

Employees' Retirement System of the County of Milwaukee

Actuarial Valuation Report

Plan Year

January 1, 2016 – December 31, 2016

July 2016





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July 2016

The Retirement Board
Employees' Retirement System of the County of Milwaukee
901 N. 9th St.
Milwaukee, WI 53233

Certification of Actuarial Valuation

Ladies and Gentlemen:

This report presents the results of the annual actuarial valuation of the Employees' Retirement System of the County of Milwaukee as of January 1, 2016. The valuation takes into account all of the promised benefits to which members are entitled as of January 1, 2016, including pension and survivor benefits; and as required by the Retirement Code is the basis for the Budget Contribution for fiscal year 2016.

The valuation was based on the actuarial assumptions and methods as adopted by the Board of Trustees, including a valuation interest rate of 8% per annum compounded annually. Based on our recommendations in November 2012, the Board adopted revised actuarial assumptions effective with the January 1, 2013 valuation.

Use of this report for any other purpose may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies, or inapplicability of the report for that purpose. Because of the risk of misinterpretation of actuarial results, you should ask Buck to review any statement you wish to make on the results contained in this report. Buck will not accept any liability for any such statement made without prior review by Buck.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, changes expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions, applicable law or regulations. Because of limited scope, Buck performed no analysis of the potential range of such future differences.

In our opinion, the actuarial assumptions used are reasonable, taking into account the experience of the Plan and reasonable long-term expectations, and represent our best estimate of the anticipated long-term experience under the Plan. The actuary performs an analysis of Plan experience periodically and recommends changes if, in the opinion of the actuary, assumption changes are needed to more accurately reflect expected future experience. The Experience Study for the period January 1, 2007 to December 31, 2011 was prepared by Buck Consultants and approved by the Board for use beginning with the January 1, 2013 actuarial valuation and will remain in effect for valuation purposes until such time as the Board adopts revised assumptions. The next Experience Study will be based on the period from January 1, 2012 to December 31, 2016 and upon approval by the Board will be the basis of valuations performed from January 1, 2018 through January 1, 2022. A summary of the actuarial assumptions and methods used in this actuarial valuation are shown in Table 19.

Where presented, references to "funded ratio" and "unfunded accrued liability" typically are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, 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.

Assets and Membership Data

The Retirement System reported the individual data for members of the System as of the valuation date to the actuary. For 2016 we received the data in multiple files. Missing information was updated with either supplemental information sent or by using assumptions based on the prior year's data. While we did not verify the data at their source, we did perform tests for internal consistency and reasonableness. The amount of assets in the trust fund taken into account in the valuation was based on statements prepared for us by the Retirement System.

Funding Adequacy

The 2015 valuation performed last year resulted in an Actual Funding Contribution of \$57,853,824 against which \$39,347,374 in County contributions and \$9,690,685 in Member contributions (adjusted for interest as shown in Table 11) were actually contributed. The difference is a deficiency of \$8,815,765 that is included in the increase of unfunded actuarial accrued liability amortization as of January 1, 2016.

The Actual Funding Contribution for 2016, based on the results of this valuation, is \$63,067,396. It is expected that \$59,436,000 (\$59,436,000 in expected contribution plus \$0 interest) will be contributed during 2016 on behalf of the 2016 plan year. The deficiency in contributions of \$3,631,396 will be amortized over five years as of January 1, 2017.

Budget Contribution

The 2017 Budget Contribution, expected to be contributed in 2017, is \$65,461,000.

Financial Results and Membership Data

Detailed summaries of the financial results of the valuation and membership data used in preparing the valuation are shown in the valuation report. The actuary prepared supporting schedules and required supplementary information included in the County of Milwaukee Annual Report of the Pension Board.

Compliance with Actuarial Standards of Practice

Except as specially noted otherwise, the work in this report was performed in accordance with all applicable Actuarial Standards of Practice.

Qualifications

The undersigned 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. We are qualified to render the opinions set forth in this report and are available to answer questions about it.

Respectfully submitted,



Larry Langer, ASA, EA, MAAA
Principal, Consulting Actuary



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

Table of Contents

Executive Summary	2
TABLE 1 - Summary of Results of Actuarial Valuation	11
TABLE 2 - Security of Promised Benefits - Unfunded Actuarial Accrued Liability - Funded Status	12
TABLE 3 – Unexpected Change in Unfunded Actuarial Accrued Liability for Plan Year Ending	13
TABLE 4 - Amortization Schedule for Funding	14
TABLE 5 - Development of Normal Cost for Current and Prior Plan Year Actual Funding Calculations	15
TABLE 6 - Gross Contribution Requirements	16
TABLE 7 - Summary Statement of Market Value of Plan Assets	18
TABLE 8 - Summary Reconciliation of Market Value of Plan Assets	19
TABLE 9 - Derivation of Actuarial Value of Plan Assets	20
TABLE 10 - Summary Reconciliation of Actuarial Value of Plan Assets	21
TABLE 11 - Contributions for 2015 Plan Year and Variance from the Funding Calculation Contribution	22
TABLE 12 – Actuarial Methods and Assumptions for GASB 67/68 Disclosure Purposes	23
TABLE 13 – GASB 67 Net Pension Liability as of December 31, 2015 and December 31, 2014	24
TABLE 14 – Sensitivity of the Net Pension Liability as of December 31, 2015 and December 31, 2014 to Changes in the Discount Rate	25
TABLE 15 – Pension Expense for Year Ended December 31, 2015 and December 31, 2014 and Deferred Inflows & Outflows of Resources Related to Pensions	26
TABLE 16 – Projection of Fiduciary Net Position	29
TABLE 17 – Actuarial Present Values of Projected Benefit Payments	30
TABLE 18 – Description of Actuarial Assumptions and Methods	31
TABLE 19 - Summary of Benefit and Contribution Provisions.....	36
TABLE 20 - Summary of Membership Data as of January 1, 2016.....	43
TABLE 21 - Active Membership Statistics (Unaudited)	44
EXHIBIT I - Active Membership Data – All Employees.....	45
EXHIBIT II - Active Membership Data – General Employees.....	45
EXHIBIT III - Active Membership Data – Deputy Sheriffs.....	46
EXHIBIT IV - Active Membership Data – Elected Officials	48
EXHIBIT VI - Retiree and Beneficiary Membership Data as of January 1, 2016.....	49
EXHIBIT VII - 5-Year History of Membership Data	51
EXHIBIT VIII - Detailed Tabulations of the Data	52
EXHIBIT IX - Glossary	71

Executive Summary

This report presents the actuarial valuation as of January 1, 2016 for the Employees' Retirement System of the County of Milwaukee. The principal valuation results include:

- The Actual Funding Contribution for fiscal year 2016, which is \$63,067,396.
- The Budget Contribution for fiscal year 2017, which is \$65,461,000.
- The total funded ratio of the plan determined as of January 1, 2016, which is 78.1% based on the accrued liability and the actuarial value of assets. On a market value basis, the plan is 75.8% funded.
- The determination of the unexpected change in the unfunded accrued liability (UAL) as of January 1, 2016, which is an increase in the UAL of \$41,364,891.

The valuation was based on membership and financial data submitted by the Retirement System.

Changes since Last Year

Legislative and Administrative Changes

No legislative or administrative changes have been adopted since the previous valuation.

Note that for purposes of the contribution rates shown in the report, these amounts are gross contribution amounts. It is our understanding that County staff will net out the amount of employee contributions that are collected to arrive at a net County contribution. The benefit and contribution provisions are outlined in Table 19.

Actuarial Assumptions and Methods

No actuarial assumptions have changed for 2016 since the previous valuation.

The actuarial assumptions and methods are outlined in Table 18.

Contribution Amounts

The results of the valuation as of January 1, 2016 determine the Actual Funding Contribution for fiscal year 2016 and the Budget Contribution for fiscal year 2017. The Actual Funding Contribution for fiscal year 2016 is \$63,067,396. The Budget Contribution for fiscal year 2017 is \$65,461,000. These amounts are based on assumptions and methods as adopted by the Board and participant data as of January 1, 2016.

Reasons for Change in Budget Contribution Calculated by the Actuary

The Budget Contribution calculated by the actuary increased from \$59,436,000 for fiscal year 2016 to \$65,461,000 for fiscal year 2017. A reconciliation of the increase of \$6,025,000 is shown in the following table:

Item	Amount
1. 2016 Budget Contribution	\$ 59,436,000
2. Increase / (Decrease) during 2015 due to	
a. Unanticipated liability loss (gain)	4,049,000
b. Asset experience other than expected	944,000
c. 2015 reimbursable expenses other than assumed	(355,000)
d. 2015 contribution variance other than assumed	(1,007,000)
e. Full recognition of bases	-
f. Increase due to assumption/method/plan changes	-
h. Total	<u>3,631,000</u>
3. 2016 Actual Contribution (1 + 2)	\$ 63,067,000
4. Expected Increase / (Decrease) during 2016 due to	
a. Normal cost and existing amortization base	\$ 768,000
b. Phase-in of deferred asset (gains) losses	694,000
c. Increase in reimburseable expenses	22,000
d. Expected contribution variance for 2016	910,000
e. Full recognition of bases	-
f. Change in Assumption	-
g. Total	<u>2,394,000</u>
5. 2017 Budget Contribution (3 + 4)	\$ 65,461,000

Summary of Principal Results

Summarized below are the principal financial results for the Employees' Retirement System of the County of Milwaukee based upon the actuarial valuation as of January 1, 2016. Comparable results from the January 1, 2015 valuation are also shown.

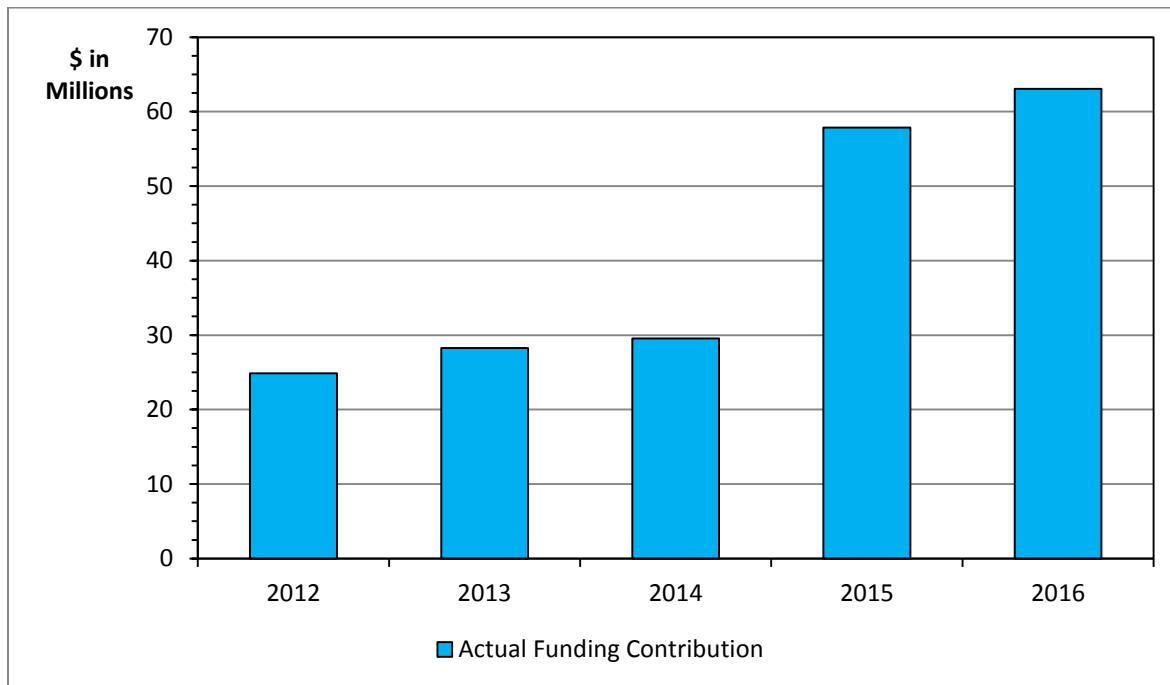
Item	January 1, 2016	January 1, 2015
Demographics		
<u>Active Members</u>		
• Number	3,619	3,680
• Average Annual Pay	\$ 53,847	\$ 53,868
<u>Inactive Members</u>		
• Members Receiving Benefits		
• Number	7,991	7,979
• Average Annual Benefit Payment	\$ 21,180	\$ 20,687
• Members With Deferred Benefits		
• Number	1,387	1,370
• Average Annual Benefit Payment	\$ 7,993	\$ 1,370
Actual Funding Contribution		
	(Fiscal Year 2016)	(Fiscal Year 2015)
• Normal Cost with Interest	\$ 17,381,870	\$ 16,999,506
• Net Amortization Payments	44,459,669	39,300,143
• Expense	<u>1,225,857</u>	<u>1,554,175</u>
• Total Contribution	\$ 63,067,396	\$ 57,853,824
Actuarial Funded Status		
• Accrued Liability	\$ 2,262,851,177	\$ 2,222,620,399
• Actuarial Value of Assets	<u>1,767,419,752</u>	<u>1,773,638,120</u>
• Unfunded Accrued Liability	\$ 495,431,425	\$ 448,982,279
• Funded Ratio	78.1%	79.8%

Five-Year History of Principal Financial Results

Five-Year History of Contribution Amounts

Valuation as of January 1	Actual Funding Contributions			
	Normal Cost with Interest	Net Amortization Payments	Expenses	Total
2016	\$ 17,381,870	\$ 44,459,669	\$ 1,225,857	\$ 63,067,396
2015	16,999,506	39,300,143	1,554,175	57,853,824
2014	15,235,436	14,329,489	N/A	29,564,925
2013	16,105,425	12,164,620	N/A	28,270,045
2012	14,488,711	10,386,482	N/A	24,875,193

Chart of Five-Year History of Actual Funding Contributions



Funded Ratio

The financing objective of the System is to:

- Fully fund all current costs based on the normal contribution rate determined under the funding method;
and
- Liquidate the unfunded accrued liability based on the amortization schedules as required by Section 3.1 of the retirement code, i.e., a schedule of 5 or 20 years for each change in the unfunded accrued liability.

