
17	83	4,674,665	108	4,130,594	191	8,805,259
18	78	5,041,584	102	3,523,097	180	8,564,681
19	96	5,548,345	77	2,924,699	173	8,473,044
20	120	7,083,079	80	3,156,276	200	10,239,355
21	97	5,301,821	86	3,703,259	183	9,005,080
22	61	3,440,958	51	2,302,017	112	5,742,975
23	61	3,567,985	54	2,592,255	115	6,160,240
24	47	2,942,121	56	2,765,040	103	5,707,161
25	78	4,990,798	44	2,331,630	122	7,322,428
26	82	5,767,039	59	2,763,638	141	8,530,677
27	63	3,908,994	52	3,202,154	115	7,111,148
28	43	2,952,901	48	2,428,943	91	5,381,844
29	39	2,869,228	44	2,497,252	83	5,366,480
30	34	2,524,795	35	1,977,426	69	4,502,221
31	46	3,080,797	41	2,493,286	87	5,574,083
32	46	3,521,375	25	1,581,193	71	5,102,568
33	22	1,614,925	30	2,062,743	52	3,677,668
34	15	986,744	17	1,136,176	32	2,122,920
35	14	1,115,864	10	466,610	24	1,582,474
36	10	735,912	28	1,553,727	38	2,289,639
37	12	936,082	20	1,265,825	32	2,201,907
38	8	597,549	14	818,000	22	1,415,549
39	5	402,747	5	305,460	10	708,207

Table 2
The Number and Annual Salaries of Members in Active Service Distributed by Years of Credited Service as of December 31, 2016
General Employes

Years of Service	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
40	2	\$ 176,205	5	\$ 319,084	7	\$ 495,289
41	2	177,290	4	204,237	6	381,527
42	4	455,496	3	185,992	7	641,488
43	1	120,602	4	200,669	5	321,271
44	2	164,704	1	48,468	3	213,172
45			1	45,999	1	45,999
46			1	52,914	1	52,914
48	1	66,174			1	66,174
49			1	53,825	1	53,825
50	1	116,108			1	116,108
53			1	39,471	1	39,471
Total	3,741	\$ 194,286,180	4,676	\$ 167,373,685	8,417	\$ 361,659,865

Table 3
The Number and Annual Salaries of Members in Active Service Distributed by Age as of
December 31, 2016
Policemen

Age	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
21	7	\$ 320,097		\$	7	\$ 320,097
22	11	547,754	4	188,902	15	736,656
23	15	859,376	2	115,915	17	975,291
24	27	1,624,087	2	136,504	29	1,760,591
25	23	1,479,991	3	199,858	26	1,679,849
26	25	1,607,129	8	499,008	33	2,106,137
27	30	1,977,731	3	190,508	33	2,168,239
28	32	2,200,969			32	2,200,969
29	28	1,995,610	7	476,870	35	2,472,480
30	53	3,748,441	10	719,556	63	4,467,997
31	43	3,283,822	12	971,714	55	4,255,536
32	58	4,378,210	10	818,822	68	5,197,032
33	51	4,059,380	4	339,515	55	4,398,895
34	55	4,430,443	12	921,774	67	5,352,217
35	44	3,425,009	8	668,994	52	4,094,003
36	42	3,478,481	17	1,320,638	59	4,799,119
37	47	4,059,782	12	956,943	59	5,016,725
38	43	3,703,468	15	1,238,246	58	4,941,714
39	49	4,112,116	6	548,580	55	4,660,696
40	44	3,685,582	7	603,963	51	4,289,545
41	48	4,157,738	12	1,066,016	60	5,223,754
42	58	5,084,849	9	783,930	67	5,868,779
43	56	4,910,696	10	897,423	66	5,808,119
44	72	6,415,877	15	1,359,753	87	7,775,630
45	66	5,916,736	11	1,024,674	77	6,941,410
46	77	6,830,457	15	1,314,302	92	8,144,759
47	68	6,096,050	20	1,797,346	88	7,893,396
48	75	6,862,897	18	1,665,514	93	8,528,411
49	67	6,017,676	21	1,912,981	88	7,930,657
50	42	3,777,436	5	444,997	47	4,222,433
51	46	4,111,332	11	984,867	57	5,096,199
52	32	2,812,968	9	834,106	41	3,647,074
53	32	2,836,436	8	722,740	40	3,559,176
54	24	2,134,034	3	272,187	27	2,406,221
55	28	2,547,007	4	353,081	32	2,900,088
56	24	2,123,509	1	83,810	25	2,207,319
57	15	1,365,026	6	544,737	21	1,909,763
58	12	1,103,798			12	1,103,798
59	9	806,686	2	169,072	11	975,758

