

City of Ann Arbor Employees' Retirement System

June 30, 2016
Actuarial Valuation of Pension Benefits

October 2016



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Board of Trustees
City of Ann Arbor Employees' Retirement System
Ann Arbor, Michigan

Certification of Actuarial Valuation

Ladies and Gentlemen:

This report summarizes the actuarial valuation results of City of Ann Arbor Employees' Retirement System as of June 30, 2016 performed by Buck Consultants, LLC.

The actuarial valuation is based on unaudited financial and member data provided by the Executive Director and staff of the Retirement System and summarized in this report. The benefits considered are those delineated in the plan as amended and restated effective June 30, 2016. The actuary did not verify the data submitted, but did perform tests for consistency and reasonableness.

All costs, liabilities and other factors under the Plan were determined in accordance with generally accepted actuarial principles and procedures. An actuarial cost method is used to measure the actuarial liabilities which we believe is reasonable. Buck Consultants, LLC is solely responsible for the actuarial data and actuarial results presented in this report. This report fully and fairly discloses the actuarial position of the Plan.

The City of Ann Arbor Employees' Retirement System is funded by Employer and Member Contributions in accordance with the funding policy adopted by the Retirement Board. The funding objective for the City of Ann Arbor Employees' Retirement System is to pay required contributions that remain level as a percent of Member Compensation. The Retirement Board has also established a funding policy, which is the Minimum Required Policy, objective that the required contributions be sufficient to pay the Normal Costs of active plan members, Plan expenses, and amortize the Unfunded Actuarial Accrued Liability as a level percent of Member Compensation over a declining period. As of this valuation, the period is 25 years. This period will continue to be 25 years. The rolling 25-year aspect of the funding policy is similar to annually refinancing your home over a 25-year period – your home is never paid off. The same is true of a Retirement System that uses a rolling amortization policy. Thus, the continual restart of the amortization period implies that absent emerging favorable actuarial experience, or actuarial gains, the Unfunded Actuarial Accrued Liability will never be fully amortized. That being said, Section 1.3 of the City of Ann Arbor General Pension Policy allows for more than the Minimum Required policy as follows:

“The City of Ann Arbor will strive to achieve 100% funding of the City of Ann Arbor Employees' Retirement Plan. To the extent that 100% funding has been achieved, the City will continue to fund at a minimum the Normal Cost as defined by an outside actuary. To the extent that 100% funding had not been achieved, the City shall budget each fiscal year the higher of the ADC or the existing level of funding in the current budget year adjusted annually for the change in general fund budgeted revenues. In some years this may result in an excess contribution to the Pension Fund, which will serve to pay down the unfunded actuarial accrued liability and reduce future city cost increases.”

We refer to this at the "Funding Plan" contribution in this report. In this report, we projected the impact of the Funding Plan contribution by assuming 2% revenue growth. Under the Funding Plan policy, we project a funded ratio of 100% is projected to be achieved by 2043. This date will vary from valuation to valuation.

The continuation of the normal cost contribution and the potential for excess contributions do improve the funding policy. We will continue to monitor the policy with the Board.

The funding objective is currently being met and is projected to continue to be met in the future. 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.

As required under the ordinance Chapter 18, 1:558, this valuation was prepared on the basis of the interest, salary and demographic assumptions that were determined from the Experience Study for the period July 1, 2008 to June 30, 2013 prepared by Buck Consultants and approved by the Board for use beginning with the June 30, 2013 actuarial valuation. These assumptions will remain in effect for valuation purposes until such time as the Board adopts revised assumptions, which is scheduled to be performed before the June 30, 2018 valuation.

Actuarial Standards of Practice now require that the likelihood and extent of future mortality improvements be considered. We have reflected future mortality improvement in this valuation. A summary of the actuarial assumptions and methods used in this actuarial valuation are shown in Section 6.

The assumptions and methods used to determine the Actuarially Determined Contributions (ADC) of the City of Ann Arbor Employees' Retirement System as outlined in this report and all supporting schedules meet the parameters and requirements for disclosure of Governmental Accounting Standards Board (GASB) Statement No. 67, financial Reporting for Pension Plans and No. 68, accounting and Financial Reporting for Pensions. Based on member data and asset information provided by the Executive Director and staff of the Retirement System, we have prepared the Schedule of Funding Progress that is included in the Financial Section of the Comprehensive Annual Financial Report.

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. Buck will not accept any liability for any statement made about the report 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, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. Because of limited scope, Buck performed no analysis of the potential range of such future differences.

Board of Trustees
City of Ann Arbor Employees' Retirement System

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The undersigned are Enrolled Actuaries, Associates of the Society of Actuaries and Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all Applicable Actuarial Standards of Practice. We are available to answer any questions on the material contained in the report, or to provide explanations or further details as may be appropriate.

Respectfully submitted,

BUCK CONSULTANTS, LLC



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Principal and Consulting Actuary



Chih Hung Peng, ASA, MAAA, EA
Consultant

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Summary of Results

Overview

The City of Ann Arbor Employees' Retirement System provides pension and ancillary benefit payments to the terminated and retired employees of the City of Ann Arbor, Michigan. A Retirement Board comprised of employer, employee, and appointed representatives is responsible for administering the Plan and making investment decisions. This report presents the results of the actuarial valuation of the Plan benefits as of the valuation date of June 30, 2016.

Purpose

An actuarial valuation is performed on the retirement plan annually as of the beginning of the fiscal year. The main purposes of the actuarial valuation detailed in this report are:

1. To determine if the Board's funding policy for the Retirement Plan is being met considering current assets and the current employer and member contribution rates; or determine the employer contribution necessary to meet the Board's funding policy for the Plan;
2. To disclose the funding assets and liability measures as of the valuation date;
3. To disclose the accounting measures for the Plan required by GASB 67 and collective amounts under GABS68 for the city;
4. To review the current funded status of the Plan;
5. To compare actual and expected experience under the Plan during the last fiscal year;
6. And to report trends in contributions, assets, liabilities, and funded status over the last several years.

This actuarial valuation provides a "snapshot" of the funded position of the Retirement Plan based on the plan provisions, membership, assets, and actuarial assumptions as of the valuation date. Actuarial projections are also performed to provide a long-term view of the expected future funding status and contribution patterns.

Membership

Actives

As of June 30, 2016, there were 685 employees in active service covered under the provisions of the Plan. The significant age, service, salary and accumulated contribution information for these employees is summarized below, along with comparative figures from the last actuarial valuation one year earlier.

	June 30, 2016	June 30, 2015
Number of active employees	685	688
Average age	45.2	45.3
Average years of service	12.1	12.3
Total annual valuation salary	\$50,057,471	\$48,759,189
Average annual salary	\$73,077	\$70,871
Total accumulated contributions	\$54,330,778	\$54,506,635
Average accumulated contributions	\$79,315	\$79,225

The number of active members decreased by 0.4% from the previous valuation date. The average age of the active members decreased by 0.1 years and the average years of service decreased from 12.3 to 12.1. The total annual valuation salary increased by 2.7%. The average salary increased by 3.1% from the previous valuation. There were 633 active members who were also reported active in the June 30, 2015 actuarial valuation. The total salary for this group increased by 4.8%, which was slightly lower than the 4.9% increase we expected for the

group. Distributions of active members by age, service, and salary are given in Section 5.2. The salaries shown for active members are the actual annualized salaries reported.

A schedule of active member data and reconciliation of the active membership from the previous year is shown in Sections 5.3 and 5.4.

Inactives

In addition to the active members, there were 151 inactive vested members who did not elect to receive their accumulated contributions when they left covered employment. The significant age and annual benefit information for these inactive members are summarized below with comparative figures from the last actuarial valuation one year earlier.

	June 30, 2016	June 30, 2015
Number of inactive members	151	145
Average age	51.2	50.6
Average annual benefit payments	\$13,177	\$13,188

The number of inactive vested members increased by 4.1% from the previous valuation. The average age of the inactive vested members increased by 0.6 years. The Average Annual Pension Benefit for these members decreased by 0.1% from the previous valuation.

Distributions of inactive members by age and pension benefit are given in Section 5.9.