The total Actual Funding Contribution of \$63,067,396, when taken together with the contributions payable by the members and asset returns, is the amount sufficient to achieve the financing objective for 2016.

The System's total funded ratio on the funding basis is measured by comparing the actuarial value of assets (based on a 10-year moving average market value) with the accrued liability. The accrued liability is the present value of benefits accumulated to date under the System's funding method and reflects future pay increases for active employees.

On this basis, the System's funded ratio is 78.1% as of January 1, 2016. This funded ratio is based on an actuarial value of assets of \$1,767,419,752 and an accrued liability of \$2,262,851,177.

Reasons for Change in the Funded Ratio

The total funded ratio decreased from a reported 79.8% as of January 1, 2015 to 78.1% as of January 1, 2016. Returns on actuarial assets from 2015 were 8.0% as expected. Overall liability experience was worse than expected, which was slightly offset by the favorable asset experience (unrounded returns were just higher than the 8.0%).

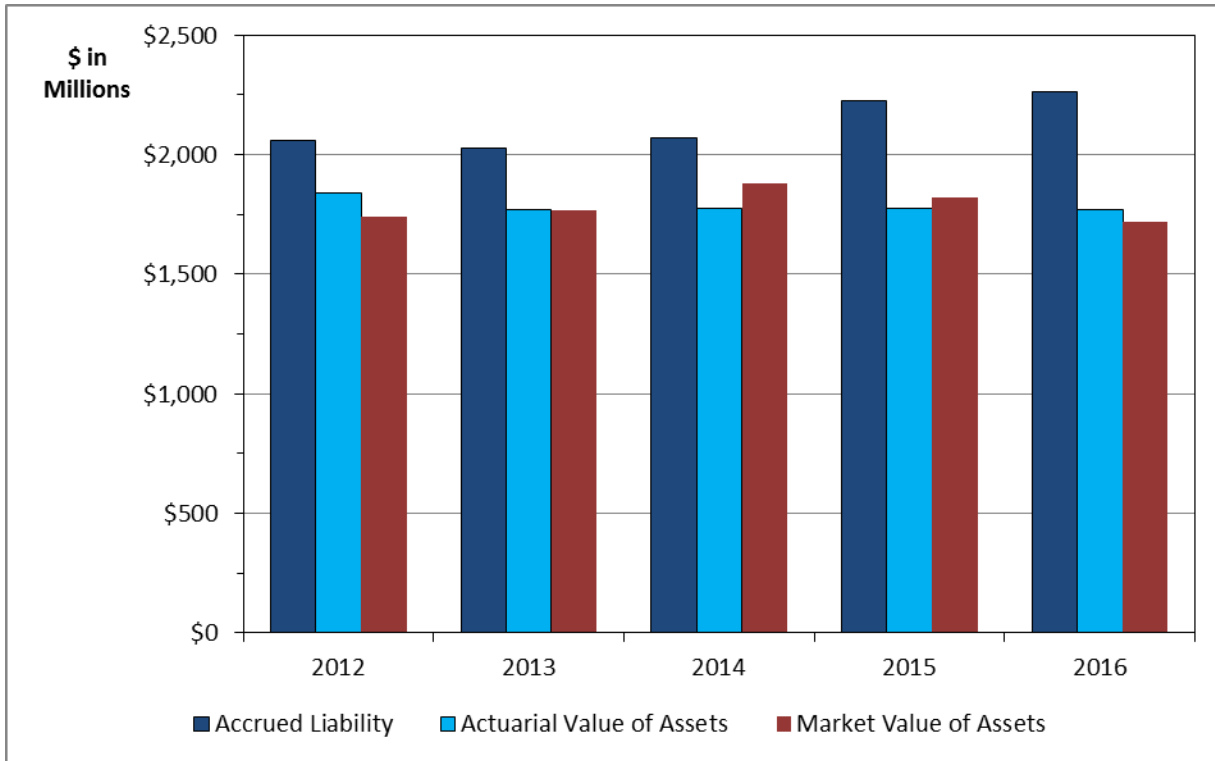
Five-Year History of Funded Ratio Based on Actuarial Value of Assets
(\$ Amounts in Thousands)

Valuation as of January 1	Actuarial Value of Assets (a)	Actuarial Accrued Liability	Funded Ratio (a / b)	Unfunded Actuarial Accrued	Covered Payroll (c)	Unfunded as a Percentage of Covered Payroll
2016	\$ 1,767,420	\$ 2,262,851	78.1%	\$ 495,431	\$ 194,872	254.2%
2015	1,773,638	2,222,620	79.8%	448,982	191,432	234.5%
2014	1,772,750	2,069,547	85.7%	296,797	188,605	157.4%
2013	1,768,435	2,025,319	87.3%	256,884	189,132	135.8%
2012	1,836,543	2,059,554	89.2%	223,011	190,748	116.9%

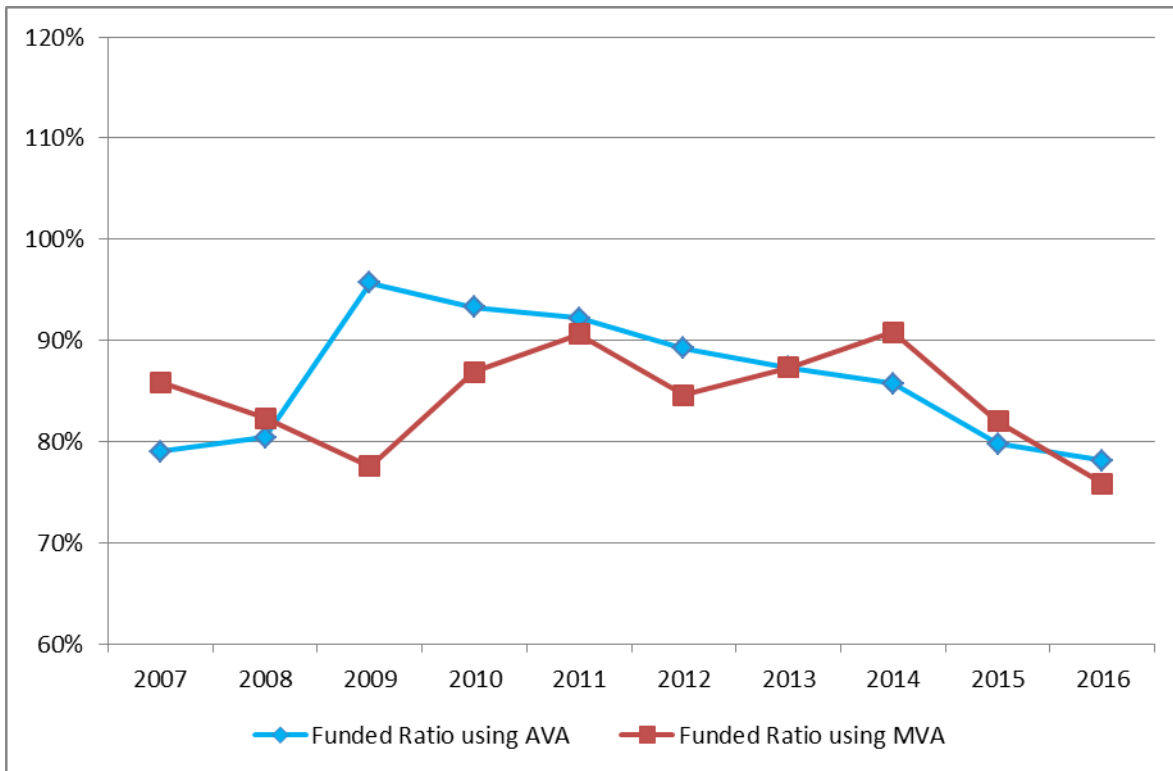
Five-Year History of Funded Ratio Based on Market Value of Assets
(\$ Amounts in Thousands)

Valuation as of January 1	Market Value of Assets (a)	Actuarial Accrued Liability (b)	Funded Ratio (a / b)	Unfunded Actuarial Accrued Liability (b - a)	Covered Payroll (c)	Unfunded as a Percentage of Covered Payroll [(b - a) / c]
2016	\$ 1,716,152	\$ 2,262,851	75.8%	\$ 546,699	\$ 194,872	280.5%
2015	1,822,579	2,222,620	82.0%	400,041	191,432	209.0%
2014	1,879,234	2,069,547	90.8%	190,313	188,605	100.9%
2013	1,768,435	2,025,319	87.3%	256,884	189,132	135.8%
2012	1,742,107	2,059,554	84.6%	317,447	190,748	166.4%

Chart of Five-Year History of Accrued Liability and Actuarial Value of Assets



Ten-Year History of Funded Ratio



Rate of Return

The investment return of the trust fund (i.e. total return including both realized and unrealized gains and losses) for fiscal years 2011 through 2015 is shown in the table below. The return based on the actuarial value of assets used for determining annual contribution rates is also shown.

The rate of return on market value reflects the investment earnings on the market value of assets from the beginning of the fiscal year to the end of the fiscal year. The actuarial assets are the assets recognized for valuation purposes. Actuarial assets are based on a smoothed market value that spreads the difference between the actual and expected return over a period of ten years. The rate of return on the actuarial value of assets is a measure of the increase in the actuarial value of assets from the beginning of the fiscal year to the end of the fiscal year. The rates of return shown below have been developed by the actuary for illustrative purposes only. They are based on simplifying assumptions and, as such, likely will not exactly match the returns presented by your investment consultants. The reader is encouraged to use the returns developed by the investment consultants.

Five-Year History of Asset Returns

As of 12/31	Asset Values		Rates of Return		
	Market	Actuarial	Market	Actuarial	Assumed
2011	\$ 1,742,106,887	\$ 1,836,542,926	0.2%	3.5%	8.0%
2012	1,768,434,628	1,768,434,628	10.8%	4.8%	8.0%
2013	1,879,234,430	1,772,749,644	15.0%	8.7%	8.0%
2014	1,822,579,695	1,773,638,120	5.2%	8.9%	8.0%
2015	1,716,151,763	1,767,419,752	2.0%	8.0%	8.0%

Compound Rate of Return (five years): 6.5% 6.8% 8.0%

GASB No. 67 and GASB No. 68 Disclosure

Please note that GASB Statement No. 25 (Financial Reporting for Defined Benefit Pension Plans) is applicable for fiscal years ending prior to 2014 and has been replaced by GASB Statement No. 67 (Financial Reporting for Pension Plans) for fiscal years ending 2014 and later. Similarly, GASB Statement No. 27 (Accounting for Pensions by State and Local Governmental Employers) is applicable for fiscal years ending prior to 2015 and has been replaced by GASB Statement No. 68 (Accounting and Financial Reporting for Pensions) for fiscal years ending 2015 and later.

The discount rate used to measure the total pension liability was 8.0%. The projection of cash flows used to determine the discount rate assumed that System contributions will continue to follow the current funding policy. Based on those assumptions, the System's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members.

Net Pension Liability (Asset)		
	December 31, 2015	December 31, 2014
Total Pension Liability	\$ 2,262,851,177	\$ 2,222,620,399
Plan Fiduciary Net Position	<u>1,716,151,763</u>	<u>1,822,579,695</u>
Net Pension Liability (Asset)	\$ 546,699,414	\$ 400,040,704
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability (Asset)	75.84%	82.00%
Covered Employee Payroll	\$ 191,432,915	\$ 188,605,492
Net Pension Liability (Asset) as a Percentage of Covered Employee Payroll	285.58%	212.10%

Please see Tables 12 – 17 for a summary of all GASB 67 and GASB 68 results.

TABLE 1 - Summary of Results of Actuarial Valuation

Item	January 1, 2016	January 1, 2015
Participant Data		
1. Number of Participants		
a) Active Participants	3,619	3,680
b) Participants with Deferred Benefits	1,387	1,370
c) Participants Receiving Benefits	7,991	7,979
d) Total	12,997	13,029
2. Annualized Salaries*	\$ 194,871,557	\$ 191,432,915
3. Annual Annuities	\$ 169,278,563	\$ 165,058,644
Valuation Results		
4. Present Value of Future Benefits		
a) Active Participants	\$ 595,350,716	\$ 605,180,196
b) Participants with Deferred Benefits	74,513,301	70,895,992
c) Participants Receiving Benefits	1,697,765,361	1,649,471,985
d) Total	\$ 2,367,629,378	\$ 2,325,548,173
5. Present Value of Future Normal Cost	\$ 104,778,201	\$ 102,927,774
6. Actuarial Accrued Liability: (4 - 5)	\$ 2,262,851,177	\$ 2,222,620,399
7. Actuarial Value of Assets	\$ 1,767,419,752	\$ 1,773,638,120
8. Funded Status: (7 / 6)	78.1 %	79.8 %
9. Unfunded Actuarial Accrued Liability: (6 - 7)	\$ 495,431,425	\$ 448,982,279
10. Normal Cost for the Plan Year	\$ 16,094,324	\$ 15,740,283
Actual Funding Contribution and Annual Required Contribution for Fiscal Year **		
11. Actual Funding Contribution Calculated by Actuary		
a) Normal Cost with Interest	\$ 17,381,870	\$ 16,999,506
b) Net Annual Amortization Payments	44,459,669	39,300,143
c) Expenses	1,225,857	1,554,175
d) Total Contribution: ((a + b + c), not less than zero)	\$ 63,067,396	\$ 57,853,824

* For 2015, the amount displayed has been adjusted to reflect that there were 27 pay periods in 2014 rather than the typical 26

** Effective January 1, 2011 Elected Officials and Non-Represented employees contributed 2% of compensation. For all Non-Represented employees (other than elected officials), the contribution rate increased to 4% of compensation effective December 11, 2011. During 2011, State mandated contributions were implemented. The amounts shown above are gross of member contributions.