Table 3
The Number and Annual Salaries of Members in Active Service Distributed by Age as of
December 31, 2016
Policemen

Age	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
60	6	\$ 521,884	1	\$ 84,319	7	\$ 606,203
61	2	\$ 188,924	1	\$ 84,421	3	\$ 273,345
63	2	170,687	1	84,421	3	255,108
64	1	94,129	2	179,059	3	273,188
66			1	92,983	1	92,983
67	1	94,129			1	94,129
68	1	108,010			1	108,010
69	2	258,582			2	258,582
70	1	109,418			1	109,418
Total	1,594	\$ 132,434,449	328	\$ 27,673,049	1,922	\$ 160,107,498

Table 4
The Number and Annual Salaries of Members in Active Service Distributed by Years of
Credited Service as of December 31, 2016
Policemen

Years of Service	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
0	84	\$ 3,702,739	17	\$ 753,099	101	\$ 4,455,838
1	60	3,335,575	8	455,976	68	3,791,551
2	44	2,837,027	6	389,233	50	3,226,260
3	64	4,422,993	9	595,655	73	5,018,648
4	33	2,502,842	8	607,390	41	3,110,232
5	10	808,593	2	126,877	12	935,470
6	39	3,192,782	5	365,723	44	3,558,505
7	9	746,272	3	243,664	12	989,936
8	36	2,967,486	2	169,375	38	3,136,861
9	120	10,312,486	16	1,391,431	136	11,703,917
10	79	6,767,378	17	1,459,690	96	8,227,068
11	70	6,026,397	13	1,119,755	83	7,146,152
12	36	3,071,969	6	514,353	42	3,586,322
13	41	3,549,150	12	1,028,832	53	4,577,982
14	77	6,607,819	14	1,233,136	91	7,840,955
15	88	7,733,481	23	2,021,368	111	9,754,849
16	61	5,238,785	15	1,293,734	76	6,532,519
17	34	3,018,981	11	940,227	45	3,959,208
18	53	4,678,168	9	780,968	62	5,459,136
19	36	3,224,359	10	934,136	46	4,158,495
20	83	7,467,729	14	1,230,935	97	8,698,664
21	77	7,068,344	18	1,684,892	95	8,753,236
22	73	6,512,595	17	1,504,846	90	8,017,441
23	59	5,512,190	17	1,568,439	76	7,080,629
24	68	6,159,531	20	1,854,604	88	8,014,135
25	82	7,537,351	19	1,800,897	101	9,338,248
26	31	2,848,488	7	673,363	38	3,521,851
27	15	1,451,460	4	379,824	19	1,831,284
28	3	304,016	1	85,567	4	389,583
29	6	543,513	2	202,145	8	745,658
30	3	284,199	1	84,467	4	368,666
31	6	623,362			6	623,362
32	3	254,828			3	254,828
33	3	315,157			3	315,157
35	2	189,382	1	84,319	3	273,701
36	2	214,047	1	94,129	3	308,176
37	1	104,082			1	104,082
39	1	94,129			1	94,129
40	1	\$ 108,010		\$	1	\$ 108,010
48	1	96,754			1	96,754
Total	1,594	\$ 132,434,449	328	\$ 27,673,049	1,922	\$ 160,107,498

Table 5
The Number and Annual Salaries of Members in Active Service Distributed by Age as of
December 31, 2016
Firemen