Retirees and Beneficiaries

In addition to the active and inactive members, there were 873 retired members and 144 beneficiaries who are receiving monthly benefit payments on the valuation date. The significant age and annual benefit information for these members are summarized below with comparative figures from the last actuarial valuation performed one year earlier.

	June 30, 2016	June 30, 2015
Number of members receiving payments		
➤ Retirees	873	854
➤ Beneficiaries	144	142
➤ Total	1017	996
Average age	68.4	68.2
Annual benefit amounts		
➤ Retirees	\$30,349,630	\$29,154,447
➤ Beneficiaries	\$3,145,464	\$3,094,742
➤ Total	\$33,495,094	\$32,249,189
Average annual benefit payments	\$32,935	\$32,379

The number of retired members and beneficiaries increased by 2.1% from the previous valuation date. The average age of this group increased by 0.2 years, while their average annual benefit payments increased by 1.7% from the previous valuation date.

Distributions of retired members by age and form of payment are given in Sections 5.6 through 5.9.

In our opinion, the membership data collected and prepared for use in this actuarial valuation meets the data quality standards required under Actuarial Standards of Practice No. 23.

Plan Assets

The Plan's assets are held in trust and invested for the exclusive benefit of plan members. The trust is funded by member and employer contributions, and pays benefits directly to eligible members in accordance with plan provisions. The assets are audited annually and are reported at fair value. On a fair value basis, the Plan has Net Assets Available for Benefits of \$456.6 million as of June 30, 2016. This includes a decrease of \$15.8 million over the Net Assets Available for Benefits of \$472.4 million as of June 30, 2015. During the prior year, the fair value of assets experienced an investment rate of return of 0.37%.

In order to reduce the volatility investment gains and losses can have on the Plan's actuarially required contribution and funded status, the Board has adopted a five-year smoothing method to determine the actuarial value of assets used for funding purposes. This method recognizes gains and losses, i.e. the difference between actual investment return during the year and the expected return based on the valuation interest rate, on a level basis over a five year period. In our opinion, this method complies with Actuarial Standards of Practice No. 44.

As of June 30, 2016, the assets available for benefits on an actuarial value basis were \$470.0 million. This represents an increase of \$10.5 million over the actuarial value of assets of \$459.5 million as of June 30, 2015. During the prior year, on an actuarial value of assets basis, the plan experienced an actuarial rate of return of 6.22%.

A summary of the assets held for investment, a summary of changes in assets, and the development of the actuarial value of assets is shown in Section 2.

Actuarial Experience

Differences between the expected experience based on the actuarial assumptions and the actual experience create changes in the actuarial accrued liability, actuarial value of assets, and the unfunded actuarial accrued liability from one year to the next. These changes create an actuarial gain if the experience is favorable and an actuarial loss if the experience is unfavorable. The Plan experienced a total net actuarial loss of \$6.9 million during the prior year. This net loss is about 1.3% of the plan's prior year actuarial accrued liability. The net loss is a combination of two principal factors, demographic experience and investment performance.

The demographic experience tracks actual changes in the plan's population compared to the assumptions for decrements such as mortality, turnover, and retirement, as well as pay increases. The Plan experienced a demographic loss of \$3.3 million during the year ending June 30, 2016. This loss increased the unfunded actuarial accrued liability by \$3.3 million and decreased the funded ratio by 0.5%.

Continued tracking of the demographic experience is warranted in order to confirm the appropriateness of the actuarial assumptions. Details of the demographic, economic, and other assumptions used to value the plan liabilities and normal cost can be found in Section 6. In our opinion, the economic assumptions comply with Actuarial Standards of Practice No. 27 and the demographic assumptions comply with Actuarial Standards of Practice No. 35.

On the asset side, the Plan experienced a loss on an actuarial value of assets basis. The actual rate of return on the actuarial value of plan assets for the year ending June 30, 2016 was approximately 6.22% compared to the assumption of 7.0%, resulting in an asset loss of \$3.5 million. This loss increased the unfunded actuarial accrued liability by \$3.5 million and decreased the funded ratio by 0.6%.

The rate of return on the fair value of assets for the year ending June 30, 2016 was lower than the assumed rate of 7.0%. The actuarial value of the assets recognizes only 20% of the 2016 fiscal year loss on fair value, delaying the recognition of the remaining 80% over the next four years. Moreover, the actuarial value of assets also recognizes deferred portions of prior years' gains and losses on fair value. It should be noted that the plan's assumed asset return of 7.0% is a long-term rate and short-term performance is not necessarily indicative of expected long-term future returns.

A summary of the actuarial gains and losses experienced during the prior year is shown in Section 1.3.

Actuarial Contributions

The Board has adopted a Funding Policy that requires contributions to be sufficient to pay the normal cost and amortize the unfunded actuarial accrued liability over a specified period. As of this valuation, the period is 25 years. This period will continue to be 25 years for all future fiscal years.

The City contributed \$13,352,412 under the Funding Plan during year ended June 30, 2016, which was \$1,119,680 more than the \$12,232,732 contribution determined under the Minimum Required Policy (the amount developed in the June 30, 2014 actuarial valuation), increasing the funded ratio by about 0.2%.

The normal cost represents the cost of the benefits that accrue during the year for active members under the Entry Age Actuarial Cost Method. It is determined as a level percentage of pay which, if paid from entry age to the assumed retirement age, assuming all the actuarial assumptions are exactly met by experience would accumulate to a fund sufficient to pay all benefits provided by the Plan. The expected member contributions are subtracted from this amount to determine the employer normal cost. The employer normal cost for 2018 has been determined to be \$6.9 million, or 12.89% of pay. This represents a decrease in the employer normal cost rate of 0.09% of pay from last year's employer normal cost rate of 12.98%.

The cost method also determines the actuarial accrued liability which represents the value of all accumulated past normal cost payments. This amount is compared to the actuarial value of assets to determine if the Plan is ahead or behind in funding as of the valuation date. The difference between the total actuarial accrued liability and the actuarial value of assets equals the amount of unfunded actuarial accrued liability or surplus (if negative) on the valuation date. This amount is amortized and added to the employer normal cost to determine the annual actuarially required employer contribution for the year.

The unfunded actuarial accrued liability as of June 30, 2016 is \$78.2 million. This represents an increase of \$4.5 million in the unfunded actuarial accrued liability from last year's amount of \$73.7 million. The annual payment required to amortize the unfunded actuarial accrued liability of \$78.2 million as of June 30, 2016 is \$4.8 million, or 9.0% of pay.

The annual actuarially required employer contribution for 2018 is \$11.8 million, or 21.9% of pay. This represents an increase of \$0.5 million in the employer contribution amount of \$11.3 million for 2017, or an increase of 0.2% of pay from last year's employer contribution rate of 21.7%.

The actuarial liabilities and development of the annual actuarial employer contribution is shown in Sections 1.1 and 1.2.

In our opinion, the measurement of the benefit obligations and determination of the actuarial cost of the Plan is performed in compliance with Actuarial Standards of Practice No. 4.

Funded Status

The funded status is a measure of the progress that has been made in funding the plan as of the valuation date. It is determined as a ratio of the actuarial value of assets divided by the total actuarial accrued liability on the valuation date. A ratio of over 100% represents a plan that is ahead in funding, and a ratio of less than 100% represents a plan that is behind in funding on the valuation date.

As of June 30, 2016 the funded ratio of the Plan is 85.7%. This represents a decrease of 0.5% from last year's funded ratio of 86.2% as of June 30, 2015. The funded ratio is not intended to measure the adequacy of funding in any analysis of a possible settlement of plan liabilities. Additionally, the measurement of a Funded Ratio using the Market Value of Assets would not be materially different.

A history of the unfunded actuarial accrued liability and the funded ratio is shown in Section 1.6.