TABLE 2 - Security of Promised Benefits - Unfunded Actuarial Accrued Liability - Funded Status

Item	January 1, 2016	January 1, 2015
1. Actuarial Accrued Liability		
a. Active Participants		
Retirement Benefits	\$ 454,933,671	\$ 467,388,602
Withdrawal Benefits	27,672,128	26,864,486
Disability Benefits	4,622,567	4,743,238
Death Benefits	<u>3,344,149</u>	<u>3,256,096</u>
Total Active	490,572,515	502,252,422
b. Participants with Deferred Benefits	74,513,301	70,895,992
c. Participants Receiving Benefits	<u>1,697,765,361</u>	<u>1,649,471,985</u>
d. Total All Participants	2,262,851,177	2,222,620,399
2. Actuarial Value of Assets	1,767,419,752	1,773,638,120
3. Unfunded Actuarial Accrued Liability (1d - 2)	495,431,425	448,982,279
4. Funded Status (2 / 1d)	78.1%	79.8%

The interest rate used as of January 1, 2016 and January 1, 2015 was 8.00%

TABLE 3 – Unexpected Change in Unfunded Actuarial Accrued Liability for Plan Year Ending

Item	December 31, 2015	December 31, 2014
1. Actuarial Accrued Liability at the Beginning of the Year	\$ 2,222,620,399	\$ 2,069,546,764
2. Increases/(Decreases) During the Year		
a. Normal Cost for the Year	15,740,283	14,660,305
b. Benefit Payments and Refunds	(188,819,565)	(177,366,124)
c. Assumed Interest to End of Year	171,661,372	159,575,042
d. Plan and Assumption Changes	-	-
e. Total: (a + b + c + d)	(1,417,910)	(3,130,777)
3. Expected Liability at the End of the Year: (1 + 2)	2,221,202,489	2,066,415,987
4. Impact of COLA reinclusion	N/A	178,053,780
5. Expected Accrued Liability at End of Year After COLA Reinclusion (3 + 4)	NA	2,244,469,767
6. Actuarial Accrued Liability at the End of the Year	2,262,851,177	2,222,620,399
7. Other Unexpected Liability Changes at End of Year (6 - 5)	-	(21,849,368)
8. Liability Unexpected Change on UAL: (6 - 3) for 2015; (4 + 7) for 2014	\$ 41,648,688	\$ 156,204,412
9. Actuarial Value of Assets at the Beginning of the Year	\$ 1,773,638,120	\$ 1,772,749,644
10. Increases/(Decreases) During the Year		
a. County Contributions	39,080,593	19,005,395
b. Member Contributions	9,324,866	10,051,605
c. Benefit Payments and Refunds	(188,819,565)	(177,366,124)
d. Administrative Expenses Payable to the County	(1,204,226)	(1,329,904)
e. Assumed Interest to End of Year	135,116,167	135,256,142
f. Total: (a + b + c + d + e)	(6,502,165)	(14,382,886)
11. Expected Actuarial Assets at the End of the Year (9 + 10)	1,767,135,955	1,758,366,758
12. Actuarial Value of Assets at the End of the Year	1,767,419,752	1,773,638,120
13. Actuarial Asset Unexpected Change on UAL: (11 - 12)	\$ (283,797)	\$ (15,271,362)
14. Total Unexpected Change in UAL: (8 + 13)	\$ 41,364,891	\$ 140,933,050

The unexpected change in UAL for the plan year ending December 31, 2014 includes the effects of the re-inclusion of the COLA liabilities that were not included in the valuations for the plan year ending December 31, 2013 and December 31, 2012.

TABLE 4 - Amortization Schedule for Funding

For Actual Funding Contribution for 2016

Type of Payment	Amortization Period				Balances		Payment
	Date Created	Initial Years	Remaining Years	Last Payment	Initial	Outstanding	
1. Charges							
Reestablished unfunded	1/1/2015	21	20	2035	\$ 448,982,279	\$ 445,600,718	\$ 39,987,896
Increase to unfunded	1/1/2016	20	20	2035	\$ 49,830,707	\$ 49,830,707	\$ 4,471,773
Total Charges						\$ 495,431,425	44,459,669
2. Credits							
3. Net Amount (1 - 2)						\$ 495,431,425	\$ 44,459,669

For Budget Contribution for 2017

Type of Payment	Amortization Period				Balances		Payment
	Date Created	Initial Years	Remaining Years	Last Payment	Initial	Outstanding	
1. Charges							
Reestablished unfunded	1/1/2015	21	19	2035	\$ 448,982,279	\$ 441,260,879	\$ 40,687,684
Increase to unfunded	1/1/2016	20	19	2035	\$ 49,830,707	\$ 49,345,391	\$ 4,550,029
Loss	1/1/2017	20	20	2036	\$ 7,732,969	\$ 7,732,969	\$ 693,951
Variance	1/1/2017	5	5	2021	3,631,396	3,631,396	\$ 909,506
Total Charges						\$ 501,970,635	46,841,170
2. Credits							
3. Net Amount (1 - 2)						\$ 501,970,635	\$ 46,841,170

TABLE 5 - Development of Normal Cost for Current and Prior Plan Year Actual Funding Calculations

Item	January 1, 2016	January 1, 2015
1. Present Value of Projected Benefits		
a. Active Participants		
Retirement Benefits	\$ 539,947,745	\$ 551,900,428
Withdrawal Benefits	41,230,704	39,095,107
Disability Benefits	6,509,230	6,596,585
Death Benefits	7,663,037	7,588,076
Total Active	595,350,716	605,180,196
b. Participants with Deferred Benefits	74,513,301	70,895,992
c. Participants Receiving Benefits	1,697,765,361	1,649,471,985
d. Total All Participants	2,367,629,378	2,325,548,173
2. Actuarial Value of Assets	1,767,419,752	1,773,638,120
3. Unfunded Actuarial Accrued Liability	495,431,425	448,982,279
4. Present Value of Future Normal Costs (1d - 2 - 3)	104,778,201	102,927,774
5. Individual Normal Cost		
Retirement Benefits	\$ 12,867,341	\$ 12,896,983
Withdrawal Benefits	2,338,415	1,956,427
Disability Benefits	602,552	600,195
Death Benefits	286,016	286,678
Total Individual Normal Cost	16,094,324	15,740,283
6. Normal Cost for the Plan Year	16,094,324	15,740,283

* Prior-year earnings increased by the salary assumption and limited by the IRS compensation limit for those under the mandatory retirement age.

TABLE 6 - Gross Contribution Requirements

Item	2017 Budget	2016	
		Actual	Budget
1. Normal Cost with Interest	\$ 17,372,000	\$ 17,381,870	\$ 17,070,000
2. Net Annual Amortizations	46,841,000	44,459,669	40,785,000
3. Expenses	<u>1,248,000</u>	<u>1,225,857</u>	<u>1,581,000</u>
4. Total Contribution (1 + 2 +3, not less than zero)	\$ 65,461,000	\$ 63,067,396	\$ 59,436,000

The budgeted contributions shown above for the 2017 and 2016 plan years were estimated based on participant data as of January 1, 2016, and January 1, 2015, respectively.

The 2016 Actual and Budget Contributions are based on financing all unfunded actuarial accrued liability (UAAL) as of January 1, 2016 over 20 years. For the 2017 Budget Contribution, a base for unexpected change in UAAL during 2016 is added and amortized over 20 years. In addition, a contribution variance base is added and amortized over 5 years for the amount of the 2016 Actual Contribution determined in this report that is not contributed during 2016.

Note that for purposes of the contribution rates shown in the report, these amounts are gross contribution amounts. It is our understanding that County staff will net out the amount of employee contributions that are collected to arrive at a net County contribution.

STATE MANDATED MEMBER CONTRIBUTIONS

Item	Results Based on Current Contributions			
	Non-Contributors	Public Safety	General	All Members
Valuation Results as of January 1, 2016				
1. Present Value of Future Benefits				
a) Active Participants *	\$ -	\$ 103,037,819	\$ 492,312,897	\$ 595,350,716
b) Participants with Deferred Benefits	74,513,301	-	-	74,513,301
c) Participants Receiving Benefits	1,697,765,361	-	-	1,697,765,361
d) Total	\$ 1,772,278,662	\$ 103,037,819	\$ 492,312,897	\$ 2,367,629,378
2. Present Value of Future Normal Cost	\$ -	\$ 11,705,460	\$ 93,072,741	\$ 104,778,201
3. Actuarial Accrued Liability: (1 - 2)	\$ 1,772,278,662	\$ 91,332,359	\$ 399,240,156	\$ 2,262,851,177
4. Actuarial Value of Assets	\$ 1,384,253,788	\$ 71,335,940	\$ 311,830,024	\$ 1,767,419,752
5. Funded Status: (4 ÷ 3)	78.1%	78.1%	78.1%	78.1%
6. Unfunded Actuarial Accrued Liability: (3 - 4)	\$ 388,024,874	\$ 19,996,419	\$ 87,410,132	\$ 495,431,425
7. Total Normal Cost for the Plan Year	\$ -	\$ 1,889,617	\$ 14,204,707	\$ 16,094,324
Projected Employee Contribution for 2017				
1. Actual Contribution for 2016				
a) Normal Cost with Interest	\$ -	\$ 2,040,786	\$ 15,341,084	\$ 17,381,870
b) Net Annual Amortization Payments **	34,821,080	1,794,465	7,844,124	44,459,669
c) Expenses	960,098	49,478	216,281	1,225,857
d) Total Contribution: ((a + b + c), not less than zero)	\$ 35,781,178	\$ 3,884,729	\$ 23,401,489	\$ 63,067,396
2. Employee Contribution (50% of 1d for Contributors)	N/A	\$ 1,942,365	\$ 11,700,745	N/A
3. Expected Salaries in 2016	\$ -	\$ 22,945,144	\$ 171,926,413	\$ 194,871,557
4. Employee Contribution Rate (2 ÷ 3 ÷ 1.08 ^{1/2})	N/A	8.1%	6.5%	N/A

* The actives in the Public Safety group include 307 members comprised of Represented Firefighters and Sheriffs and Non-Represented Firefighters and Sheriffs.

** The Net Annual Amortization Payments for the Contributors was prorated based on the contributors' actuarial accrued liability compared to total actuarial accrued liability of the Retirement System.

TABLE 7 - Summary Statement of Market Value of Plan Assets

Asset Category	Market Value as of December 31, 2015	Market Value as of December 31, 2014
1. Cash and Cash Equivalents	\$ 75,932,273	\$ 76,430,193
2. Investments at Fair Value		
a. Domestic common and preferred stocks	\$ 578,057,529	\$ 635,015,427
b. Futures contracts	158,689	-
c. Corporate bonds	291,782,236	331,429,376
d. International common and preferred stocks	146,364,857	156,474,024
e. Federal agency and mortgage-backed certificates	-	-
f. International fixed income	-	-
g. Venture Capital	-	-
h. Real estate investment trusts	198,099,895	180,397,035
i. Long/Short hedge funds	177,426,363	186,478,839
j. Infrastructure	151,437,209	151,805,271
k. Private equity	91,577,424	73,703,610
l. Total Investments	1,634,904,202	1,715,303,582
3. Contributions Receivable for OBRA and ERS	39,520,593	19,445,395
4. (Payable) to OBRA Pension Plan	(1,292,204)	(1,655,306)
5. Net All Other Receivables (Liabilities)	(32,913,101)	13,055,831
6. Net Assets Held in Trust for ERS Pension Benefits (1 + 2l + 3 + 4 + 5)	\$ 1,716,151,763	\$ 1,822,579,695

TABLE 8 - Summary Reconciliation of Market Value of Plan Assets

Item	Amount
1. Market Value of Assets as of December 31, 2014	\$ 1,822,579,695
2. Contributions for Plan Year	
a. County	\$ 39,080,593
b. Member	<u>9,324,866</u>
c. Total	48,405,459
3. Disbursements for Plan Year	
a. Benefit payments and refunds	\$ 188,819,565
b. Administrative expenses payable to County	<u>1,204,226</u>
c. Total	190,023,791
4. Market Value of Assets as of December 31, 2015	1,716,151,763
5. Net Investment Income * (4 - 1 - 2c + 3c)	35,190,400
6. Expected Net Investment Income (8.00% per annum)	139,031,493
7. Unexpected Change of Market Value of Assets (5 - 6)	(103,841,093)
8. Estimated Rate of Return	2.0%

*Net Investment Income is the change in the value of assets for reasons other than contributions and disbursements.

TABLE 9 - Derivation of Actuarial Value of Plan Assets

1. Market Value of Assets as of December 31, 2015				\$ 1,716,151,763
2. Determination of Unexpected Change in Assets				
Year	Unexpected Change	Percentage Deferred	Amount Deferred	
2015	\$ (103,841,093)	90%	\$ (93,456,984)	
2014	\$ (50,790,631)	80%	\$ (40,632,505)	
2013	\$ 118,316,429	70%	\$ 82,821,500	
2012	\$ -	60%	\$ -	
2011	\$ -	50%	\$ -	
2010	\$ -	40%	\$ -	
2009	\$ -	30%	\$ -	
2008	\$ -	20%	\$ -	
2007	\$ -	10%	\$ -	
2006	\$ -	%	\$ -	
Total				(51,267,989)
3. Actuarial Value of Assets				\$ 1,767,419,752
(1 - 2)				

Assets were re-established at market value on January 1, 2013, so actual Unexpected Changes prior to 2013 are not applicable

TABLE 10 - Summary Reconciliation of Actuarial Value of Plan Assets

Item	For Year Ending December 31, 2015	For Year Ending December 31, 2014
1. Actuarial Value of Assets at the Beginning of the year	\$ 1,773,638,120	\$ 1,772,749,644
2. Contributions for Plan Year		
a. County	\$ 39,080,593	\$ 19,005,395
b. Member	<u>9,324,866</u>	<u>10,051,605</u>
c. Total	48,405,459	29,057,000
3. Disbursements for Plan Year		
a. Benefit payments and refunds	\$ 188,819,565	\$ 177,366,124
b. Administrative expenses payable to County	<u>1,204,226</u>	<u>1,329,904</u>
c. Total	190,023,791	178,696,028
4. Actuarial Value of Assets at the End of the Year	1,767,419,752	1,773,638,120
5. Net Investment Income * (4 - 1 - 2c + 3c)	135,399,964	150,527,504
6. Expected Net Investment Income (8.00% per annum)	135,116,167	135,256,142
7. Unexpected Change of Actuarial Value of Assets (5 - 6)	283,797	15,271,362
8. Estimated Rate of Return	8.0%	8.9%

* Net Investment Income is the change in the value of assets for reasons other than contributions and disbursements.