Age	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
20	2	\$ 114,634	1	\$ 57,317	3	\$ 171,951
21	4	\$ 290,450	1	\$ 57,317	5	\$ 347,767
22	15	760,326	3	157,478	18	917,804
23	13	674,663	1	49,900	14	724,563
24	6	326,934			6	326,934
27	2	171,127			2	171,127
28	3	209,039			3	209,039
29	7	471,792	2	141,518	9	613,310
30	20	1,609,760			20	1,609,760
31	17	1,304,256			17	1,304,256
32	21	1,652,529	1	112,600	22	1,765,129
33	23	1,773,420			23	1,773,420
34	27	2,168,628			27	2,168,628
35	24	1,929,954	1	83,263	25	2,013,217
36	24	1,916,839	1	83,104	25	1,999,943
37	27	2,278,575			27	2,278,575
38	26	2,134,267	1	69,282	27	2,203,549
39	21	1,696,978			21	1,696,978
40	24	2,064,468			24	2,064,468
41	16	1,261,163	2	155,087	18	1,416,250
42	21	1,789,987			21	1,789,987
43	18	1,591,271			18	1,591,271
44	17	1,431,602			17	1,431,602
45	42	3,816,822	1	90,790	43	3,907,612
46	39	3,373,675			39	3,373,675
47	34	3,084,845	2	207,398	36	3,292,243
48	30	2,659,347	1	82,625	31	2,741,972
49	34	2,963,771	1	82,585	35	3,046,356
50	26	2,294,061	1	81,766	27	2,375,827
51	20	1,736,674	2	163,452	22	1,900,126
52	29	2,613,473	2	179,937	31	2,793,410
53	26	2,330,163			26	2,330,163
54	16	1,499,448	2	175,095	18	1,674,543
55	8	760,926			8	760,926
56	11	995,364			11	995,364
57	7	662,003	1	104,342	8	766,345
58	7	697,722			7	697,722
59	4	373,922			4	373,922
60	3	254,922			3	254,922
61	2	204,637			2	204,637
63	1	104,342			1	104,342
Total	717	\$ 60,048,779	27	\$ 2,134,856	744	\$ 62,183,635

Table 6
The Number and Annual Salaries of Members in Active Service Distributed by Years of
Credited Service as of December 31, 2016
Firemen

Years of Service	Men		Women		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
0	22	\$ 1,355,478	3	\$ 171,826	25	\$ 1,527,304
1	20	977,838	3	150,186	23	1,128,024
2	10	555,697			10	555,697
3	21	1,225,377	1	58,142	22	1,283,519
4	24	1,480,426			24	1,480,426
5	26	1,866,188	2	137,711	28	2,003,899
6	30	2,513,177			30	2,513,177
7	45	3,862,850			45	3,862,850
8	1	83,021			1	83,021
9	12	1,062,042			12	1,062,042
10	2	142,398			2	142,398
11	12	947,562	1	83,376	13	1,030,938
12	23	1,950,540			23	1,950,540
13	17	1,524,255	1	112,600	18	1,636,855
14	32	2,750,306	1	86,658	33	2,836,964
15	11	972,746			11	972,746
16	39	3,418,734	1	83,263	40	3,501,997
17	30	2,675,877	1	83,104	31	2,758,981
18	29	2,598,490			29	2,598,490
19	28	2,566,039	1	81,726	29	2,647,765
20	44	3,905,822	2	196,790	46	4,102,612
21	49	4,362,607			49	4,362,607
22	29	2,551,844			29	2,551,844
23	50	4,434,171	4	328,702	54	4,762,873
24	19	1,802,984	1	92,550	20	1,895,534
25	10	942,641	2	183,943	12	1,126,584
26	31	2,769,419			31	2,769,419
27	10	915,086	1	81,726	11	996,812
28	5	496,129			5	496,129
29	20	1,795,229	2	202,553	22	1,997,782
30	1	105,795			1	105,795
31	3	284,269			3	284,269
32	6	554,155			6	554,155
33	3	310,210			3	310,210
35	1	104,342			1	104,342
36	1	81,726			1	81,726
37	1	103,309			1	103,309
Total	717	\$ 60,048,779	27	\$ 2,134,856	744	\$ 62,183,635

Table 7A
The Number and Annual Benefits Payable to Consenting General Employes from the Combined Fund as of December 31, 2016