Schedule of Funding Progress

(\$'s in 000's)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b-a)/c]
June 30, 2007	413,712	413,490	(222)	100.05%	50,678	-
June 30, 2008 @*	428,689	430,438	1,749	99.59%	51,287	3.41%
June 30, 2009 *^	426,283	455,219	28,936	93.64%	50,120	57.73%
June 30, 2010 *	421,387	466,883	45,496	90.26%	48,688	93.44%
June 30, 2011	423,734	481,330	57,596	88.03%	45,921	125.42%
June 30, 2012 @*	410,709	496,770	86,061	82.68%	44,004	195.58%
June 30, 2013 @	407,170	507,436	100,266	80.24%	45,063	222.50%
June 30, 2014	433,854	523,461	89,607	82.88%	47,957	186.85%
June 30, 2015	459,480	533,198	73,718	86.17%	48,759	151.19%
June 30, 2016	470,029	548,201	78,172	85.74%	50,057	156.17%

*The Retirement System provisions were amended.

^ Amortization period was changed from 15 to 30. Covered payroll adjusted for elimination of 18 Police positions and other 14 positions

@ Reflects a change in valuation assumptions.

Accounting Information

The Governmental Accounting Standards Board (GASB) issues statements which establish financial reporting standards for defined benefit pension plans and accounting for the pension expenditures and expenses for governmental employers. The required financial reporting information under GASB No. 67 and 68 for the City of Ann Arbor employees Retirement System can be found in Section 3.

Projections

During the year ending June 30, 2016, unfavorable investment returns and higher average salaries than last year resulted in a higher Minimum Required Policy employer contribution and lower funded ratio when compared to the projections based on the June 30, 2015 census and valuation assumptions. Based on the projection from June 30, 2015 valuation, we expected the contribution for 2018 to be \$10,250,000. The actual contribution based on this valuation is \$ 11,757,000. We expected the funded ratio for 2016 to be 87.53%. The actual funded ratio based on this valuation is 85.74%.

As part of the annual actuarial valuation, a forecast of expected future valuation results is performed over a 30 year period beginning on the valuation date. This analysis provides a dynamic look into the future to identify trends in future employer contributions and funded status. The forecast replaces active members who are assumed to decrement (terminate, retire, etc.) during the period with new employees resulting in a stable active membership. The forecast assumes all actuarial assumptions are exactly realized each year during the forecast period. A sensitivity analysis is also included to show the impact the investment return assumption can have on the future funding measures. The results of these forecasts can be found in Section 4.

Changes in Plan Provisions

There have been no changes in benefits or other plan provisions considered in this actuarial valuation since the last valuation performed as of June 30, 2015.

Changes in Actuarial Assumptions, Methods, or Procedures

There have been no changes in the actuarial assumptions, actuarial cost method, asset valuation method, or valuation procedures since the last actuarial valuation performed as of June 30, 2015.

Comparative Summary of Key Actuarial Valuation Results

	Actuarial Valuation as of	
	June 30, 2016	June 30, 2015
Summary of Member Data		
Number of Members Included in the Valuation		
▪ Active Members	685	688
▪ Inactive Members	151	145
▪ Retirees and beneficiaries	1017	996
▪ Total	1,853	1,829
Annual Payroll		
▪ Average (actual)	73,077	70,871
Annual Benefit Payments		
▪ Inactive Members(Average)	13,177	13,188
▪ Retirees and beneficiaries (Average)	32,935	32,379
Summary of Assets		
Fair Value		
▪ <i>Rate of Return</i>	0.37%	4.22%
Actuarial Value		
▪ <i>Rate of Return</i>	6.22%	9.96%
Summary of Liabilities		
Total Actuarial Accrued Liability	548,201,472	533,198,267
Actuarial Value of Assets	470,028,788	459,480,142
Unfunded Actuarial Accrued Liability	78,172,684	73,718,125
Funded Ratio	85.74%	86.17%
Actuarial Employer Contribution Rate		
Employer Normal Cost Rate	12.89%	12.98%
Amortization of Unfunded Actuarial Accrued Liability (Surplus) Rate	9.04%	8.75%
Employer Actuarial Contribution Rate	21.93%	21.73%
Employee Contribution Rate	6.00%	6.00%
Total Actuarial Contribution Rate	27.93%	27.73%
Actual/Statutory Contribution Rate	27.93%	27.73%
Funding Period (years)	25	25

Section 1: Actuarial Funding Results

Section 1.1 - Actuarial Liabilities and Normal Cost

Actuarial Liabilities	General Members	Police Members	Fire Members	Totals
1. Present Value of Projected Benefits				
Active Members				
• Retirement Benefits	117,590,566	62,859,647	42,060,010	222,510,223
• Withdrawal Benefits	8,854,342	412,642	421,262	9,688,246
• Disability Benefits	4,157,578	1,658,952	362,898	6,179,428
• Death Benefits	971,468	189,024	263,646	1,424,138
Total	131,573,954	65,120,265	43,107,816	239,802,035
2. Inactive Members with Deferred Benefits	11,151,839	1,090,182	419,897	12,661,918
3. Retired Members and Beneficiaries Receiving Benefits	189,992,921	103,034,142	69,108,876	362,135,939
4. Total Present Value of Projected Benefits (1. + 2. + 3.)	332,718,714	169,244,589	112,636,589	614,599,892
5. Present Value of Future Normal Costs	42,483,595	14,370,392	9,544,433	66,398,420
6. Total Actuarial Accrued Liability (4. - 5.)	290,235,119	154,874,197	103,092,156	548,201,472

Normal Cost 2018	General Members	Police Members	Fire Members	Totals
1. Active Members				
a. Retirement Benefits	14.18%	19.64%	20.56%	
b. Withdrawal Benefits	2.45%	0.64%	0.70%	
c. Disability Benefits	0.80%	0.90%	0.29%	
d. Death Benefits	0.13%	0.06%	0.14%	
2. Total Normal Cost (As a % of pay*)	17.56%	21.25%	21.69%	18.89%
3. Expected Member Contribution(As a % of pay*)^	6.00%	6.00%	6.00%	6.00%
4. Expected Member Contribution(Dollar amount*)	2,110,474	674,054	432,767	3,217,295
5. Employer Normal Cost (As a % of pay*)	11.56%	15.25%	15.69%	12.89%
6. Employer Normal Cost (Dollar amount*)	4,066,179	1,713,219	1,131,685	6,911,083

*City's dollar contribution includes a payroll projection factor of 1.0712 to project active member payroll to the applicable fiscal year

^The plan changes contribution rates to 6% as of 6/30/2012

Section 1.2 - Actuarial Contributions

Fiscal Year Ending	June 30, 2018				June 30, 2017
	General	Police	Fire	Total	Total
Development of Employer Contribution					
Minimum Required Contribution					
1. Annual Payroll*	35,174,561	11,234,226	7,212,776	53,621,563	52,230,843
2. Total Actuarial Accrued Liability	290,235,119	154,874,197	103,092,156	548,201,472	533,198,267
3. Actuarial Value of Assets**	248,848,039	132,789,375	88,391,374	470,028,788	459,480,142
4. Unfunded Actuarial Accrued Liability (UAAL) (2.- 3.)	41,387,080	22,084,822	14,700,782	78,172,684	73,718,125
5. Funded Ratio (3. / 2.)	85.74%	85.74%	85.74%	85.74%	86.17%
6. UAAL as a Percent of Annual Payroll (4. / 1.)	117.66%	196.59%	203.82%	145.79%	141.14%
7. Amortization Payment for UAAL***					
a. Amount	2,565,736	1,369,118	911,355	4,846,209	4,570,055
b. As a % of pay	7.29%	12.19%	12.64%	9.04%	8.75%
8. Employer Normal Cost					
a. Amount	4,066,179	1,713,219	1,131,685	6,911,083	6,778,798
b. As a % of pay	11.56%	15.25%	15.69%	12.89%	12.98%
9. Actuarial Employer Contribution					
a. Amount	6,631,915	3,082,337	2,043,040	11,757,292	11,348,853
b. As a % of pay	18.85%	27.44%	28.33%	21.93%	21.73%
10. Funding Period (years)	25	25	25	25	25
Funding Plan					
11. Assumed revenue increase				2%	
12. Estimated Funding Plan Contribution				13,081,834	12,825,327 ^
Estimated City Contribution					
14. Estimated City Contribution (Greater of 9 and 12)				13,081,834	12,825,327

*Includes a payroll projection factor of 1.0712 to project active member payroll to the applicable fiscal year

** Actuarial Value of Assets for the three employee groups are allocated proportional to Actuarial Accrued Liability

*** At the October 15, 2009 Board meeting, the Board adopted a 30-year amortization for the fiscal year ending June 30, 2011 contribution.