TABLE 11 - Contributions for 2015 Plan Year and Variance from the Funding Calculation Contribution

Item					Amount
1. Total Funding Calculation, End-of-Year Basis, for 2015 Plan Year (from January 1, 2015 actuarial valuation report)					\$ 57,853,824
2. Total Employer Contributions Made:					
Contribution Made	Fraction of a Year Invested	Contribution Amount	Interest to Year End*	End of Year Amount	
Bi-weekly	50.0%	\$ -	\$ -	\$ -	
11/20/2015	11.5%	10,000,000	88,951	10,088,951	
11/25/2015	10.1%	10,000,000	78,320	10,078,320	
12/4/2015	7.7%	10,000,000	59,213	10,059,213	
12/11/2015	5.8%	<u>9,080,593</u>	<u>40,297</u>	<u>9,120,890</u>	
Total		\$ 39,080,593	\$ 266,781	\$ 39,347,374	
3. Total Member Contributions Made:					
Contribution Made	Fraction of a Year Invested	Contribution Amount	Interest to Year End*	End of Year Amount	
Bi-weekly	50.0%	\$ 9,324,866	\$ 365,819	\$ 9,690,685	
4. Variance from Funding Calculation Amount** (2 + 3 - 1)					\$ (8,815,765)

Note that for purposes of the contribution rates shown in the report, these amounts are gross contribution amounts. It is our understanding that County staff will net out the amount of employee contributions that are collected to arrive at a net County contribution.

TABLE 12 – Actuarial Methods and Assumptions for GASB 67/68 Disclosure Purposes

The total pension liability as of December 31, 2015 was determined as of December 31, 2015 using the following actuarial methods and assumptions. All other assumptions such as retirement rates, termination rates, and disability rates used to determine the total pension liability are set forth in Table 18 – Description of Actuarial Assumptions and Methods.

Please note that the results presented as of December 31, 2014 are an update and a revision to the results contained in the 2014 Actuarial Valuation Report dated August 2015. All previous GASB results presented is superseded by the results presented herein.

Valuation Date:	December 31, 2015
Discount Rate:	8.0% net of all administrative expenses, compounded annually
Actuarial Cost Method:	Entry Age Normal – Level Percentage of Pay
Amortization Method:	For pension expense; the difference between expected and actual liability experience and changes of assumptions are amortized over the average expected remaining service lives of all members as of the Valuation Date. The difference between projected and actual earnings is amortized over a closed period of five years.
Mortality:	Healthy pensioners: The sex-distinct UP-1994 Mortality Table with Projection scale AA to 2012 and then fully generational thereafter using scale AA. Active members: 70% of the rates applicable to healthy pensioners.
Experience Study:	The actuarial assumptions used were based on the results of an actuarial experience study for the period January 1, 2007 through December 31, 2011.

TABLE 13 – GASB 67 Net Pension Liability as of December 31, 2015 and December 31, 2014

Schedule of Changes in Net Pension Liability		
	Fiscal Year Ending December 31, 2015	Fiscal Year Ending December 31, 2014
Total Pension Liability		
Service Cost	\$ 15,740,283	\$ 15,299,451
Interest	171,661,372	172,040,282
Changes of Benefit Terms	-	-
Difference between Expected and Actual Experience	41,648,688	(17,331,161)
Change of Assumptions	-	-
Benefit Payments, including Refund of Member Contributions	<u>(188,819,565)</u>	<u>(177,366,124)</u>
Net Change in Total Pension Liability	40,230,778	(7,357,552)
Total Pension Liability - Beginning of Year	\$ 2,222,620,399	\$ 2,229,977,951
Total Pension Liability - End of Year	\$ 2,262,851,177	\$ 2,222,620,399
Plan Fiduciary Net Position		
Employer Contributions	\$ 39,080,593	\$ 19,005,395
Member Contributions	9,324,866	10,051,605
Net Investment Income	39,451,297	96,721,345
Benefit Payments, including Refund of Member Contributions	(188,819,565)	(177,366,124)
Administrative Expenses	(5,465,123)	(5,066,956)
Other	-	-
Net Change in Plan Fiduciary Net Position	<u>(106,427,932)</u>	<u>(56,654,735)</u>
Plan Fiduciary Net Position - Beginning of Year	\$ 1,822,579,695	\$ 1,879,234,430
Plan Fiduciary Net Position - End of Year	\$ 1,716,151,763	\$ 1,822,579,695

Net Pension Liability (Asset)		
	December 31, 2015	December 31, 2014
Total Pension Liability	\$ 2,262,851,177	\$ 2,222,620,399
Plan Fiduciary Net Position	<u>1,716,151,763</u>	<u>1,822,579,695</u>
Net Pension Liability (Asset)	\$ 546,699,414	\$ 400,040,704
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability (Asset)	75.84%	82.00%
Covered Employee Payroll	\$ 191,432,915	\$ 188,605,492
Net Pension Liability (Asset) as a Percentage of Covered Employee Payroll	285.58%	212.10%

TABLE 14 – Sensitivity of the Net Pension Liability as of December 31, 2015 and December 31, 2014 to Changes in the Discount Rate

Sensitivity of the Net Pension Liability to Changes in the Discount Rate December 31, 2015			
	1% Decrease	Current	1% Increase
Discount Rate	7.00%	8.00%	9.00%
Net Pension Liability (Asset)	770,471,173	546,699,414	356,602,059

Sensitivity of the Net Pension Liability to Changes in the Discount Rate December 31, 2014			
	1% Decrease	Current	1% Increase
Discount Rate	7.00%	8.00%	9.00%
Net Pension Liability (Asset)	619,184,225	400,040,704	213,727,573

TABLE 15 – Pension Expense for Year Ended December 31, 2015 and December 31, 2014 and Deferred Inflows & Outflows of Resources Related to Pensions

Exhibit 1: Pension Expense

Pension Expense. For the period ending December 31, 2016, pension expense (based on a measurement date of December 31, 2015) is shown in the table below. The corresponding results for the period ending December 31, 2015 are shown for comparison purposes.

Pension Expense for the Plan Fiscal Year Ended		
	December 31, 2015	December 31, 2014
	(For Plan Sponsor 2016 FY)	(For Plan Sponsor 2015 FY)
Service cost	\$ 15,740,283	\$ 15,299,451
Interest	171,661,372	172,040,282
Projected earnings on plan investments	(139,031,493)	(143,774,925)
Employee contributions	(9,324,866)	(10,051,605)
Administrative expense	5,465,123	5,066,956
Current priod:		
Difference between expected and actual experience	15,425,440	(6,665,832)
Changes in assumptions	-	-
Difference between expected and actual investment earnings	19,916,040	9,410,716
Changes of benefit terms	-	-
Recognition of prior years'		
Deferred outflows of resources	9,410,716	-
Deferred inflows of resources	(6,665,832)	-
Total Pension Expense	82,596,783	41,325,043

For 2015, the difference between expected and actual experience is recognized over the average expected remaining service lives of active and inactive members as of December 31, 2015 (2.7 years).

For 2014, the difference between expected and actual experience is recognized over the average expected remaining service lives of active and inactive members as of December 31, 2014 (2.6 years).

The difference between projected and actual investment earnings is recognized over 5.0 years.

Details of the deferred inflows and outflows of resources are shown in Exhibit 2 and Exhibit 3.

TABLE 15 – Pension Expense for Year Ended December 31, 2015 and December 31, 2014 and Deferred Inflows & Outflows of Resources Related to Pensions

Exhibit 2: Amortization of Differences between Expected and Actual Liability Experience

Measurement Year End	2014	2015	2016	2017	2018
Amount Established	\$ (17,331,161)	\$ 41,648,688			
Recognition Period	2.6	2.7			
Annual Recognition	\$ (6,665,832)	\$ 15,425,440			

Measurement Year End	Amount Recognized					Outflows	Inflows	Total
	2014	2015	2016	2017	2018			
2014	\$ (6,665,832)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (6,665,832)	\$ (6,665,832)
2015	(6,665,832)	15,425,440	-	-	-	15,425,440	(6,665,832)	8,759,608
2016	(3,999,497)	15,425,440	-	-	-	15,425,440	(3,999,497)	11,425,943
2017	-	10,797,808	-	-	-	10,797,808	-	10,797,808

Measurement Year End	Deferred Balance					Outflows	Inflows	Total
	2014	2015	2016	2017	2018			
2014	\$ (10,665,329)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (10,665,329)	\$ (10,665,329)
2015	(3,999,497)	26,223,248	-	-	-	26,223,248	(3,999,497)	22,223,751
2016	-	10,797,808	-	-	-	10,797,808	-	10,797,808
2017	-	-	-	-	-	-	-	-

TABLE 15 – Pension Expense for Year Ended December 31, 2015 and Deferred Inflows & Outflows of Resources Related to Pensions

Exhibit 3: Amortization of Differences between Projected and Actual Earnings

Measurement Year End	2014	2015	2016	2017	2018
Amount Established	\$ 47,053,580	\$ 99,580,196			
Recognition Period	5.00	5.00			
Annual Recognition	\$ 9,410,716	\$ 19,916,040			

Measurement Year End	Amount Recognized					Outflows	Inflows	Total
	2014	2015	2016	2017	2018			
2014	\$ 9,410,716	\$ -	\$ -	\$ -	\$ -	\$ 9,410,716	\$ -	\$ 9,410,716
2015	9,410,716	19,916,040	-	-	-	29,326,756	-	29,326,756
2016	9,410,716	19,916,040	-	-	-	29,326,756	-	29,326,756
2017	9,410,716	19,916,040	-	-	-	29,326,756	-	29,326,756
2018	9,410,716	19,916,040	-	-	-	29,326,756	-	29,326,756
2019	-	19,916,036	-	-	-	19,916,036	-	19,916,036

Measurement Year End	Deferred Balance					Outflows	Inflows	Total
	2014	2015	2016	2017	2018			
2014	\$ 37,642,864	\$ -	\$ -	\$ -	\$ -	\$ 37,642,864	\$ -	\$ 37,642,864
2015	28,232,148	79,664,156	-	-	-	107,896,304	-	107,896,304
2016	18,821,432	59,748,116	-	-	-	78,569,548	-	78,569,548
2017	9,410,716	39,832,076	-	-	-	49,242,792	-	49,242,792
2018	-	19,916,036	-	-	-	19,916,036	-	19,916,036
2019	-	-	-	-	-	-	-	-

TABLE 16 – Projection of Fiduciary Net Position

Year	Projected Beginning Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expense	Projected Investment Earnings	Projected Ending Fiduciary Net Position
2016	\$ 1,716,151,763	\$ 59,436,000	\$ 185,313,628	\$ 5,563,291	\$ 134,359,632	\$ 1,719,070,476
2017	1,719,070,476	63,930,357	188,223,211	5,178,791	134,179,208	1,723,778,039
2018	1,723,778,039	64,053,513	191,334,155	4,837,244	134,167,482	1,725,827,635
2019	1,725,827,635	64,296,754	194,160,136	4,529,288	133,980,486	1,725,415,451
2020	1,725,415,451	64,619,951	195,770,144	4,250,990	133,667,373	1,723,681,641
2021	1,723,681,641	65,025,700	196,979,633	3,996,550	133,282,845	1,721,014,003
2022	1,721,014,003	64,662,895	198,111,233	3,761,804	132,842,021	1,716,645,882
2023	1,716,645,882	65,263,636	198,472,405	3,536,164	132,302,481	1,712,203,430
2024	1,712,203,430	66,972,507	199,132,551	3,324,602	131,756,242	1,708,475,026
2025	1,708,475,026	68,236,109	199,285,806	3,125,448	131,296,686	1,705,596,567
2026	1,705,596,567	68,514,730	199,499,775	2,931,734	130,906,986	1,702,586,774
2027	1,702,586,774	68,853,039	199,676,735	2,740,028	130,509,796	1,699,532,846
2028	1,699,532,846	69,241,730	199,981,152	2,544,716	130,101,264	1,696,349,972
2029	1,696,349,972	69,668,002	199,620,818	2,349,887	129,708,871	1,693,756,140
2030	1,693,756,140	70,104,776	199,124,629	2,158,774	129,371,829	1,691,949,342
2031	1,691,949,342	70,566,089	198,512,632	1,966,189	129,101,145	1,691,137,755
2032	1,691,137,755	71,141,101	197,424,655	1,773,557	128,928,714	1,692,009,358
2033	1,692,009,358	71,798,555	196,080,916	1,599,870	128,915,742	1,695,042,869
2034	1,695,042,869	72,537,647	193,895,861	1,440,297	129,119,732	1,701,364,090
2035	1,701,364,090	73,349,188	191,693,977	1,294,922	129,598,469	1,711,322,848
2036	1,711,322,848	11,326,429	188,962,441	1,161,863	130,398,589	1,662,923,562
2037	1,662,923,562	10,182,654	185,696,967	1,038,809	126,558,813	1,612,929,253
2038	1,612,929,253	9,093,147	182,086,517	923,384	122,610,917	1,561,623,416
2039	1,561,623,416	8,052,045	178,106,001	818,271	118,580,656	1,509,331,845
2040	1,509,331,845	7,063,286	173,843,785	719,307	114,487,381	1,456,319,420
2041	1,456,319,420	6,121,967	169,240,564	626,277	110,354,442	1,402,928,988
2042	1,402,928,988	5,224,521	164,281,190	541,420	106,211,607	1,349,542,506
2043	1,349,542,506	4,374,323	159,274,072	461,888	102,075,113	1,296,255,982
2044	1,296,255,982	2,064,826	153,946,399	390,200	97,965,307	1,241,949,516
2045	1,241,949,516	537,109	148,607,827	325,710	93,779,944	1,187,333,032
2046	1,187,333,032	426,155	143,149,215	267,268	89,579,205	1,133,921,909
2047	1,133,921,909	333,698	137,544,497	214,852	85,485,325	1,081,981,583
2048	1,081,981,583	257,536	132,003,400	169,766	81,512,328	1,031,578,281
2049	1,031,578,281	195,334	126,295,743	131,727	77,674,321	983,020,466
2050	983,020,466	145,279	120,582,826	100,365	73,989,365	936,471,919
2051	936,471,919	105,962	115,008,381	74,978	70,464,376	891,958,898
2052	891,958,898	75,648	109,386,732	54,872	67,108,198	849,701,140
2053	849,701,140	52,393	103,901,466	38,997	63,930,390	809,743,460
2054	809,743,460	35,031	98,520,625	26,988	60,935,506	772,166,384
2055	772,166,384	22,806	93,214,441	18,053	58,130,538	737,087,234
2056	737,087,234	14,425	88,025,068	11,727	55,522,856	704,587,720
2057	704,587,720	8,611	82,897,168	7,384	53,120,679	674,812,458
2058	674,812,458	5,079	77,891,905	4,412	50,932,699	647,853,919
2059	647,853,919	2,806	73,013,730	2,610	48,965,985	623,806,370
2060	623,806,370	1,412	68,279,168	1,434	47,227,003	602,754,183
2061	602,754,183	585	63,705,360	733	45,721,713	584,770,388
2062	584,770,388	224	59,285,076	324	44,456,101	569,941,313
2063	569,941,313	82	55,021,048	124	43,436,899	558,357,122
2064	558,357,122	23	50,917,084	48	42,671,105	550,111,118
2065	550,111,118	6	46,971,399	12	42,166,188	545,305,901
2066	545,305,901	3	43,185,104	4	41,930,303	544,051,099
2067	544,051,099	-	39,393,242	-	41,978,672	546,636,529
2068	546,636,529	-	35,953,526	-	42,320,448	553,003,451
2069	553,003,451	-	32,679,659	-	42,958,237	563,282,029
2070	563,282,029	-	29,580,068	-	43,902,122	577,604,083