Age	Members		Beneficiaries		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
9			1	\$ 2,630	1	\$ 2,630
12			1	2,241	1	2,241
16			1	1,922	1	1,922
19			1	1,922	1	1,922
20			1	5,157	1	5,157
22			1	5,785	1	5,785
23			1	1,257	1	1,257
24			1	8,879	1	8,879
25			4	15,114	4	15,114
26			2	8,283	2	8,283
27			4	23,144	4	23,144
29			4	24,064	4	24,064
30			3	24,006	3	24,006
31			2	6,031	2	6,031
32			2	6,455	2	6,455
33			2	6,323	2	6,323
34			2	9,385	2	9,385
35			1	6,889	1	6,889
36			2	4,391	2	4,391
37			2	6,233	2	6,233
38			5	32,781	5	32,781
39			3	11,468	3	11,468
40	1	\$ 7,339	2	12,900	3	20,239
41	1	44,835	3	13,195	4	58,030
42	6	99,208	3	20,777	9	119,985
43	1	22,855	4	50,138	5	72,993
44	1	29,749	1	5,157	2	34,906
45	3	22,751	2	6,793	5	29,544
46	4	36,541	4	21,361	8	57,902
47	4	61,922	2	29,832	6	91,754
48	10	115,631	3	20,069	13	135,700
49	2	24,821	7	57,714	9	82,535
50	5	87,395	2	8,436	7	95,831
51	4	43,565	4	39,356	8	82,921
52	4	62,619	6	110,157	10	172,776
53	10	126,614	3	78,548	13	205,162
54	11	161,977	5	32,184	16	194,161
55	29	765,502	8	123,761	37	889,263
56	50	1,444,233	10	187,993	60	1,632,226
57	72	2,104,915	7	99,301	79	2,204,216
58	79	2,262,793	14	196,967	93	2,459,760
59	88	2,679,806	17	271,767	105	2,951,573
60	188	4,634,037	8	127,707	196	4,761,744
61	267	5,299,548	12	268,555	279	5,568,103
62	310	6,195,645	23	368,468	333	6,564,113
63	364	7,311,934	26	380,656	390	7,692,590
64	344	6,419,878	22	390,756	366	6,810,634
65	397	7,771,828	12	169,902	409	7,941,730
66	449	9,131,870	23	354,238	472	9,486,108
67	443	9,118,804	22	288,761	465	9,407,565

Table 7A
The Number and Annual Benefits Payable to Consenting General Employes from the
Combined Fund as of December 31, 2016

Age	Members		Beneficiaries		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
68	402	\$ 8,504,882	22	\$ 291,520	424	\$ 8,796,402
69	389	8,631,834	23	320,809	412	8,952,643
70	373	7,628,187	33	514,273	406	8,142,460
71	238	5,069,762	30	568,598	268	5,638,360
72	248	5,337,694	22	276,771	270	5,614,465
73	207	4,569,906	31	541,193	238	5,111,099
74	233	4,403,195	41	712,856	274	5,116,051
75	185	3,881,280	43	777,757	228	4,659,037
76	185	3,570,452	27	530,568	212	4,101,020
77	159	2,811,270	35	507,461	194	3,318,731
78	170	2,723,930	34	578,308	204	3,302,238
79	201	3,819,023	36	478,633	237	4,297,656
80	172	3,409,987	46	638,662	218	4,048,649
81	141	2,033,301	48	738,308	189	2,771,609
82	151	2,606,479	42	584,214	193	3,190,693
83	128	1,778,450	44	636,276	172	2,414,726
84	148	2,250,203	46	614,037	194	2,864,240
85	158	2,552,677	43	538,997	201	3,091,674
86	135	2,233,008	49	552,008	184	2,785,016
87	103	1,529,073	49	564,381	152	2,093,454
88	110	1,446,002	53	658,919	163	2,104,921
89	93	1,278,551	53	628,147	146	1,906,698
90	108	1,539,207	50	580,761	158	2,119,968
91	77	995,549	31	296,255	108	1,291,804
92	72	960,490	38	435,750	110	1,396,240
93	49	607,488	27	255,650	76	863,138
94	42	392,108	19	185,411	61	577,519
95	28	407,101	22	148,019	50	555,120
96	25	201,988	12	89,808	37	291,796
97	12	90,528	7	54,368	19	144,896
98	9	85,415	10	80,036	19	165,451
99	12	96,627	3	22,842	15	119,469
100	2	35,347	4	21,128	6	56,475
101	3	12,640	3	21,384	6	34,024
102			1	5,181	1	5,181
107	1	16,736			1	16,736
Total	7,916	\$ 153,598,985	1,378	\$ 18,399,098	9,294	\$ 171,998,083

Table 7B
The Number and Annual Benefits Payable to Consenting Firemen from the Combined Fund
as of December 31, 2016