This period is scheduled to decline by one year each year until fiscal year ending June 30, 2015 and thereafter when a 25-year amortization period is used.

Actual FYE 2018 contribution will likely be higher than ADC since the minimum increase in contributions is the increase in City revenues

^ FYE17 contribution is projected to be \$12,825,237 reported by City

Section 1.3 - Actuarial (Gain) / Loss

(\$'s in 000's)

Development of Actuarial (Gain) / Loss	Amount
1. Expected Actuarial Accrued Liability	
a. Actuarial Accrued Liability at June 30, 2015	533,198
b. Normal Cost at June 30, 2015	8,869
c. Interest on a. + b. to End of Year	37,945
d. Benefit Payments and Refund of Contributions for June 30, 2015, with Interest to End of Year	35,149
e. Expected Actuarial Accrued Liability Before Changes (a. + b. + c. - d.)	544,863
f. Change in Actuarial Accrued Liability at June 30, 2016, Due to Change in Actuarial Assumptions (Experience Study)	0
g. Change in Actuarial Accrued Liability at June 30, 2016, Due to Change in Plan Provisions	0
h. Expected Actuarial Accrued Liability at June 30, 2016 (e. + f. + g.)	544,863
2. Actuarial Accrued Liability at June 30, 2016	548,201
3. Liability (Gain) / Loss (2. - 1.h.)	3,338
4. Expected Actuarial Value of Assets	
a. Actuarial Value of Assets at June 30, 2015	459,480
b. Interest on a. to End of Year	32,164
c. Contributions Made for June 30, 2015	16,492
d. Interest on c. to End of Year	577
e. Benefit Payments and Refund of Contributions for June 30, 2015, with Interest to End of Year	35,149
f. Change in Actuarial Value of Assets at June 30, 2016 due to Change in Method	0
g. Expected Actuarial Value of Assets at June 30, 2016 (a. + b. + c. + d. - e. - f.)	473,564
5. Actuarial Value of Assets as of June 30, 2016	470,029
6. Actuarial Asset (Gain) / Loss (4.g. - 5.)	3,535
7. Actuarial (Gain) / Loss (3. + 6.)	6,873

Section 1.4 - Analysis of Financial Experience

Analysis of Actuarial (Gains) and Losses

Resulting From Differences Between Assumed Experience and Actual Experience

(\$'s in 000's)

Type of (Gain) or Loss	Year End June 30, 2016	As a % of Last Year's AAL
(1) COLA Experience	0	0.00%
(2) Salary Experience	95	0.02%
(3) Investment Experience	3,535	0.66%
(4) Retiree Mortality Experience	237	0.04%
(5) Contribution Shortfall	0	0.00%
(6) (Gain) or Loss During Year From Experience, (1) + (2) + (3) + (4) + (5)	3,867	0.72%
(7) Asset Valuation Method	0	0.00%
(8) Data correction	108	0.02%
(9) Return to work	5	0.00%
(10) Form of payment Changes	(9)	0.00%
(11) Turnover	650	0.12%
(12) Retirement	1,494	0.28%
(13) Deaths among actives	154	0.03%
(14) Disability retirements	258	0.05%
(15) Other	346	0.06%
(16) Total (Gain) or Loss During Year, (6) + (7) + (8) + (9) + (10)+ (11)+ (12) + (13)+ (14)+ (15)	6,873	1.28%

Section 1.5 - Actuarial Balance Sheet

Financial Resources	June 30, 2016
1. Actuarial Value of Assets	470,028,788
2. Present Value of Future Contributions	
(a) Expected Member contributions	21,091,561
(b) Employer Normal Cost	45,306,859
(c) State Appropriations	0
(d) Total	66,398,420
3. Unfunded Actuarial Accrued Liability/(Reserve)	78,172,684
4. Total Assets [1 + 2(d) + 3]	614,599,892

Benefit Obligations	June 30, 2016
1. Present Value of Future Benefits	
(a) Active members	239,802,035
(b) Inactive members	12,661,918
(c) Retirees, disabilities and beneficiaries	362,135,939
(d) Total	614,599,892

Section 1.6 - History of UAAL and Funded Ratio

(\$'s in 000's)

Valuation Date	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Funded Ratio (AVA as a % of AAL)	Unfunded Actuarial Accrued Liability (UAAL)
June 30, 2007	413,490	413,712	100.05%	(222)
June 30, 2008 @*	430,438	428,689	99.59%	1,749
June 30, 2009 *^	455,219	426,283	93.64%	28,936
June 30, 2010 *	466,883	421,387	90.26%	45,496
June 30, 2011	481,330	423,734	88.03%	57,596
June 30, 2012 @*	496,770	410,709	82.68%	86,061
June 30, 2013 @	507,436	407,170	80.24%	100,266
June 30, 2014	523,461	433,854	82.88%	89,607
June 30, 2015	533,198	459,480	86.17%	73,718
June 30, 2016	548,201	470,029	85.74%	78,172

@ Reflects a change in valuation assumptions.

*The Retirement System provisions were amended.

^ Amortization period was changed from 15 to 30.

Section 1.7 - Solvency Test

Valuation Date	Aggregate Accrued Liability For:			Valuation Assets (000's)	Portion of Accrued Liabilities Covered by Assets		
	(1) Active Member Contributions (000's)	(2) Inactive Members (000's)	(3) Active Members (Employer-Financed Portion) (000's)		(1)	(2)	(3)
June 30, 2007	2,653			413,712			
June 30, 2008	2,726			428,689			
June 30, 2009	2,815	276,709	175,695	426,283	100.00%	100.00%	83.53%
June 30, 2010	3,148	306,296	157,439	421,387	100.00%	100.00%	71.10%
June 30, 2011	2,790	327,964	150,576	423,734	100.00%	100.00%	61.75%
June 30, 2012	2,797	348,249	145,724	410,709	100.00%	100.00%	40.94%
June 30, 2013	2,858	353,683	150,895	407,170	100.00%	100.00%	33.55%
June 30, 2014	2,948	356,397	164,116	433,854	100.00%	100.00%	45.40%
June 30, 2015	3,013	361,314	168,871	459,480	100.00%	100.00%	56.35%
June 30, 2016	3,139	374,798	170,264	470,029	100.00%	100.00%	54.09%

Section 2: Plan Assets

Section 2.1 - Summary of Fair Value of Assets

Asset Category	Fair Value as of June 30, 2016		Fair Value as of June 30, 2015	
	Amount	%	Amount	%
1. Cash and Short-Term Investments				
a. Cash in Bank	0	0.00%	0	0.00%
b. Other short-term	10,763,660	2.34%	7,146,277	1.50%
c. Total	10,763,660	2.34%	7,146,277	1.50%
2. Investments at Fair Value				
a. U.S. Treasury Notes	0	0.00%	0	0.00%
b. Fixed Income	156,764,196	34.04%	163,724,182	34.41%
c. Domestic Stocks and Equity	242,660,096	52.68%	253,068,948	53.19%
d. International Equity	0	0.00%	0	0.00%
e. Real Estate	34,807,044	7.56%	34,788,673	7.31%
f. Hedge Funds	14,730,692	3.20%	15,602,048	3.28%
g. Total	448,962,028	97.48%	467,183,851	98.19%
3. Other Assets	870,434	0.19%	1,469,866	0.31%
4. Total Assets (1.c + 2.g + 3.)	460,596,122	100%	475,799,994	100.00%
5. Receivables				
a. Interest and Dividends	0		0	
b. Investments Sold	0		0	
c. Other Receivables	0		0	
d. Total	0		0	
6. Payables				
a. Payable for Investments Purchased	0		0	
b. Securities Lending Obligation in Excess of Collateral	0		0	
c. Accounts Payable and Accrued Liabilities	3,956,735		3,217,098	
d. Deferred Inflow of Resources	19,066		209,000 *	
e. Total	3,975,801		3,426,098	
7. Net Assets for Pension Benefits [4. + 5.d - 6.e.]	456,620,321		472,373,896	