TABLE 17 – Actuarial Present Values of Projected Benefit Payments

Year	Projected Beginning	Projected Benefit	Funded Portion of	Unfunded Portion of	Present Value of	Present Value of	Present Value of
	<u>Fiduciary Net Position</u>	<u>Payments</u>	Projected Benefit	Projected Benefit	Funded Benefit	Unfunded Benefit	Benefit Payments
			Payments	Payments	Payments at 8.00%	Payments at 3.20%	Using Single Discount
							Rate of 8.00%
2016	\$ 1,716,151,763	\$ 185,313,628	\$ 185,313,628	\$ -	\$ 178,318,122	\$ -	178,318,122
2017	1,719,070,476	188,223,211	188,223,211	-	167,701,731	-	167,701,731
2018	1,723,778,039	191,334,155	191,334,155	-	157,845,830	-	157,845,830
2019	1,725,827,635	194,160,136	194,160,136	-	148,312,216	-	148,312,216
2020	1,725,415,451	195,770,144	195,770,144	-	138,464,857	-	138,464,857
2021	1,723,681,641	196,979,633	196,979,633	-	129,000,285	-	129,000,285
2022	1,721,014,003	198,111,233	198,111,233	-	120,130,889	-	120,130,889
2023	1,716,645,882	198,472,405	198,472,405	-	111,435,089	-	111,435,089
2024	1,712,203,430	199,132,551	199,132,551	-	103,523,831	-	103,523,831
2025	1,708,475,026	199,285,806	199,285,806	-	95,929,171	-	95,929,171
2026	1,705,596,567	199,499,775	199,499,775	-	88,918,674	-	88,918,674
2027	1,702,586,774	199,676,735	199,676,735	-	82,405,136	-	82,405,136
2028	1,699,532,846	199,981,152	199,981,152	-	76,417,376	-	76,417,376
2029	1,696,349,972	199,620,818	199,620,818	-	70,629,337	-	70,629,337
2030	1,693,756,140	199,124,629	199,124,629	-	65,234,979	-	65,234,979
2031	1,691,949,342	198,512,632	198,512,632	-	60,217,114	-	60,217,114
2032	1,691,137,755	197,424,655	197,424,655	-	55,451,005	-	55,451,005
2033	1,692,009,358	196,080,916	196,080,916	-	50,994,062	-	50,994,062
2034	1,695,042,869	193,895,861	193,895,861	-	46,690,558	-	46,690,558
2035	1,701,364,090	191,693,977	191,693,977	-	42,741,055	-	42,741,055
2036	1,711,322,848	188,962,441	188,962,441	-	39,011,128	-	39,011,128
2037	1,662,923,562	185,696,967	185,696,967	-	35,497,198	-	35,497,198
2038	1,612,929,253	182,086,517	182,086,517	-	32,228,737	-	32,228,737
2039	1,561,623,416	178,106,001	178,106,001	-	29,189,073	-	29,189,073
2040	1,509,331,845	173,843,785	173,843,785	-	26,380,144	-	26,380,144
2041	1,456,319,420	169,240,564	169,240,564	-	23,779,280	-	23,779,280
2042	1,402,928,988	164,281,190	164,281,190	-	21,372,647	-	21,372,647
2043	1,349,542,506	159,274,072	159,274,072	-	19,186,325	-	19,186,325
2044	1,296,255,982	153,946,399	153,946,399	-	17,170,878	-	17,170,878
2045	1,241,949,516	148,607,827	148,607,827	-	15,347,615	-	15,347,615
2046	1,187,333,032	143,149,215	143,149,215	-	13,688,770	-	13,688,770
2047	1,133,921,909	137,544,497	137,544,497	-	12,178,531	-	12,178,531
2048	1,081,981,583	132,003,400	132,003,400	-	10,822,138	-	10,822,138
2049	1,031,578,281	126,295,743	126,295,743	-	9,587,225	-	9,587,225
2050	983,020,466	120,582,826	120,582,826	-	8,475,511	-	8,475,511
2051	936,471,919	115,008,381	115,008,381	-	7,484,903	-	7,484,903
2052	891,958,898	109,386,732	109,386,732	-	6,591,702	-	6,591,702
2053	849,701,140	103,901,466	103,901,466	-	5,797,368	-	5,797,368
2054	809,743,460	98,520,625	98,520,625	-	5,089,939	-	5,089,939
2055	772,166,384	93,214,441	93,214,441	-	4,459,076	-	4,459,076
2056	737,087,234	88,025,068	88,025,068	-	3,898,920	-	3,898,920
2057	704,587,720	82,897,168	82,897,168	-	3,399,804	-	3,399,804
2058	674,812,458	77,891,905	77,891,905	-	2,957,895	-	2,957,895
2059	647,853,919	73,013,730	73,013,730	-	2,567,268	-	2,567,268
2060	623,806,370	68,279,168	68,279,168	-	2,222,957	-	2,222,957
2061	602,754,183	63,705,360	63,705,360	-	1,920,415	-	1,920,415
2062	584,770,388	59,285,076	59,285,076	-	1,654,782	-	1,654,782
2063	569,941,313	55,021,048	55,021,048	-	1,422,003	-	1,422,003
2064	558,357,122	50,917,084	50,917,084	-	1,218,460	-	1,218,460
2065	550,111,118	46,971,399	46,971,399	-	1,040,777	-	1,040,777
2066	545,305,901	43,185,104	43,185,104	-	886,001	-	886,001
2067	544,051,099	39,393,242	39,393,242	-	748,339	-	748,339
2068	546,636,529	35,953,526	35,953,526	-	632,404	-	632,404
2069	553,003,451	32,679,659	32,679,659	-	532,239	-	532,239
2070	563,282,029	29,580,068	29,580,068	-	446,072	-	446,072

TABLE 18 – Description of Actuarial Assumptions and Methods

ASSUMPTIONS

Interest Rate: 8.0% per annum, compounded annually. The components are 3.0% for inflation and 5.0% for the real rate of return.

Separation from Service: Illustrative rates of assumed separation from service are shown in the following tables.

Annual Rates per 100 Participants

Mortality*				
Attained Age	Healthy Pensioners		Disabled Pensioners	
	Males	Females	Males	Females
45	0.09	0.05	2.26	0.75
50	0.14	0.08	2.90	1.15
55	0.23	0.15	3.54	1.65
60	0.44	0.30	4.20	2.18
65	0.84	0.59	5.02	2.80
70	1.34	0.94	6.26	3.76
75	2.14	1.47	8.21	5.22
80	3.86	2.59	10.94	7.23
85	6.40	4.55	14.16	10.02

* Healthy pensioners:

The sex-distinct UP-1994 Mortality Table with projection scale AA to 2012 and then fully generational thereafter using scale AA.

Active members:

70% of the rates applicable to healthy pensioners.

Disabled pensioners:

RP2000 Disabled Mortality Table.

Annual Rates per 100 Participants

Attained Age	Withdrawal – Ultimate			Disability
	General Employees	Elected Officials*	Deputy Sheriffs	
20	20.00	2.00	20.00	0.00
25	18.10	2.00	18.10	0.04
30	8.10	2.00	8.10	0.05
35	5.20	2.00	5.20	0.07
40	4.00	2.00	4.00	0.12
45	3.70	2.00	3.70	0.16
50	3.70	2.00	3.70	0.16
55	1.00	2.00	1.00	0.16
60	0.00	0.00	0.00	0.16
65	0.00	0.00	0.00	0.16

* Select rates for elected officials assume no turnover for first four years.

Annual Rates per 100 Participants

Retirement Rates				
Attained Age	General Employees (backdrop eligible)	General Employees (<u>not</u> backdrop eligible)	Elected Officials	Deputy Sheriffs
45-49	14.0	0.0	0.0	15.0
50-54	14.0	14.0	0.0	30.0
55	14.0	14.0	19.8	30.0
56	15.0	15.0	19.8	30.0
57	16.0	16.0	23.0	30.0
58	17.0	17.0	20.4	30.0
59	17.0	17.0	24.8	30.0
60	17.0	17.0	19.4	30.0
61	25.0	25.0	22.5	50.0
62	30.0	30.0	28.4	50.0
63	30.0	30.0	26.6	50.0
64	30.0	30.0	24.3	50.0
65	40.0	40.0	30.4	100.0
66	40.0	40.0	22.5	100.0
67	40.0	40.0	25.7	100.0
68	40.0	40.0	34.2	100.0
69	40.0	40.0	36.0	100.0
70	100.0	100.0	100.0	100.0

Salary Increase: Effective average of 3.5% per annum, compounded annually. Representative values are as follows:

Annual Rate of Salary Increase

Age	General Employees	Elected Officials	Deputy Sheriffs
20	9.5%	3.0%	9.5%
25	5.0	3.0	8.0
30	4.0	3.0	6.1
35	3.7	3.0	4.6
40	3.5	3.0	3.7
45	3.0	3.0	3.3
50	3.0	3.0	3.0
55	3.0	3.0	3.0
60	3.0	3.0	3.0
Average	3.3	3.0	4.3

Payroll Growth: 3.5% per annum.

MISCELLANEOUS

Percentage Married/Age Difference: Male 80%, female 80%. Beneficiaries are assumed to be the same age as the participant.

Percentage Married with at Least One Dependent Child: 21.6% for General Employees, 43.2% for Deputy Sheriffs and Elected Officials. For those who die prior to age 60, it is assumed at least one child will remain a dependent until the member would have turned age 60.

Backdrop Rate: 75% of eligible retirees are assumed to elect a backdrop. Of those electing, 75% are assumed to take the maximum period available to them and 25% take half the maximum period available based on eligibility for an unreduced retirement benefit.

Assumed Type of Disability: For represented employees, the assumption is 50% Ordinary and 50% Accidental and for non-represented employees, the assumption is 100% Ordinary and 0% Accidental.

METHODS

Calculations: The actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system, and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

Actuarial Cost Method: Liabilities and contributions shown in this report are computed using the Individual Entry Age Normal Cost Method. The outstanding balance of the unfunded actuarial accrued liability (UAAL) as of January 1, 2015 and any changes to the UAAL arising from plan changes, assumption changes, and unexpected changes in UAL are amortized as a level percentage of payroll over a 20-year period.

The full administrative expenses incurred by the County related to the System are payable by the System to the County. The County then reimburses the System for this payment in the annual contribution.

The variance between the amount contributed to the System for a plan year, and the actual contribution requirement for that year is amortized on a level dollar basis over 5 years. POB proceeds were not subject to the contribution variance requirements.

Asset Valuation Method: A ten-year moving market average value of assets that recognizes the actuarial expected investment return immediately and spreads the difference between the actual and expected return over a period of ten years. Assets were re-established at market value on January 1, 2013.

DATA

Census and Assets: The valuation was based on members of the System as of January 1, 2016 and does not take into account future members. All census data was supplied by the System and was subject to reasonable consistency checks. Asset data was supplied by the System.

TABLE 19 - Summary of Benefit and Contribution Provisions

MEMBERSHIP

Any person regularly employed by the County at an annual wage or salary, including any person employed by the State of Wisconsin, but receiving part of his compensation from the County.

VESTING SERVICE

Service during period of employment in the County or in any department in any town, village, city or metropolitan sewerage commission in the County, which department has by consolidation or merger been absorbed by the County.

Creditable service shall consist of “prior service”, “military service”, and “membership service”, for which service credit is allowable under Section 4, Chapter 201, Laws of 1937, as well as service under Executive Order 11231, July 8, 1965, for Vietnam. Additional credit for periods of military service will be earned in accordance with the following chart:

Years of Service with Milwaukee County	Maximum Years of Military Service Granted
0-4	0
5-9	1
10-14	2
15-19	3
20+	4

BENEFIT SERVICE

Same as vesting service except service prior to becoming a participant does not count

EARNINGS

Earnable compensation is the full rate of compensation payable to member if he worked the full normal working time for his position, including authorized overtime payments and the compensation rate assumed to have been received while the member is on authorized leave of absence. In cases where compensation includes maintenance, the Pension Board shall fix the value of that part of the compensation not payable in money. Compensation shall not exceed \$260,000 in the pension calculation as indexed for changes in the cost of living.

For all members except certain deputy sheriffs hired on or after January 1, 1982, the final average salary means the average annual salary for the highest three (3) consecutive years of service. For deputy sheriffs hired on or after January 1, 1982, excluding DA Investigators and non-represented deputy sheriffs, the final average salary means the average annual salary for the highest five (5) consecutive years of service. For DA Investigators and non-represented deputy sheriffs hired before July 1, 1995 and all non-deputy sheriff members hired before January 1, 1982, the final average salary is

increased 7.5% for each year worked after January 1, 2001 to a maximum of 25%.