Age	Members		Beneficiaries		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
28			1	\$ 3,547	1	\$ 3,547
32			1	3,547	1	3,547
34	1	\$ 48,942			1	48,942
39	1	48,755			1	48,755
40	2	102,512			2	102,512
43	1	27,186			1	27,186
44	4	206,423			4	206,423
45	6	273,981			6	273,981
46	1	56,853			1	56,853
47	4	158,765	1	58,476	5	217,241
48	10	510,571			10	510,571
49	8	430,922			8	430,922
50	7	344,660			7	344,660
51	15	748,887	2	91,380	17	840,267
52	12	595,296	1	19,880	13	615,176
53	17	940,868	1	35,142	18	976,010
54	22	1,201,558			22	1,201,558
55	18	1,002,392			18	1,002,392
56	24	1,219,236			24	1,219,236
57	26	1,442,955	1	3,600	27	1,446,555
58	32	1,827,007	3	143,522	35	1,970,529
59	52	2,760,695	3	87,071	55	2,847,766
60	52	2,908,165	1	37,074	53	2,945,239
61	50	2,723,640	1	36,204	51	2,759,844
62	45	2,432,472	4	137,878	49	2,570,350
63	42	2,267,095	3	113,954	45	2,381,049
64	40	2,292,481	7	94,345	47	2,386,826
65	26	1,390,866	3	94,420	29	1,485,286
66	25	1,286,646			25	1,286,646
67	27	1,520,825	3	72,100	30	1,592,925
68	33	1,910,797	1	6,724	34	1,917,521
69	32	1,733,294	7	126,734	39	1,860,028
70	50	3,102,218	8	216,502	58	3,318,720
71	26	1,471,930	3	122,890	29	1,594,820
72	18	986,306	6	186,257	24	1,172,563
73	27	1,256,704	4	132,930	31	1,389,634
74	36	1,871,377	9	245,447	45	2,116,824
75	31	1,764,889	7	277,658	38	2,042,547
76	17	909,645	5	134,581	22	1,044,226
77	19	939,490	5	95,159	24	1,034,649
78	18	889,402	3	111,832	21	1,001,234
79	14	609,386	8	198,981	22	808,367

Table 7B
The Number and Annual Benefits Payable to Consenting Firemen from the Combined Fund
as of December 31, 2016

Age	Members		Beneficiaries		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
80	11	\$ 601,053	9	\$ 229,665	20	\$ 830,718
81	20	949,783	11	285,522	31	1,235,305
82	9	399,599	9	251,714	18	651,313
83	12	514,965	9	197,317	21	712,282
84	10	408,438	10	270,743	20	679,181
85	15	630,512	10	200,951	25	831,463
86	26	1,017,488	16	361,610	42	1,379,098
87	12	558,143	17	372,121	29	930,264
88	18	702,639	14	284,587	32	987,226
89	7	247,777	14	358,827	21	606,604
90	9	332,497	7	131,715	16	464,212
91	1	22,367	7	137,593	8	159,960
92	6	227,716	2	17,351	8	245,067
93	4	126,864			4	126,864
94	3	87,094	3	48,383	6	135,477
95	2	71,336	1	23,142	3	94,478
96	2	66,323			2	66,323
98	1	20,239			1	20,239
Total	1,059	\$ 55,200,925	241	\$ 6,059,076	1,300	\$ 61,260,001

Table 7C
The Number and Annual Benefits Payable to Consenting Policemen from the Combined
Fund as of December 31, 2016

Age	Members		Beneficiaries		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
14			1	\$ 15,059	1	\$ 15,059
15			1	10,542	1	10,542
16			1	15,059	1	15,059
19			1	13,768	1	13,768
20			1	23,969	1	23,969
28			1	13,768	1	13,768
32			1	10,542	1	10,542
33			1	50,328	1	50,328
34	1	\$ 65,486			1	65,486
36	1	54,994			1	54,994
38	3	191,780			3	191,780
39	3	152,409			3	152,409
40	1	54,994			1	54,994
41	4	200,899			4	200,899
42	1	55,331			1	55,331
43	2	116,589	1	45,196	3	161,785
44	5	282,335	1	8,687	6	291,022
45	5	233,275	2	97,077	7	330,352
46	9	529,090			9	529,090
47	9	519,692	1	8,687	10	528,379
48	16	980,093			16	980,093
49	19	1,094,308			19	1,094,308
50	21	1,268,710			21	1,268,710
51	28	1,517,126	2	63,165	30	1,580,291
52	22	1,283,946	3	91,531	25	1,375,477
53	26	1,504,589			26	1,504,589
54	31	1,835,190	1	39,366	32	1,874,556
55	26	1,636,643	3	147,214	29	1,783,857
56	31	1,834,846	2	84,149	33	1,918,995
57	47	2,623,317	4	113,494	51	2,736,811
58	57	3,129,384	3	94,258	60	3,223,642
59	49	2,614,729	6	132,983	55	2,747,712
60	59	3,402,571	2	29,850	61	3,432,421
61	57	3,294,403	8	245,596	65	3,539,999
62	66	3,506,063	4	224,943	70	3,731,006
63	64	3,433,897	4	111,033	68	3,544,930
64	70	4,004,821	6	286,856	76	4,291,677
65	53	2,873,782	8	350,175	61	3,223,957
66	52	3,269,349	11	344,166	63	3,613,515
67	66	3,679,692	7	303,080	73	3,982,772
68	63	3,576,372	6	165,309	69	3,741,681
69	86	5,273,537	8	369,134	94	5,642,671
70	69	3,892,748	17	526,284	86	4,419,032