* Prior year adjustment to Reserves for Pension Liability

Section 2.2 - Changes in Fair Value of Assets

Transactions	June 30, 2016	June 30, 2015
Additions		
1. Contributions		
a. Contributions from Employers	13,352,412	13,091,474
b. Contributions from Plan Members	3,139,266	3,013,354
c. Total	16,491,678	16,104,828
2. Net Investment Income		
a. Interest and Dividends	2,920,866	4,035,448
b. Net Appreciation(Depreciation)	258,186	17,058,048
c. Rental Income	0	0
d. Net Securities Lending Income	0	0
e. Securities Lending Unrealized Gain/(Loss)	0	0
f. Miscellaneous	0	0
g. Total	3,179,052	21,093,496
h. Investment Expense	739,738	1,016,928
i. Net Investment Income	2,439,314	20,076,568
3. Total Additions	18,930,992	36,181,396
Deductions		
4. Benefits and Expenses		
a. Retirement Benefits	32,996,135	32,146,995
b. Refund of Contributions	963,896	520,517
c. Death	0	0
d. Supplemental Payment	0	0
e. Administrative Expenses	724,536	616,299
f. Prior year adjustment to Reserves for Pension Liability	0	209,000
5. Total Deductions	34,684,567	33,492,811
6. Net Increase	(15,753,575)	2,688,585
7. Net Assets Held in Trust for Pension Benefits		
a. Beginning of Year	472,373,896	469,685,311
b. End of Year	456,620,321	472,373,896

Section 2.3 - Actuarial Value of Assets

Development of Actuarial Value of Assets	Amount																								
1. Actuarial Value of Assets as of June 30, 2015	459,480,142																								
2. Unrecognized Return as of June 30, 2015	12,893,754																								
3. Fair Value of Assets as of June 30, 2015 (1. + 2.)	472,373,896																								
4. Contributions																									
(a) Member (includes purchased service)	3,139,266																								
(b) Employer	13,352,412																								
(c) State appropriations	0																								
(d) Total	16,491,678																								
5. Distributions																									
(a) Benefit payments	32,996,135																								
(b) Refund of contributions	963,896																								
(c) Total	33,960,031																								
6. Expected Return at 7.00% on																									
(a) Item 1	32,163,610																								
(b) Item 2	902,563																								
(c) Item 4 (d)	577,209																								
(d) Item 5 (c)	1,188,601																								
(e) Total [(a) + (b) + (c) – (d)]	32,454,781																								
7. Actual Return on Fair Value for Fiscal year, Net of Investment Expenses & Administrative Expenses	1,714,778																								
8. Return to be Spread for Fiscal year (7. – 6.e+6.b)	(29,837,440)																								
9. Total Fair Value of Assets as of June 30, 2016	456,620,321																								
10. Return to be Spread																									
	<table border="1"> <thead> <tr> <th style="background-color: #0070C0; color: white;">Fiscal Year</th> <th style="background-color: #0070C0; color: white;">Return to be Spread</th> <th style="background-color: #0070C0; color: white;">Unrecognized Percent</th> <th style="background-color: #0070C0; color: white;">Unrecognized Return</th> </tr> </thead> <tbody> <tr> <td>2016</td> <td style="text-align: right;">(29,837,440)</td> <td style="text-align: center;">80%</td> <td style="text-align: right;">(23,869,952)</td> </tr> <tr> <td>2015</td> <td style="text-align: right;">(10,329,845)</td> <td style="text-align: center;">60%</td> <td style="text-align: right;">(6,197,907)</td> </tr> <tr> <td>2014</td> <td style="text-align: right;">31,731,939</td> <td style="text-align: center;">40%</td> <td style="text-align: right;">12,692,776</td> </tr> <tr> <td>2013</td> <td style="text-align: right;">19,833,081</td> <td style="text-align: center;">20%</td> <td style="text-align: right;">3,966,616</td> </tr> <tr> <td colspan="3" style="text-align: center;">Total</td> <td style="text-align: right;">(13,408,467)</td> </tr> </tbody> </table>	Fiscal Year	Return to be Spread	Unrecognized Percent	Unrecognized Return	2016	(29,837,440)	80%	(23,869,952)	2015	(10,329,845)	60%	(6,197,907)	2014	31,731,939	40%	12,692,776	2013	19,833,081	20%	3,966,616	Total			(13,408,467)
Fiscal Year	Return to be Spread	Unrecognized Percent	Unrecognized Return																						
2016	(29,837,440)	80%	(23,869,952)																						
2015	(10,329,845)	60%	(6,197,907)																						
2014	31,731,939	40%	12,692,776																						
2013	19,833,081	20%	3,966,616																						
Total			(13,408,467)																						
11. Actuarial Value of Assets (9. – 10.)	470,028,788																								
12. Recognized Rate of Return for the Year on Actuarial Value of Assets	6.22%																								
13. Rate of Return for the Year on Market Value of Assets	0.37%																								

Section 2.4 - Historical Asset Rate of Return

Year Ending 30-Jun	Actuarial Value Annual Recognized Rate of Return	Fair Value Annual Market Rate of Return
2007	8.50%	16.30%
2008	7.20%	-5.70%
2009	1.30%	-20.00%
2010	1.60%	12.50%
2011	3.78%	23.37%
2012	0.60%	0.01%
2013	4.04%	12.28%
2014	11.18%	14.23%
2015	9.96%	4.22%
2016	6.22%	0.37%

Section 2.5 - Forecast of Expected Benefit Payments

Year Ending June 30	Active Employees				Retired Members, Disabled Members and Beneficiaries				Total	
	General Members	Police Members	Fire Members	Subtotal	General Members	Police Members	Fire Members	Subtotal	General Members	Police Members
2016	560,204	314,546	176,491	1,051,241	17,872,476	9,135,747	6,643,320	33,651,543	18,432,680	9,432,167
2017	1,634,594	921,873	556,157	3,112,624	17,618,573	9,064,863	6,538,149	33,221,585	19,253,167	9,999,854
2018	2,638,615	1,456,526	960,441	5,055,582	17,472,826	8,984,933	6,452,315	32,910,074	20,111,441	10,444,167
2019	3,611,783	1,897,077	1,316,537	6,825,397	17,321,208	8,895,628	6,340,406	32,557,242	20,932,991	10,799,854
2020	4,532,056	2,379,005	1,570,518	8,481,579	17,155,599	8,822,088	6,224,552	32,202,239	21,687,655	11,200,167
2021	5,433,003	3,003,144	1,878,455	10,314,602	16,958,506	8,713,254	6,104,231	31,775,991	22,391,509	11,779,854
2022	6,287,211	3,680,861	2,180,257	12,148,329	16,730,471	8,594,634	5,978,767	31,303,872	23,017,682	12,279,854
2023	7,091,249	4,291,548	2,522,669	13,905,466	16,463,636	8,485,771	5,847,644	30,797,051	23,554,885	12,779,854
2024	7,834,523	4,824,739	2,846,517	15,505,779	16,207,590	8,347,251	5,710,559	30,265,400	24,042,113	13,179,854
2025	8,588,075	5,242,320	3,196,214	17,026,609	15,879,026	8,248,718	5,567,175	29,694,919	24,467,101	13,449,854
2026	9,385,829	5,615,447	3,580,558	18,581,834	15,653,626	8,090,919	5,417,249	29,161,794	25,039,455	13,709,854
2027	10,174,396	6,073,301	3,943,862	20,191,559	15,364,749	7,923,746	5,260,544	28,549,039	25,539,145	13,959,854
2028	10,975,272	6,399,887	4,257,194	21,632,353	15,151,222	7,747,398	5,134,065	28,032,685	26,126,494	14,149,854
2029	11,768,021	6,518,608	4,495,116	22,781,745	14,851,360	7,609,204	4,963,569	27,424,133	26,619,381	14,129,854
2030	12,529,040	6,576,373	4,705,480	23,810,893	14,472,584	7,415,204	4,786,575	26,674,363	27,001,624	13,999,854
2031	13,298,779	6,577,795	4,917,269	24,793,843	14,075,584	7,255,453	4,603,352	25,934,389	27,374,363	13,839,854
2032	13,968,673	6,593,886	5,081,279	25,643,838	13,657,825	7,045,368	4,414,549	25,117,742	27,626,498	13,639,854
2033	14,702,431	6,665,793	5,196,667	26,564,891	13,196,848	6,826,518	4,221,066	24,244,432	27,899,279	13,449,854
2034	15,383,979	6,783,220	5,279,739	27,446,938	12,815,241	6,600,397	4,023,446	23,439,084	28,199,220	13,339,854
2035	16,092,921	6,912,665	5,340,336	28,345,922	12,384,874	6,367,536	3,829,710	22,582,120	28,477,795	13,229,854
2036	16,624,878	7,084,157	5,369,743	29,078,778	11,916,833	6,128,482	3,625,850	21,671,165	28,541,711	13,219,854
2037	17,140,693	7,315,845	5,409,327	29,865,865	11,422,492	5,884,044	3,420,533	20,727,069	28,563,185	13,199,854
2038	17,573,278	7,475,249	5,415,162	30,463,689	10,887,985	5,634,730	3,214,645	19,737,360	28,461,263	13,109,854
2039	18,014,307	7,664,398	5,377,488	31,056,193	10,340,753	5,380,710	3,009,257	18,730,720	28,355,060	13,049,854
2040	18,314,147	7,859,207	5,345,187	31,518,541	9,800,687	5,122,799	2,805,792	17,729,278	28,114,834	12,969,854
2041	18,436,254	7,907,590	5,275,212	31,619,056	9,227,624	4,862,437	2,605,324	16,695,385	27,663,878	12,779,854
2042	18,446,800	7,893,176	5,183,255	31,523,231	8,639,444	4,600,707	2,408,864	15,649,015	27,086,244	12,499,854
2043	18,319,891	7,830,551	5,081,349	31,231,791	8,049,742	4,338,561	2,217,498	14,605,801	26,369,633	12,169,854
2044	18,096,688	7,711,576	4,983,139	30,791,403	7,462,455	4,077,282	2,032,306	13,572,043	25,559,143	11,789,854
2045	17,763,918	7,581,051	4,867,271	30,212,240	6,882,169	3,818,128	1,854,388	12,554,685	24,646,087	11,339,854
2046	17,358,905	7,432,966	4,733,678	29,525,549	6,313,949	3,562,086	1,684,628	11,560,663	23,672,854	10,939,854