**VOLUNTARY
EMPLOYEE
CONTRIBUTUION**

Up to 10% of earnings, provided that the employee was contributing on January 1, 1971.

**MANDATORY
EMPLOYEE
CONTRIBUTION**

Effective January 1, 2011 Elected Officials and Non-Represented employees contributed 2% of compensation. For all Non-Represented employees (other than elected officials), the contribution rate increased to 4% of compensation effective December 11, 2011.

BENEFITS

Normal Retirement

Eligibility

Elected Officials:

Age 60, or age 55 with 30 years of service. For elected officials hired before January 1, 2006, the combination of age and service adding up to 75 (Rule of 75) also applies.

General Employees:

For firefighters, Federated Nurses, and Machinists:

Age 60 with 5 years of service, or age 55 with 30 years of service. For firefighters hired before December 1, 1996, Federated Nurses hired before January 1, 1997, and Machinists hired before January 1, 1994, Rule of 75 also applies. For Federated Nurses and Machinists hired after January 1, 2012, age 64 or age 55 with 30 years of service.

For Attorneys, Skilled Trades, non-represented employees, DC48, and Teamco:

Age 60, or age 55 with 30 years of service. For attorneys, Skilled Trades, and non-represented employees hired before January 1, 2006 and DC48 and Teamco hired before January 1, 1994, Rule of 75 also applies.

For attorneys, Skilled Trades, non-represented employees, and TEAMCO hired after January 1, 2010, age 64 or age 55 with 30 years of service.

For DC48 hired after August 1, 2011, age 64 or age 55 with 30 years of service.

For non-represented employees (excluding Elected Officials, Deputy Sheriffs), attorneys, machinists and TEAMCO hired after January 1, 2010, retirement age is 64.

Deputy Sheriffs:

Age 57, or age 55 with 15 years of service. For deputy sheriffs, DA Investigators, and non-represented deputy sheriffs hired before January 1, 1994, Rule of 75 also applies.

Amount

Elected Officials:

For elected officials hired before March 15, 2002, 2.5% of final average salary per year of service before October 14, 2010 and 1.6% of final average salary per year of service thereafter, not greater than 80%. For elected officials hired on or after March 15, 2002, 2.0% of final average salary per year of service before October 14, 2010 and 1.6% of final average salary per year of service thereafter, not greater than 80%.

General Employees:

2.0% of final average salary per year of service, not greater than 80%. For non-represented employees (excluding Elected Officials and Deputy Sheriffs), 1.6% of final average salary per year of service from January 1, 2010; for attorneys and TEAMCO, the 1.6% provision is effective May 1, 2010; for machinists, June 1, 2010; for DC48, effective August 1, 2011; for building trades and FNHP, effective January 1, 2012.

Deputy Sheriffs:

For deputy sheriffs hired before July 1, 1995 and DA Investigators and non-represented deputy sheriffs, 2.5% of final average salary per year of service, not greater than 80%. For deputy sheriffs hired on or after July 1, 1995, 2.0% of final average salary per year of service, not greater than 80%.

For all members, 1.6% of final average salary per year of service after 80% of final average salary has been reached.

In addition to the pension portion, the benefit includes any voluntary contribution balance. Benefits should not be less than under previous system.

Early Retirement

Eligibility	Age 55 with 15 years of service.
Amount	Benefits reduced by 5/12 of 1% for each month by which commencement of payments precedes Normal Retirement Age. For deputy sheriffs, DA Investigators, and non-represented deputy sheriffs, benefit reduction does not apply.

Ordinary Disability Benefit

Eligibility	After 15 years of service.
Amount	Benefits calculated as for normal retirement benefits. Minimum benefit is 25% of final average salary.

Accidental Disability Benefit

Eligibility	Immediate.
Amount	Benefits are the same as normal retirement benefits if the employee has attained the minimum Normal Retirement Age. If less than Normal Retirement Age at time of disability, the benefit is computed the same as for normal retirement but is not less than 75% or 60% of final average salary.

Elected Officials

For elected officials hired before February 19, 1987, the benefit is not less than 75% of final average salary. For all other elected officials, the benefit is not less than 60% of final average salary.

General Employees

For non-represented employees hired before February 19, 1987, attorneys hired on or after January 1, 1987, Skilled Trades hired before October 30, 1987, Federated Nurses hired before January 1, 1987, Machinists hired before May 18, 1988, DC48 hired before July 24, 1987, and Teamco hired before January 12, 1988, the benefit is not less than 75% of final average salary. For all other general employees, the benefit is not less than 60% of final average salary.

Deputy Sheriffs

For all deputy sheriffs, the benefit is not less than 75% of final average salary. For DA Investigators and non-represented deputy sheriffs hired on or after February 19, 1987, the benefit is not less than 60% of final average salary.

Ordinary Death Benefit

Upon the death of a deputy sheriff in active service for any cause other than accidental, the surviving spouse or child shall be entitled to receive the benefit under the provision of survivor benefits if the deceased member has completed at least one (1) year of service and is not eligible for normal retirement.

Accidental Death Benefit

Upon the death of a deputy sheriff caused by an accident in active duty, a survivorship benefit equal to fifty (50) percent of final average salary shall be granted to the following members:

- 1) A surviving spouse for life or until remarriage, or
- 2) If there is no spouse or spouse dies or remarries before the youngest child has attained age 18, the benefit is payable to his child(ren) under age 18 until the youngest child attains said age, or
- 3) If there is no spouse or child(ren) under age 18, the benefit is payable to his dependent father or mother to continue for life.

The monthly benefit aforementioned shall not be less than the benefit under ordinary death benefit section if death had not occurred in performance of duty.

Lump Sum Benefit upon Death

Upon a death of members, a lump sum benefit of one-half the final average salary of the deceased member, not greater than two thousand dollars (\$2,000) shall be paid to designated beneficiary if such member has completed one (1) year of service and no survivors' benefits payable under any other survivorship benefits.

Deferred Vested Benefit

Upon termination of employment, a member who does not elect to withdraw any part of his membership account shall be eligible for a deferred vested benefit if:

- 1) The accrued benefit at age 60 is at least \$10 per month
- 2) 5 years of service

The benefit is computed the same as for a normal retirement benefit considering earnings and service prior to date of termination.

Survivor Benefit

Upon the death of a member prior to age 60 and after completing at least one (1) year of service, a monthly benefit equal to 40% of the member's salary for the year of his death less monthly survivor benefits payable under the Social Security law shall be payable to his surviving spouse if she has at least one dependent child and was married to the member at least one (1) year prior to his death. Upon attainment of age 60 the dependent spouse shall be paid a benefit equal to 50% of the normal pension which the member would have received assuming service had continued to accrue to age 60 and the final average salary determined at death. In addition, a monthly benefit equal to 10% of the member's monthly salary less the benefits payable to child under Social Security law shall be payable to each eligible

children until he attains age 18 or marries, or until attainment of age 22 if he is a student and not married.

Any member eligible for normal retirement may elect the protective survivorship option by selecting option 2 or 3 under the Optional Benefit section. This survivorship option shall become effective at the death of the member. If any member eligible to elect an option shall die in active service, without selecting an option, his surviving spouse shall be paid a survivorship benefit equal to the amount that would have been payable if such member had retired under option 3 immediately prior to his death.

Optional Benefit

In lieu of the full retirement benefit, any member at retirement may elect to receive an actuarial equivalent reduced retirement benefit in accordance with the following options:

Option 1. In case of death before benefits attributable to his mandatory account have equaled the amount of his membership account at the date of retirement, the balance shall be paid to a designated beneficiary or to his estate; or

Option 2. At the death of the member, one-half of the reduced benefit shall be continued throughout the life of designated beneficiary; or

Option 3. At the death of the member, the same reduced benefit shall be continued throughout the life of designated beneficiary.

Other Benefits

Simple COLA	2% of original benefit increase per year to retired employees (surviving beneficiary receives proportionate amount based on survivorship percentage).
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Contribution Refund	Refund of employee voluntary contribution upon severance.
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Backdrop Benefit	Employee may opt to receive a monthly benefit earned as of a specific date in the past (backdrop date). The backdrop date may not be prior to the earliest date that the member was eligible to retire and shall not be less than one (1) year prior to the date the member leaves active County service. Employee receives a cash payment equal to monthly benefits that would have been paid between backdrop date and actual retirement date plus interested earned.
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Effective with backdrop dates on or after April 1, 2013, the monthly drop benefit shall be based on the salary, service and multipliers as of April 1, 2013, except for Elected Officials, Skilled Trades, Machinists, Federated Nurses and Firefighters.

Members not eligible for backdrop benefits are Elected Officials, non-represented employees and deputy sheriffs hired on or after March 15, 2002, Machinists and Teamco hired on or after November 4, 2005, Attorneys hired on or after January 1, 2006, Federated Nurses hired on or after December 15, 2005, Firefighters hired on or after June 19, 2007 and DC48 hired on or after February 1, 2007.

TABLE 20 - Summary of Membership Data as of January 1, 2016

Active Participants				
Item	General Employees	Deputy Sheriffs *	Elected Officials	Total
Number of Participants	3,309	288	22	3,619
Average Annual Salaries **	\$ 51,883	\$ 75,003	\$ 72,237	\$ 53,847
Average Age	45.6	45.5	51.1	45.7
Average Service	10.9	17.4	11.3	11.4

* Includes 18 non-represented deputy sheriffs.

** The salaries shown in the table above represent a rate of pay increased by the salary assumption.

Inactive Participants				
Item	Number	Annual Annuities	Average Annuities	Average Age
Participants with Deferred Benefits	1,387	\$ 11,085,984	\$ 7,993	51.0
Retired Participants	6,816	149,319,398	21,907	71.2
Beneficiaries	914	13,937,264	15,249	78.0
Disability Retirees	<u>261</u>	<u>5,988,783</u>	<u>22,946</u>	<u>64.5</u>
Total	9,378	\$ 180,331,429	\$ 19,229	68.7

TABLE 21 - Active Membership Statistics (Unaudited)

	2015
Members as of January 1	5,050 *
Changes during the year:	
New enrollments	477
Nonvested terminations	(291)
Retirements	(235)
Deaths in active service	(13)
New deferred beneficiaries	0
Data Adjustment	18
Members as of December 31	<u>5,006</u> *

*This total includes vested inactive members.

RETIREMENTS AND SURVIVORS (UNAUDITED)

	Retirements granted							Survivors & Benefi- ciaries	Total	
	Maxi- mum Pension	Options								
		Refund	100%	75%	50%	25%	10-yr			Other
January 1, 2015	3,303	333	1,436	258	1,012	478	227	45	887	7,979
Changes during the year:										
Adjustments (actuary) *	-	-	-	-	-	-	-	-	-	-
Retirements	149	4	49	9	23	27	14	2	85	362
Pensioner deaths	(164)	(33)	(40)	(6)	(45)	(2)	(1)	(1)	(58)	(350)
December 31, 2015	3,288	304	1,445	261	990	503	240	46	914	7,991

* Adjustments as a result of reclassifications made to beginning balances by the actuary:

EXHIBIT I - Active Membership Data – All Employees

**Number and Average Annual Salary*
as of January 1, 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	67 \$36,987									67 \$36,987
25-29	270 \$39,016	19								289 \$39,374
30-34	258 \$44,244	71 \$46,970	11							340 \$44,631
35-39	197 \$53,654	112 \$53,810	80 \$50,696	25 \$58,367						414 \$53,409
40-44	164 \$51,469	75 \$57,388	91 \$52,355	117 \$60,472	22 \$66,632					469 \$55,545
45-49	134 \$51,791	76 \$53,131	86 \$57,513	159 \$63,016	121 \$67,494	26 \$56,742	1	1		604 \$59,129
50-54	105 \$49,141	48 \$55,451	60 \$48,592	84 \$52,104	124 \$61,965	94 \$59,992	15	1		531 \$55,312
55-59	83 \$53,604	60 \$48,506	77 \$52,977	98 \$56,752	88 \$60,132	84 \$61,445	37 \$55,029	3		530 \$55,925
60-64	51 \$61,098	28 \$58,887	43 \$52,645	45 \$52,591	47 \$58,980	49 \$69,018	28 \$72,889	7	3	301 \$60,931
Over 64	5	13	21 \$71,136	11	5	11	3	5		74 \$ 62,335
Total	1,334 \$47,476	502 \$52,602	469 \$53,184	539 \$58,335	407 \$63,079	264 \$62,309	84 \$62,483	17	3	3,619 \$53,847

* Compensation in cells with fewer than 20 records has been suppressed.

EXHIBIT II - Active Membership Data – General Employees

**Number and Average Annual Salary*
as of January 1, 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	65 \$36,645									65 \$36,645
25-29	253 \$38,407	19								272 \$38,831
30-34	251 \$44,500	69 \$47,007	11							331 \$44,826
35-39	192 \$53,763	110 \$53,788	71 \$48,653	18						391 \$52,646
40-44	161 \$51,521	73 \$57,003	85 \$51,161	80 \$51,293	8					407 \$52,378
45-49	131 \$50,901	76 \$53,131	78 \$55,654	116 \$57,065	69 \$57,838	25 \$55,738	1	1		497 \$54,686
50-54	103 \$48,760	47 \$55,178	58 \$47,668	80 \$50,623	90 \$55,267	86 \$58,341	14	1		479 \$52,719
55-59	80 \$52,787	60 \$48,506	75 \$51,661	89 \$54,534	80 \$56,785	80 \$60,584	36 \$54,098	3		503 \$54,372
60-64	51 \$61,098	26 \$56,980	42 \$52,272	45 \$52,591	46 \$59,127	48 \$68,693	28 \$72,889	7	2	295 \$60,676
Over 64	5	12	19	10	5	10	3	5		69 \$ 62,575
Total	1,292 \$47,326	492 \$52,386	439 \$51,842	438 \$53,460	298 \$56,812	249 \$61,423	82 \$61,668	17	2	3,309 \$51,883

EXHIBIT III - Active Membership Data – Deputy Sheriffs

**Number and Average Annual Salary*
as of January 1, 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	2									2
25-29	16									16
30-34	7	2								9
35-39	3	2	7	7						19
40-44	1	1	6	37	14					59
				\$80,318						\$77,419
45-49	2		7	42	52	1				104
				\$79,709	\$80,307					\$79,801
50-54	2	1	2	4	34	8	1			52
					\$79,695					\$79,201
55-59	2		1	9	6	4	1			23
										\$78,775
60-64		1	1			1			1	4
Over 64										
Total	35	7	24	99	106	14	2		1	288
	\$48,801		\$72,482	\$80,029	\$79,565					\$75,003

EXHIBIT IV - Active Membership Data – Elected Officials

**Number and Average Annual Salary*
as of January 1, 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	1									1
30-34										
35-39	2		2							4
40-44	2	1								3
45-49	1		1	1						3
50-54										
55-59	1		1		2					4
60-64		1			1					2
Over 64		1	2	1		1				5
Total	7	3	6	2	3	1				22 \$72,237

* Compensation in cells with fewer than 20 records has been suppressed.