Table 7C
The Number and Annual Benefits Payable to Consenting Policemen from the Combined Fund as of December 31, 2016

Age	Members		Beneficiaries		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
71	52	\$ 3,015,011	9	\$ 231,936	61	\$ 3,246,947
72	49	2,802,241	14	571,202	63	3,373,443
73	51	2,583,995	14	531,361	65	3,115,356
74	69	3,302,487	17	577,088	86	3,879,575
75	42	2,126,984	12	333,211	54	2,460,195
76	44	2,218,477	13	354,125	57	2,572,602
77	48	2,126,560	10	248,085	58	2,374,645
78	36	1,605,728	9	236,615	45	1,842,343
79	31	1,338,657	11	335,280	42	1,673,937
80	25	1,089,187	12	366,603	37	1,455,790
81	29	1,279,263	22	602,489	51	1,881,752
82	25	1,036,575	16	356,709	41	1,393,284
83	16	608,388	22	515,292	38	1,123,680
84	18	640,676	26	541,537	44	1,182,213
85	25	944,413	17	442,882	42	1,387,295
86	20	752,909	22	467,628	42	1,220,537
87	19	682,191	22	418,942	41	1,101,133
88	19	772,348	17	305,173	36	1,077,521
89	18	628,476	18	349,946	36	978,422
90	13	468,003	19	323,043	32	791,046
91	5	135,594	11	137,628	16	273,222
92	5	116,146	7	96,793	12	212,939
93	5	152,328	5	81,949	10	234,277
94	5	93,856	4	71,158	9	165,014
95	3	79,277	4	44,346	7	123,623
96	2	51,386	4	60,621	6	112,007
97	1	27,570	3	34,474	4	62,044
98			1	11,314	1	11,314
99	1	23,184	1	3,953	2	27,137
Total	1,798	\$ 94,688,900	480	\$ 12,686,651	2,278	\$ 107,375,551

Table 8
The Number and Annual Benefits Payable to Non-Consenters from the Retirement Fund as of December 31, 2016

Age	Members		Beneficiaries		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
56	1	\$ 9,683			1	\$ 9,683
64	1	1,813	1	\$ 7,743	2	9,556
66	1	24,979			1	24,979
68	1	3,588			1	3,588
72	1	5,296			1	5,296
73	1	2,803			1	2,803
74	1	17,091			1	17,091
76	1	19,050			1	19,050
79	1	492			1	492
82	1	1,254			1	1,254
84	1	3,474	1	9,908	2	13,382
85			1	10,446	1	10,446
87	1	9,727			1	9,727
100	1	10,888			1	10,888
Total	13	\$ 110,138	3	\$ 28,097	16	\$ 138,235

Exhibit 3 Reconciliation of Membership Data

**Reconciliation of Membership Data
From January 1, 2016 to January 1, 2017**

	Active Members	Inactive Members	Benefit Recipients			Total
			Disableds	Service Retirees	Beneficiaries	
Number as of January 1, 2016	10,982	3,338	920	9,739	2,104	27,083
New participants	1,260	15	0	0	136	1,411
Vested terminations	(477)	477	0	0	0	0
Non-vested with Member Contribution	0	0	0	0	0	0
Retirements	(365)	(116)	(9)	508	0	18
Disabilities	(15)	(4)	19	0	0	0
Return to work	37	(37)	0	0	0	0
Refund/Withdrawal	(324)	(243)	0	0	0	(567)
Death	(15)	(14)	(27)	(361)	(138)	(555)
Cessation of benefits	0	0	(1)	(2)	0	(3)
Data Adjustments	<u>0</u>	<u>0</u>	<u>3</u>	<u>(3)</u>	<u>0</u>	<u>0</u>
Number as of January 1, 2017	11,083	3,416	905	9,881	2,102	27,387