*Forecast based on the present employees without assumption about replacement employees

Section 2.6 - Analysis of Changes In Reserves For The Year Ended June 30, 2016

	Reserve for Employee Contributions	- - - Reserve for Employer Contributions- - -			Reserve Retired Benefit Payments
		Regular Account	Undistributed Investment Income	Total	
Balance June 30, 2015	\$62,658,851	\$61,373,053	\$0	\$61,373,053	\$348,373,053
Prior Year Adjustment	\$0	(\$1,388,275)	\$0	(\$1,388,275)	\$1,388,275
Adjustment to the value of the pension	\$0	\$0	\$0	\$0	\$0
Additions:					
Employee contributions	\$3,139,266			\$0	
Employer contributions		\$13,352,412		\$13,352,412	
Investment income			\$3,179,052	\$3,179,052	
Transfers:					
Board Transfers					
Allowances awarded	(\$6,177,879)	(\$15,316,648)		(\$15,316,648)	\$21,494,527
7/1/2015 Mark to Market					
Deductions:					
Benefits paid					(\$32,494,527)
Refunds	(\$963,896)				
Investment and admin. services			(\$1,464,274)	(\$1,464,274)	
Insurance payments					
Investment income distributions:					
Regular	\$3,836,882	\$4,130,186	(\$32,045,630)	(\$27,915,444)	\$24,031,694
Extra interest					
Closing entry		(\$30,330,852)	\$30,330,852	\$0	
Balance June 30, 2016	\$62,493,224	\$31,819,877	\$0	\$31,819,876	\$362,493,224

Section 2.7 - Reserve For Retired Benefit Payments

	Regular Account	Pension Contingency Account	Pension Adjustment Account	T
Balance June 30, 2015	\$348,341,992	\$0	\$0	
Miscellaneous Adjustments	0			
Adjustment for benefit reserve	0			
Beginning of Year Adjustments:				
Special Transfers (per Board action)	0			
Adjustment per 6/30/2015 Actuarial valuation	<u>1,388,275</u>	<u>0</u>	<u>0</u>	
Balance July 1, 2015	\$349,730,267	\$0	\$0	
Transfers for New Retirees:				
Employer assets	15,316,648			
Member contributions	6,177,879			
Deductions:				
Benefits Paid	(32,996,136)			
Miscellaneous adjustment:				
Investment Income Credited:				
Regular	24,078,562			
Extra Interest				
End of Year Adjustments:				
Special Transfers (per Board action)	<u>0</u>	<u>0</u>	<u>0</u>	
Balance June 30, 2016	\$362,307,221	\$0	\$0	

* Buck Consultants recommend that regular account be reset to the retiree liability as of June 30, 2016.

Section 3: Accounting Information

Section 3.1 - Schedule of Changes in Net Pension Liability as of June 30, 2016

The GASB Statement No. 67 Change in Net Pension Liability:

Schedule of Changes In Net Pension Liability	Fiscal Year Ending June 30, 2016	Fiscal Year Ending June 30, 2015
Total pension liability		
Service Cost	\$ 8,729,000	\$ 9,760,000
Interest	36,746,000	36,193,000
Changes of benefit terms	-	-
Differences between expected and actual experience	(3,826,000)	279,000
Changes of assumptions	-	-
Benefit payments, including refunds of member contributions	(33,960,000)	(32,668,000)
Net change in total pension liability	7,689,000	13,564,000
Total pension liability - beginning	\$ 537,025,000	\$ 523,461,000
Total pension liability - ending (a)	\$ 544,714,000	\$ 537,025,000
Plan fiduciary net position		
Contributions - employer	\$ 13,352,000	\$ 13,091,000
Contributions - member	3,139,000	3,013,000
Net investment income	2,439,000	20,078,000
Benefit payments, including refunds of member contributions	(33,960,000)	(32,668,000)
Administrative expense	(724,000)	(616,000)
Other*	-	(209,000)
Net change in plan fiduciary net position	(15,754,000)	2,689,000
Plan fiduciary net position - beginning	\$ 472,374,000	\$ 469,685,000
Plan fiduciary net position - ending (b)	\$ 456,620,000	\$ 472,374,000
Net pension liability (asset) - ending (a)-(b)	\$ 88,094,000	\$ 64,651,000

Section 3.2 - Net Pension Liability (Asset)

The GASB Statement No. 67 Net Pension Liability

Net pension liability (asset)	June 30, 2016	June 30, 2015
Total pension liability	\$ 544,714,000	\$ 537,025,000
Plan fiduciary net position (estimate for 2015)	456,620,000	472,374,000
Net pension liability (asset)	<u>\$ 88,094,000</u>	<u>\$ 64,651,000</u>
Plan fiduciary net position as a percentage of the total pension liability	83.83%	87.96%
Covered employee payroll	\$ 50,057,000	\$ 48,759,000
Net pension liability (asset) as a percentage of covered employee payroll	175.99%	132.59%

Section 3.3 - Sensitivity

The GASB Statement No. 67 Sensitivity of Net Pension Liability

Sensitivity of the Net Pension Liability to Changes in the Discount Rate at June 30, 2016	1% Decrease	Current Discount Rate	1 % increase
Discount rate	6.00%	7.00%	8.00%
Total pension liability	\$ 604,298,000	\$ 544,714,000	\$ 494,396,000
Plan fiduciary net position	<u>456,620,000</u>	<u>456,620,000</u>	<u>456,620,000</u>
Net pension liability (asset)	\$ 147,678,000	\$ 88,094,000	\$ 37,776,000

Section 3.4 - GASB68 Information

Collective Pension Expense

Pension Expense	Measurement Year Ending June 30, 2016	Measurement Year Ending June 30, 2015
Service Cost	\$ 8,729,000	\$ 9,760,000
Interest Cost on Total Pension Liability	36,746,000	36,193,000
Projected Earnings On Plan Investments	(32,429,000)	(32,277,000)
Contributions - Member	(3,139,000)	(3,013,000)
Administrative Expense	724,000	616,000
Current period		
Plan changes	-	-
Changes of Assumptions	-	-
Differences between expected and actual liab. experience	(1,226,000)	89,000
Difference between projected and actual earnings	5,998,000	2,439,800
<u>Recognition of prior years'</u>		
Deferred outflows	2,528,800	
Deferred inflows	-	
Other changes in fiduciary net position	-	-
Total Pension Expense	17,931,800	13,807,800

Pension expense is generally the difference in net pension liability from one measurement date to the next, with the exception of certain amounts that are called deferred inflows and outflows of resources and employer contributions. Inflows are amounts that reduce the net pension liability, while outflows increase the net pension liability. A portion of inflow and outflows are recognized in the current year's pension expense and the rest is deferred and recognized in future years.