EXHIBIT V - Active and Deferred Vested Members Obtaining Retirement Eligibility over Next Five Calendar Years

Actives Reaching Retirement Eligibility

Year	General Employees	Elected Officials	Deputy Sheriffs	Total
Eligible at Valuation Date	523	9	14	546
2016	137	1	11	149
2017	100	0	7	107
2018	116	0	12	128
2019	107	0	11	118
2020	103	2	10	115
Total Over Next 5 Years	563	3	51	617
Grand Total Eligible	1,086	12	65	1,163

Deferred Vesteds Reaching Retirement Age

Year	Total
2016	72
2017	77
2018	74
2019	69
2020	64
Total Over Next 5 Years	356

EXHIBIT VI - Retiree and Beneficiary Membership Data as of January 1, 2016

Number and Average Annual Benefit

Age Last Birthday	Number	Annual Benefit	Average Annual Benefit
Retired Participants			
Under 60	590	\$ 17,174,182	\$ 29,109
60 - 64	1,328	29,425,498	22,158
65 - 69	1,771	39,784,615	22,464
70 - 74	1,033	22,852,981	22,123
75 - 79	774	16,359,282	21,136
Over 79	1,320	23,722,840	17,972
Total	6,816	\$ 149,319,398	\$ 21,907
Beneficiary Participants			
Under 60	58	\$ 764,392	\$ 13,179
60 - 64	73	1,172,082	16,056
65 - 69	97	1,782,512	18,376
70 - 74	97	1,619,936	16,700
75 - 79	123	2,006,048	16,309
Over 79	466	6,592,294	14,147
Total	914	\$ 13,937,264	\$ 15,249
Disabled Participants			
Under 60	106	\$ 2,833,112	\$ 26,727
60 - 64	38	934,436	24,590
65 - 69	26	591,697	22,758
70 - 74	37	687,077	18,570
75 - 79	20	388,062	19,403
Over 79	34	554,399	16,306
Total	261	\$ 5,988,783	\$ 22,946
Grand Total	7,991	\$ 169,245,445	\$ 21,180

EXHIBIT VII - 5-Year History of Membership Data

Active Participants

Valuation as of January 1	Number of Active Participants	Percentage Change in Membership	Total Annual Payroll	Percentage Change in Payroll
2016	3,619	(1.66)%	\$ 194,871,557	(1.70)%
2015	3,680	(5.91)%	198,235,780	5.11 %
2014	3,911	(0.58)%	188,605,492	4.81 %
2013	3,934	(0.96)%	189,131,711	(0.85)%
2012	3,972	(10.70)%	190,747,973	(13.94)%

Retired, Disabled, and Beneficiary Participants

Valuation as of January 1	Number on roll	Additions	Deletions	Percentage Change in Membership	Annual Annuities	Percentage Change in Annuities
2016	7,991	362	350	0.15 %	169,278,563	2.56 %
2015	7,979	365	326	0.49 %	165,058,644	1.70 %
2014	7,940	319	246	0.93 %	162,296,676	2.69 %
2013	7,867	412	292	1.55 %	158,040,281	6.18 %
2012	7,747	576	270	(0.22)%	148,838,576	2.24 %

EXHIBIT VIII - Detailed Tabulations of the Data

TABLE VIII-A

**The Number and Annual Salaries
of Members in Active Service Distributed by
Age as of January 1, 2016
All Employees**

(Compensation in cells with fewer than 20 records has been suppressed)

Age	Men		Women	
	Number	Compensation	Number	Compensation
17				
18				
19	1			
20				
21	1		2	
22	5		7	
23	8		7	
24	19		17	
25	25	\$ 886,144	24	\$ 1,025,563
26	26	1,029,276	29	1,136,873
27	24	1,007,722	37	1,365,359
28	23	909,623	27	1,015,050
29	33	1,378,783	41	1,624,817
30	32	1,351,649	25	1,010,832
31	35	1,535,278	33	1,401,683
32	32	1,571,007	39	1,962,952
33	31	1,415,529	38	1,552,240
34	31	1,419,260	44	1,954,019
35	32	1,919,404	45	2,064,087
36	41	2,233,093	40	1,933,183
37	31	1,630,864	49	2,693,958
38	50	2,812,297	40	2,064,189
39	38	2,199,552	48	2,560,797
40	58	3,568,429	44	2,077,512
41	46	2,861,971	49	2,325,867
42	24	1,381,505	44	2,146,944
43	52	2,956,082	43	2,452,014
44	56	3,547,482	53	2,732,665
45	55	3,608,144	58	3,155,068
46	72	4,560,623	61	3,484,256
47	39	2,546,945	65	3,482,829
48	53	3,424,014	66	3,177,132
49	68	4,747,384	67	3,527,402

TABLE VIII-A

**The Number and Annual Salaries
of Members in Active Service Distributed by
Age as of January 1, 2016
All Employees**

(Compensation in cells with fewer than 20 records has been suppressed)

Age	Men		Women	
	Number	Compensation	Number	Compensation
50	58	\$ 3,395,552	62	\$ 3,248,183
51	43	2,599,223	71	3,569,259
52	46	2,896,935	55	2,986,082
53	57	3,267,808	62	3,237,505
54	38	2,242,118	39	1,927,971
55	61	3,679,010	78	4,059,357
56	49	3,139,286	55	2,892,289
57	49	2,567,019	59	2,811,298
58	39	2,258,276	43	2,531,344
59	43	2,984,285	54	2,718,172
60	54	3,695,049	43	2,192,421
61	32	2,071,019	28	1,456,199
62	36	2,171,130	29	1,722,940
63	13		26	1,376,772
64	24	1,891,758	16	
65	14		8	
66	7		8	
67	6		4	
68	3		6	
69	4		2	
70			1	
71	1			
72	1		2	
73	1		2	
74	2			
75				
76				
77			1	
78				
79	1			
80				
Total	1,723	\$ 99,982,789	1,896	\$ 94,888,767

TABLE VIII-B

**The Number and Annual Salaries
of Members in Active Service Distributed by
Years of Credited Service as of January 1, 2016
All Employees**

(Compensation in cells with fewer than 20 records has been suppressed)

Years of Service	Men		Women	
	Number	Compensation	Number	Compensation
0	204	\$ 9,698,937	273	\$ 11,676,177
1	93	4,577,904	160	7,553,818
2	104	5,796,108	150	6,762,824
3	93	4,807,853	89	4,133,166
4	88	4,521,511	80	3,804,644
5	51	2,508,909	47	2,473,607
6	43	2,351,568	61	3,036,188
7	74	3,820,409	63	3,118,066
8	35	1,981,194	42	2,233,091
9	43	2,392,799	43	2,490,235
10	48	2,541,347	64	3,301,127
11	38	2,312,909	46	2,331,220
12	33	1,807,279	36	1,839,562
13	55	3,165,652	24	1,065,340
14	67	3,864,971	58	2,713,778
15	72	4,229,765	79	3,862,430
16	64	3,855,419	67	3,728,785
17	48	3,044,656	42	2,294,170
18	48	3,243,750	41	2,400,949
19	40	2,799,072	38	1,983,666
20	40	2,988,398	20	1,108,300
21	45	3,024,237	42	2,389,234
22	34	2,251,171	37	2,044,057
23	56	4,038,667	50	2,719,079
24	45	2,990,910	38	2,119,011
25	40	2,699,651	31	1,466,190
26	28	1,803,702	50	2,977,985
27	19		38	2,299,184
28	17		19	
29	8		14	
30	20	1,293,897	16	
31	6		12	
32	4		8	
33	5		3	
34	3		7	
35	1		3	
36	4		3	
37	1		1	
38	2			
39	4		1	
Total	1,723	\$ 99,982,789	1,896	\$ 94,888,767

TABLE VIII-C

**The Number and Annual Salaries
of Members in Active Service Distributed by
Age as of January 1, 2016
General Employees**

(Compensation in cells with fewer than 20 records has been suppressed)

Age	Men		Women	
	Number	Compensation	Number	Compensation
17				
18				
19	1			
20				
21	1		2	
22	5		7	
23	8		7	
24	18		16	
25	20	\$ 634,051	24	\$ 1,025,563
26	24	934,111	28	1,085,115
27	21	861,500	36	1,322,005
28	22	858,345	26	963,772
29	31	1,293,042	40	1,584,510
30	29	1,228,666	25	1,010,832
31	34	1,492,073	33	1,401,683
32	31	1,522,808	39	1,962,952
33	30	1,400,361	38	1,552,240
34	30	1,404,136	42	1,861,812
35	31	1,852,202	41	1,845,579
36	38	2,014,501	39	1,864,530
37	26	1,354,396	48	2,610,847
38	47	2,605,798	40	2,064,189
39	35	1,952,879	46	2,419,622
40	46	2,653,528	42	1,915,334
41	40	2,422,798	46	2,129,143
42	20	1,062,301	43	2,064,745
43	41	2,057,989	42	2,370,059
44	40	2,312,714	47	2,329,231
45	34	1,905,291	54	2,868,663
46	53	3,018,815	59	3,315,087
47	21	1,089,625	60	3,093,017
48	40	2,414,036	60	2,683,561
49	51	3,382,282	65	3,408,615

TABLE VIII-C

**The Number and Annual Salaries
of Members in Active Service Distributed by
Age as of January 1, 2016
General Employees**

(Compensation in cells with fewer than 20 records has been suppressed)

Age	Men		Women	
	Number	Compensation	Number	Compensation
50	47	\$ 2,515,745	59	\$ 3,003,331
51	36	2,019,753	68	3,357,486
52	37	2,213,582	53	2,822,662
53	50	2,687,210	58	2,926,132
54	32	1,778,318	39	1,927,971
55	53	3,048,577	74	3,743,291
56	40	2,429,588	55	2,892,289
57	48	2,485,279	59	2,811,298
58	39	2,258,276	43	2,531,344
59	38	2,431,024	54	2,718,172
60	51	3,506,229	43	2,192,421
61	30	1,903,663	28	1,456,199
62	35	2,086,493	29	1,722,940
63	13		26	1,376,772
64	24	1,891,758	16	
65	13		8	
66	6		8	
67	6		4	
68	3		5	
69	3		2	
70			1	
71	1			
72			2	
73	1		2	
74	2			
75				
76				
77			1	
78				
79	1			
80				
Total	1,477	\$ 81,310,880	1,832	\$ 90,370,531

TABLE VIII-D

**The Number and Annual Salaries
of Members in Active Service Distributed by
Years of Credited Service as of January 1, 2016
General Employees**

(Compensation in cells with fewer than 20 records has been suppressed)

Years of Service	Men		Women	
	Number	Compensation	Number	Compensation
0	187	\$ 8,829,891	268	\$ 11,422,183
1	91	4,493,522	160	7,553,818
2	98	5,487,272	149	6,718,855
3	89	4,584,830	88	4,092,859
4	85	4,295,021	77	3,666,792
5	49	2,397,400	47	2,473,607
6	42	2,265,278	61	3,036,188
7	70	3,555,113	62	3,049,413
8	34	1,932,995	41	2,180,891
9	43	2,392,799	43	2,490,235
10	44	2,331,525	64	3,301,127
11	36	2,166,710	44	2,213,761
12	30	1,567,592	35	1,770,922
13	45	2,407,360	24	1,065,340
14	60	3,288,734	57	2,645,779
15	59	3,204,145	73	3,392,924
16	47	2,473,030	63	3,402,020
17	37	2,182,566	35	1,769,047
18	28	1,621,859	37	2,098,915
19	25	1,570,162	34	1,700,681
20	21	1,409,088	16	
21	25	1,419,144	39	2,142,943
22	19		32	1,644,626
23	30	1,926,054	43	2,171,177
24	36	2,254,541	37	2,036,522
25	34	2,229,948	31	1,466,190
26	23	1,415,526	49	2,896,150
27	19		36	2,135,762
28	16		19	
29	8		14	
30	18		16	
31	6		12	
32	4		8	
33	5		3	
34	3		7	
35	1		3	
36	4		3	
37	1		1	
38	2			
39	1		1	
40	2			
Total	1,477	\$ 81,310,880	1,832	\$ 90,370,531

TABLE VIII-E

**The Number and Annual Salaries
of Members in Active Service Distributed by
Age as of January 1, 2016
Deputy Sheriffs**

(Compensation in cells with fewer than 20 records has been suppressed)

Age	Men		Women	
	Number	Compensation	Number	Compensation
24	1		1	
25	4			
26	2		1	
27	3		1	
28	1		1	
29	2		1	
30	3			
31	1			
32	1			
33	1			
34	1		2	
35	1		2	
36	2		1	
37	4		1	
38	3			
39	3		2	
40	9		2	
41	6		3	
42	4		1	
43	11		1	
44	16		6	
45	21	\$ 1,702,853	3	
46	19		2	
47	18		5	
48	13		6	
49	15		2	
50	11		3	
51	7		3	
52	9		2	
53	7		4	
54	6			
55	8		4	
56	8			
57	1			
58				
59	2			
60	2			
61	1			
62	1			
Total	228	\$ 17,305,056	60	\$ 4,295,872

TABLE VIII-F

**The Number and Annual Salaries
of Members in Active Service Distributed by
Years of Credited Service as of January 1, 2016
Deputy Sheriffs**