The following table shows the change in net pension liability for the 2016 measurement year, isolating the amounts that are subject to deferral. Comparable results from the prior measurement period are also shown.

Change in Net Pension Liability	Fiscal Year Ending June 30, 2016	Fiscal Year Ending June 30, 2015
Balances at beginning of the Year	\$ 64,651,000	\$ 53,776,000
Change for the year:		
Service cost	8,729,000	9,760,000
Interest cost on total pension liability	36,746,000	36,193,000
Projected earnings on plan investments	(32,429,000)	(32,277,000)
Contributions - employer	(13,352,000)	(13,091,000)
Contributions - member	(3,139,000)	(3,013,000)
Administrative expense	724,000	616,000
Plan changes	-	-
<u>Amounts subject to deferral</u>		
Changes in assumptions	-	-
Differences between expected and actual liab. experience	(3,826,000)	279,000
Difference between projected and actual earnings	29,990,000	12,199,000
Prior year adjustment to Reserves for Pension Liability	-	209,000
Net changes	23,443,000	10,875,000
Balances at end of the Year	\$ 88,094,000	\$ 64,651,000

Section 3.4 - GASB68 Information (continued)

Details of the recognized and deferred inflows and outflows of resources

Amortization of Changes in Assumptions

Measurement Year	2015	2016	20XX	Total	Outflows	Inflows
Amount Established \$	-	-				
Recognition Period	3.12	3.12				
Annual Recognition \$	-	-				
Amount Recognized						
2015 \$	-	-		-	-	-
2016	-	-		-	-	-
2017	-	-		-	-	-
2018	-	-		-	-	-
2019	-	-		-	-	-
2020	-	-		-	-	-
2021	-	-		-	-	-
2022	-	-		-	-	-
2023	-	-		-	-	-
2024	-	-		-	-	-
2025	-	-		-	-	-
2026	-	-		-	-	-
2027	-	-		-	-	-
Deferred Balance						
2015 \$	-	-		-	-	-
2016	-	-		-	-	-
2017	-	-		-	-	-
2018	-	-		-	-	-
2019	-	-		-	-	-
2020	-	-		-	-	-
2021	-	-		-	-	-
2022	-	-		-	-	-
2023	-	-		-	-	-
2024	-	-		-	-	-
2025	-	-		-	-	-
2026	-	-		-	-	-
2027	-	-		-	-	-

Section 3.4 - GASB68 Information (continued)

Details of the recognized and deferred inflows and outflows of resources Amortization of Difference between Actual and Expected Experience

Measurement Year	2015	2016	20XX	Total	Outflows	Inflows
Amount Established \$	279,000	(3,826,000)				
Recognition Period	3.12	3.12				
Annual Recognition \$	89,000	(1,226,000)				
Amount Recognized						
2015 \$	89,000			89,000	89,000	-
2016	89,000	(1,226,000)		(1,137,000)	89,000	(1,226,000)
2017	89,000	(1,226,000)		(1,137,000)	89,000	(1,226,000)
2018	12,000	(1,226,000)		(1,214,000)	12,000	(1,226,000)
2019	-	(148,000)		(148,000)	-	(148,000)
2020	-	-		-	-	-
2021	-	-		-	-	-
2022	-	-		-	-	-
2023	-	-		-	-	-
2024	-	-		-	-	-
2025	-	-		-	-	-
2026	-	-		-	-	-
2027	-	-		-	-	-
Deferred Balance						
2015 \$	190,000			190,000	190,000	-
2016	101,000	(2,600,000)		(2,499,000)	101,000	(2,600,000)
2017	12,000	(1,374,000)		(1,362,000)	12,000	(1,374,000)
2018	-	(148,000)		(148,000)	-	(148,000)
2019	-	-		-	-	-
2020	-	-		-	-	-
2021	-	-		-	-	-
2022	-	-		-	-	-
2023	-	-		-	-	-
2024	-	-		-	-	-
2025	-	-		-	-	-
2026	-	-		-	-	-
2027	-	-		-	-	-

Section 3.4 - GASB68 Information (continued)

Details of the recognized and deferred inflows and outflows of resources Amortization of Difference between Projected and Actual Earnings

Measurement Year	2015	2016	20XX	Total	Outflows	Inflows
Amount Established	\$ 12,199,000	29,990,000				
Recognition Period	5.00	5				
Annual Recognition	\$ 2,439,800	5,998,000				
Amount Recognized						
2015	\$ 2,439,800			2,439,800	2,439,800	-
2016	2,439,800	5,998,000		8,437,800	8,437,800	-
2017	2,439,800	5,998,000		8,437,800	8,437,800	-
2018	2,439,800	5,998,000		8,437,800	8,437,800	-
2019	2,439,800	5,998,000		8,437,800	8,437,800	-
2020	-	5,998,000		5,998,000	5,998,000	-
2021	-	-		-	-	-
2022	-	-		-	-	-
2023	-	-		-	-	-
2024	-	-		-	-	-
2025	-	-		-	-	-
2026	-	-		-	-	-
2027	-	-		-	-	-
Deferred Balance						
2015	\$ 9,759,200			9,759,200	9,759,200	-
2016	7,319,400	23,992,000		31,311,400	31,311,400	-
2017	4,879,600	17,994,000		22,873,600	22,873,600	-
2018	2,439,800	11,996,000		14,435,800	14,435,800	-
2019	-	5,998,000		5,998,000	5,998,000	-
2020	-	-		-	-	-
2021	-	-		-	-	-
2022	-	-		-	-	-
2023	-	-		-	-	-
2024	-	-		-	-	-
2025	-	-		-	-	-
2026	-	-		-	-	-
2027	-	-		-	-	-

Section 3.5 - Supporting Exhibits

Development of Discount Rate - Projection of Fiduciary Net Position

This projection is used only for determining if the plan has a crossover point for developing the discount rate under GASB 67. For this projection, member contributions and benefit payments do not include amounts for future new members. Employer contributions include projected amounts for current members, plus amounts for new members to the extent the employer contribution exceeds the employer normal cost for the new members.

Since the projection does not produce a crossover point, the discount rate will be the assumed investment rate of return of 7.00 percent.