(Compensation in cells with fewer than 20 records has been suppressed)

Years of Service	Men		Women	
	Number	Compensation	Number	Compensation
0	15	\$	5	
1	2			
2	6		1	
3	2		1	
4	1		2	
5	2			
6				
7	3		1	
8	1			
9				
10	3			
11	2			
12	2		1	
13	8			
14	7		1	
15	12		6	
16	17		4	
17	10		7	
18	20	1,621,891	4	
19	15		4	
20	18		4	
21	20	1,605,093	3	
22	15		5	
23	24	1,931,663	7	
24	9		1	
25	6			
26	5		1	
27			2	
28				
29				
30	2			
31				
32				
33				
34				
35				
36				
37				
38				
39				
40	1			
Total	228	\$ 17,305,056	60	\$ 4,295,872

TABLE VIII-G

**The Number and Annual Salaries
of Members in Active Service Distributed by
Age as of January 1, 2016
Elected Officials**

(Compensation in cells with fewer than 20 records has been suppressed)

Age	Men		Women	
	Number	Compensation	Number	Compensation
25	1			
35			2	
36	1			
37	1			
40	3			
45			1	
49	2			
56	1			
59	3			
60	1			
61	1			
65	1			
66	1			
68			1	
69	1			
72	1			
Total	18		4	

TABLE VIII-H

**The Number and Annual Salaries
of Members in Active Service Distributed by
Years of Credited Service as of January 1, 2016
Elected Officials**

(Compensation in cells with fewer than 20 records has been suppressed)

Years of Service	Men		Women	
	Number	Compensation	Number	Compensation
0	2			
1				
2				
3	2			
4	2		1	
5				
6	1			
7	1			
8			1	
9				
10	1			
11			2	
12	1			
13	2			
14				
15	1			
16				
17	1			
18				
19				
20	1			
21				
22				
23	2			
24				
25				
26				
27				
28	1			
Total	18		4	

TABLE VIII-I

**The Number and Annual Benefits Payable to
All Members Receiving Benefits
as of January 1, 2016**

Age	Men		Women	
	Number	Annuities	Number	Annuities
16	1	\$ 4,484		
17	1	3,995		
19	1	3,997		
21	2	10,601		
22			1	\$ 7,780
26			1	7,780
27			1	7,071
32	1	3,693		
33	1	15,738		
35	1	20,434	1	4,223
37	1	2,368	1	16,217
38	1	34,845	1	6,018
40	1	24,554	1	16,702
41	2	52,298	1	46,075
42	1	5,405		
44	4	131,577	3	67,523
45	4	143,049		
46	8	221,796		
47	2	52,811		
48	3	111,268	4	70,530
49	1	13,821	5	223,540
50	3	97,173	7	200,630
51	10	410,431	25	651,880
52	8	285,577	29	802,624
53	17	533,404	14	437,909
54	18	554,110	36	930,642
55	13	438,190	48	1,168,386
56	31	953,959	56	1,407,336
57	38	1,397,185	58	1,589,887
58	43	1,192,409	103	2,673,136
59	62	1,835,727	79	1,880,898
60	83	2,290,453	129	2,455,843
61	100	2,504,795	148	2,960,365
62	128	3,072,614	172	3,179,203
63	134	3,800,358	194	3,474,422
64	145	3,749,805	206	4,044,158
65	183	4,743,798	196	3,261,538

TABLE VIII-I

**The Number and Annual Benefits Payable to
All Members Receiving Benefits
as of January 1, 2016**

Age	Men		Women	
	Number	Annuities	Number	Annuities
66	174	\$ 4,492,083	229	\$ 4,007,470
67	161	4,681,527	194	3,610,957
68	185	4,554,380	223	4,274,446
69	152	4,254,024	197	4,278,601
70	116	2,849,502	138	2,740,698
71	104	2,556,611	146	2,777,246
72	100	2,621,888	143	2,556,016
73	100	2,831,408	138	2,453,869
74	68	1,709,030	114	2,063,726
75	85	2,300,003	100	1,775,491
76	77	1,926,223	112	2,024,095
77	65	1,538,861	113	2,093,192
78	73	1,713,668	114	1,688,466
79	76	1,904,354	102	1,789,039
80	49	1,303,575	115	2,081,404
81	53	1,547,854	93	1,580,174
82	50	1,425,021	84	1,345,157
83	64	1,436,468	90	1,458,771
84	60	1,530,523	89	1,558,388
85	42	956,026	121	1,743,325
86	36	705,689	103	1,397,669
87	38	787,334	89	1,194,225
88	42	897,074	89	1,191,179
89	20	437,609	76	1,019,543
90	26	553,045	54	690,947
91	24	390,250	54	734,885
92	17	278,754	51	567,705
93	12	214,105	34	360,083
94	12	193,223	40	386,781
95	4	35,460	26	254,727
96	5	41,087	16	138,932
97	1	21,308	16	142,153
98	1	44,255	9	41,387
99	2	51,928	4	37,547
100			2	35,302
101	1	6,131	5	45,961
103			1	6,569
Total	3,147	\$ 81,507,003	4,844	\$ 87,738,442

TABLE VIII-J

The Number and Annual Benefits Payable to Retired Members as of January 1, 2016

Age	Men		Women	
	Number	Annuities	Number	Annuities
48			1	\$ 24,439
49			3	131,380
50	1	\$ 43,053	4	131,901
51	6	252,734	13	321,173
52	6	265,044	19	565,684
53	14	432,000	13	423,700
54	16	519,273	28	784,086
55	13	438,190	40	1,070,676
56	26	803,645	49	1,249,297
57	33	1,308,660	53	1,530,638
58	37	1,080,109	88	2,362,302
59	54	1,642,306	73	1,793,892
60	78	2,198,422	109	2,107,099
61	94	2,411,091	132	2,612,318
62	118	2,820,523	162	2,999,142
63	125	3,580,003	182	3,268,439
64	139	3,707,332	189	3,721,129
65	177	4,619,295	178	2,888,851
66	169	4,388,060	215	3,756,441
67	154	4,553,933	173	3,225,482
68	180	4,498,191	200	3,841,662
69	145	4,090,899	180	3,921,801
70	108	2,760,114	121	2,320,426
71	95	2,447,361	125	2,403,277
72	90	2,494,794	121	2,231,180
73	94	2,726,835	115	2,056,463
74	66	1,660,977	98	1,751,554
75	79	2,204,778	78	1,386,441
76	74	1,898,504	102	1,857,530
77	58	1,454,586	89	1,557,815
78	63	1,559,140	89	1,356,493
79	66	1,774,879	76	1,309,116
80	48	1,291,759	84	1,485,045
81	52	1,539,380	65	1,098,924
82	46	1,374,576	59	988,636
83	60	1,429,428	60	847,398
84	55	1,437,838	56	945,157

TABLE VIII-J

The Number and Annual Benefits Payable to Retired Members as of January 1, 2016

Age	Men		Women	
	Number	Annuities	Number	Annuities
85	38	\$ 905,699	78	\$ 1,178,348
86	32	684,787	64	875,500
87	37	783,697	57	726,295
88	39	858,952	49	618,989
89	20	437,609	41	493,240
90	23	524,691	34	445,661
91	17	341,416	30	356,248
92	15	271,082	35	353,515
93	10	189,852	17	180,672
94	10	173,582	26	205,015
95	4	35,460	14	138,510
96	4	38,395	12	106,846
97	1	21,308	9	89,902
98	1	44,255	6	35,702
99	2	51,928	4	37,547
100			1	31,246
101	1	6,131	4	42,619
Total	2,893	\$ 77,076,556	3,923	\$ 72,242,842

TABLE VIII-K

**The Number and Annual Benefits Payable to
Beneficiary Members
as of January 1, 2016**

Age	Men		Women	
	Number	Annuities	Number	Annuities
16	1	\$ 4,484		
17	1	3,995		
19	1	3,997		
21	2	10,601		
22			1	\$ 7,780
26			1	7,780
27			1	7,071
32	1	3,693		
33	1	15,738		
35			1	4,223
37	1	2,368	1	16,217
38			1	6,018
40			1	16,702
41	1	8,158		
42	1	5,405		
44			2	34,503
46	2	20,243		
47	1	6,425		
48			1	5,497
50			1	8,017
51			4	74,914
52	1	5,465	3	99,327
53	1	8,425		
54			3	70,125
55			5	44,201
56			2	37,828
57			4	37,374
58			6	87,057
59	3	77,205	2	23,556
60	2	35,158	17	274,822
61	2	11,123	14	315,996
62	3	25,851	8	133,319

TABLE VIII-K

**The Number and Annual Benefits Payable to
Beneficiary Members
as of January 1, 2016**

Age	Men		Women	
	Number	Annuities	Number	Annuities
63	2	\$ 17,403	11	\$ 192,584
64	3	7,640	11	158,186
65	4	71,505	15	314,341
66	2	15,040	10	170,874
67	4	53,359	18	340,974
68	4	23,007	20	381,295
69	4	65,088	16	347,029
70	3	38,834	15	358,957
71	5	32,261	15	293,620
72	8	72,395	19	268,502
73	3	33,203	17	299,573
74			12	222,591
75	3	36,601	19	332,309
76	2	9,874	9	145,874
77	6	58,240	23	520,611
78	7	92,638	23	292,540
79	7	61,861	24	455,500
80	1	11,816	30	573,669
81			24	428,662
82	2	13,011	23	320,280
83	4	7,040	25	524,997
84	3	25,205	30	576,323
85	4	50,327	41	520,830
86	4	20,902	34	455,465
87	1	3,637	29	425,941
88	3	38,122	39	558,732
89			34	512,823
90	3	28,354	20	245,286
91	6	38,163	24	378,637
92	2	7,672	15	198,431
93	2	24,253	17	179,411
94	2	19,641	14	181,766
95			12	116,217
96	1	2,692	4	32,086
97			7	52,251
99				
100			1	4,056
102				
103			1	6,569
Total	130	\$ 1,228,118	784	\$ 12,709,146

TABLE VIII-L

The Number and Annual Benefits Payable to Disabled Members as of January 1, 2016

Age	Men		Women	
	Number	Annuities	Number	Annuities
35	1	\$ 20,434		
38	1	34,845		
40	1	24,554		
41	1	44,140	1	\$ 46,075
44	4	131,577	1	33,020
45	4	143,049		
46	6	201,553		
47	1	46,386		
48	3	111,268	2	40,594
49	1	13,821	2	92,160
50	2	54,120	2	60,712
51	4	157,697	8	255,793
52	1	15,068	7	137,613
53	2	92,979	1	14,209
54	2	34,837	5	76,431
55			3	53,509
56	5	150,314	5	120,211
57	5	88,525	1	21,875
58	6	112,300	9	223,777
59	5	116,216	4	63,450
60	3	56,873	3	73,922
61	4	82,581	2	32,051
62	7	226,240	2	46,742
63	7	202,952	1	13,399
64	3	34,833	6	164,843
65	2	52,998	3	58,346

TABLE VIII-L

The Number and Annual Benefits Payable to Disabled Members as of January 1, 2016

Age	Men		Women	
	Number	Annuities	Number	Annuities
66	3	\$ 88,983	4	\$ 80,155
67	3	74,235	3	44,501
68	1	33,182	3	51,489
69	3	98,037	1	9,771
70	5	50,554	2	61,315
71	4	76,989	6	80,349
72	2	54,699	3	56,334
73	3	71,370	6	97,833
74	2	48,053	4	89,581
75	3	58,624	3	56,741
76	1	17,845	1	20,691
77	1	26,035	1	14,766
78	3	61,890	2	39,433
79	3	67,614	2	24,423
80			1	22,690
81	1	8,474	4	52,588
82	2	37,434	2	36,241
83			5	86,376
84	2	67,480	3	36,908
85			2	44,147
86			5	66,704
87			3	41,989
88			1	13,458
89			1	13,480
91	1	10,671		
92			1	15,759
Total	124	\$ 3,202,329	137	\$ 2,786,454

EXHIBIT IX - Glossary

Accrued Liability	The difference between (a) the present value of future plan benefits, and (b) the present value of future normal cost. It is the portion of the present value of future plan benefits attributable to service accrued as of the valuation date. Sometimes referred to as “actuarial accrued liability.”
Accrued Service	The service credited under the plan, which was rendered before the date of the actuarial valuation.
Actual Funding Contribution	The Actual Funding Contribution for a plan year is calculated using census and asset information as of the first day of the plan year, and includes Normal Cost, with interest to the end of the plan year, and a net amortization payment.
Actuarial Assumptions	Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.
Actuarial Cost Method	A mathematical budgeting procedure for allocating the dollar amount of the “present value of future plan benefits” between the present value of future normal cost and the accrued liability. Sometimes referred to as the “actuarial funding method.”
Actuarial Equivalent	A series of payments is called an actuarial equivalent of another series of payments if the two series have the same actuarial present value.
Actuarial Value of Assets	The value of current plan assets recognized for valuation purposes. Based on a smoothed market value that recognizes Unexpected Changes in the market value over a period of ten years.
Amortization	Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

EXHIBIT IX - Glossary (cont'd)

Annual Required Contribution	The Annual Required Contribution, or ARC, is the amount determined in accordance with Governmental Accounting Standards Board Statements Nos. 25 and 27.
Budget Contribution	The Budget Contribution for a year is based on census and asset information as of the first day of the PRIOR plan year, rolled forward to the next plan year based on all actuarial assumptions being met. For example, the Budget Contribution for 2012 is based on census and asset information as of January 1, 2010, rolled forward to January 1, 2011.
Contribution Variance	The difference between the Actual Contribution and the Budget Contribution for a plan year is referred to as the Contribution Variance. A Contribution Variance resulting from an overpayment is amortized over 5 years as a level dollar credit. A Contribution Variance resulting from an underpayment is amortized over 5 years as a level dollar charge.
Unexpected Experience	A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.
Normal Cost	The annual cost assumed, under the actuarial funding method, for current and subsequent plan years. Sometimes referred to as "current service cost."
Present Value	The amount of funds presently required to provide a payment or series of payments in the future. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.
Unfunded Accrued Liability	The difference between the actuarial accrued liability and valuation assets.