Fiscal Year	Projected Beginning Fiduciary Net Position	Projected Member Contributions	Projected Employer Contributions	Projected Benefit payments	Projected Investment Earnings*	Projected Ending Fiduciary Net Position
Ending 6/30/	(a)	(b)	(c)	(d)	(e)	(f)=sum (a) thru (e)
2016	472,374,000	3,139,000	13,352,000	(33,960,000)	1,715,000	456,620,000
2017	456,620,000	2,782,757	13,223,064	(34,770,404)	31,307,000	469,162,417
2018	469,162,417	2,629,130	13,079,318	(36,253,957)	32,122,000	480,738,908
2019	480,738,908	2,477,549	12,941,472	(37,895,024)	32,865,000	491,127,905
2020	491,127,905	2,334,513	12,810,006	(39,303,805)	33,533,000	500,501,619
2021	500,501,619	2,213,491	12,702,852	(40,552,740)	34,138,000	509,003,222
2022	509,003,222	2,084,907	12,584,007	(41,930,911)	34,676,000	516,417,224
2023	516,417,224	1,934,327	12,430,205	(43,260,437)	35,138,000	522,659,320
2024	522,659,320	1,787,797	12,274,028	(44,508,002)	35,521,000	527,734,143
2025	527,734,143	1,643,447	12,105,281	(45,555,657)	35,828,000	531,755,213
2026	531,755,213	1,513,077	11,954,428	(46,476,423)	36,068,000	534,814,295
2027	534,814,295	1,390,811	11,865,448	(47,401,710)	36,242,000	536,910,843
2028	536,910,843	1,261,188	11,717,186	(48,359,919)	36,345,000	537,874,298
2029	537,874,298	1,122,295	11,556,233	(49,259,716)	36,371,000	537,664,110
2030	537,664,110	1,009,701	11,409,382	(49,761,391)	36,330,000	536,651,802
2031	536,651,802	921,339	11,282,084	(50,014,861)	36,242,000	535,082,364
2032	535,082,364	833,788	11,192,758	(50,224,094)	36,119,000	533,003,815
2033	533,003,815	760,331	11,111,599	(50,204,980)	35,969,000	530,639,766
2034	530,639,766	676,839	10,997,923	(50,152,689)	35,798,000	527,959,839
2035	527,959,839	582,880	6,687,140	(50,122,977)	35,457,000	520,563,881
2036	520,563,881	492,976	1,366,277	(50,014,149)	34,754,000	507,162,985
2037	507,162,985	414,306	1,249,307	(49,645,088)	33,822,000	493,003,510
2038	493,003,510	346,520	1,119,259	(49,282,544)	32,837,000	478,023,745
2039	478,023,745	269,315	1,013,197	(48,742,088)	31,801,000	462,365,169
2040	462,365,169	208,376	885,837	(48,182,981)	30,717,000	445,993,400
2041	445,993,400	125,675	802,161	(47,463,910)	29,591,000	429,048,326
2042	429,048,326	82,141	760,227	(46,353,269)	28,441,000	411,978,426
2043	411,978,426	50,048	745,203	(45,082,190)	27,288,000	394,979,488
2044	394,979,488	31,438	746,215	(43,647,497)	26,148,000	378,257,644
2045	378,257,644	20,137	755,700	(42,152,734)	25,030,000	361,910,747
2046	361,910,747	12,597	773,736	(40,544,907)	23,942,000	346,094,173
2047	346,094,173	7,903	796,812	(38,856,845)	22,895,000	330,937,043

Section 3.5 – Supporting Exhibits (continued)

Development of Discount Rate - Projection of Fiduciary Net Position (continued)

Fiscal Year Ending 6/30/	Projected Beginning Fiduciary Net Position (a)	Projected Member Contributions (b)	Projected Employer Contributions (c)	Projected Benefit payments (d)	Projected Investment Earnings* (e)	Projected Ending Fiduciary Net Position (f)=sum (a) thru (e)
2048	330,937,043	5,085	821,683	(37,187,909)	21,893,000	316,468,901
2049	316,468,901	3,275	849,407	(35,538,864)	20,939,000	302,721,719
2050	302,721,719	2,163	878,926	(33,880,568)	20,036,000	289,758,239
2051	289,758,239	1,395	910,257	(32,115,069)	19,191,000	277,745,822
2052	277,745,822	917	943,727	(30,404,265)	18,411,000	266,697,202
2053	266,697,202	599	978,039	(28,659,658)	17,700,000	256,716,182
2054	256,716,182	365	1,013,398	(26,940,334)	17,063,000	247,852,611
2055	247,852,611	213	1,050,128	(25,254,440)	16,503,000	240,151,512
2056	240,151,512	107	1,088,372	(23,606,498)	16,022,000	233,655,493
2057	233,655,493	65	1,128,460	(22,001,351)	15,625,000	228,407,667
2058	228,407,667	32	1,169,926	(20,444,849)	15,314,000	224,446,776
2059	224,446,776	17	1,212,451	(18,941,682)	15,091,000	221,808,563
2060	221,808,563	8	1,256,377	(17,494,955)	14,958,000	220,527,993
2061	220,527,993	3	1,301,845	(16,107,873)	14,919,000	220,640,969
2062	220,640,969	2	1,349,366	(14,782,644)	14,975,000	222,182,692
2063	222,182,692	0	1,398,682	(13,521,060)	15,129,000	225,189,314
2064	225,189,314	0	1,449,481	(12,324,708)	15,383,000	229,697,088
2065	229,697,088	0	1,502,055	(11,193,005)	15,740,000	235,746,138
2066	235,746,138	0	1,556,416	(10,125,431)	16,202,000	243,379,122
2067	243,379,122	0	1,613,052	(9,123,676)	16,774,000	252,642,498
2068	252,642,498	0	1,671,873	(8,187,705)	17,457,000	263,583,666
2069	263,583,666	0	1,732,790	(7,314,983)	18,255,000	276,256,474
2070	276,256,474	0	1,795,750	(6,504,326)	19,173,000	290,720,898
2071	290,720,898	0	1,860,914	(5,755,023)	20,214,000	307,040,788
2072	307,040,788	0	1,928,462	(5,065,770)	21,383,000	325,286,480
2073	325,286,480	0	1,998,661	(4,433,332)	22,685,000	345,536,810
2074	345,536,810	0	2,071,392	(3,855,271)	24,125,000	367,877,931
2075	367,877,931	0	2,146,582	(3,331,067)	25,710,000	392,403,446
2076	392,403,446	0	2,224,389	(2,858,357)	27,446,000	419,215,478
2077	419,215,478	0	2,304,937	(2,432,915)	29,341,000	448,428,500
2078	448,428,500	0	2,388,538	(2,052,247)	31,402,000	480,166,791
2079	480,166,791	0	2,475,190	(1,715,558)	33,638,000	514,564,423

* The contributions and benefit payments occur halfway through the year and Investment Return is net of Administrative Expenses

**There is no crossover point in this analysis.

After 2062, the projected investment earnings will exceed the projected benefit payments.

3.5 – Supporting Exhibits (continued)

The total pension liability as of June 30, 2016 was determined by rolling forward the total pension liability as of June 30, 2015 to June 30, 2016 using the following actuarial methods and assumptions, applied to all periods included in the measurement. All other assumptions such as Mortality table, retirement rates, termination rates, and disability rates used to determine the total pension liability are set forth in Section 6.3.

Valuation Date:	6/30/2015
Actuarial Cost Method:	Entry Age
Amortization Method:	For pension expense, the differences between expected and actual liability experience and changes of assumptions are amortized over the the average of the expected remaining service lives of all members. The difference between projected and actual earnings is amortized over a closed period of five years.
Asset valuation method:	Market value
Actuarial assumptions:	
- Investment Rate of Return	7%
-Projected Salary Increases	3.50%
-Payroll Increases	0.3%-6.0%
-Inflation Assumption	3.50%
-Cost of Living Adjustments	Adjustments are funded by financial gains, and are not
Discount rate:	The discount rate used to measure the total pension liability was 7.00%. 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. Please see Section 3.5 for additional detail. The cross over analysis produces a single rate of 7.00 percent, which reflects the long-term expected rate of return on ERS investments. Therefore, the discount rate was applied to all periods of projected benefit payments to determine the total pension liability. In the event of benefit payments not covered by the Plan's fiduciary net position, a municipal bond rate of 2.71 percent would have been used to discount the benefit payments not covered by the Plan's fiduciary net position. The 2.71 percent rate equals the S&P Municipal Bond 20-Year High Grade Rate Index (yield to maturity) at June 30, 2016.

The average expected remaining years of service: The period is 3.12 years last year.

The following is a summary of the membership counts and the development of the average expected remaining years of service as of June 30, 2015.

Remaining service lives			
Group	Number	Service	Average
Retired members and survivors of deceased members currently receiving benefits	996	-	
Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits	145	-	
Active members	688	5,703	
Total	1,829	5,703	3.12

Section 4: Actuarial Funding Projections

Section 4.1 - Projection Assumptions and Methods

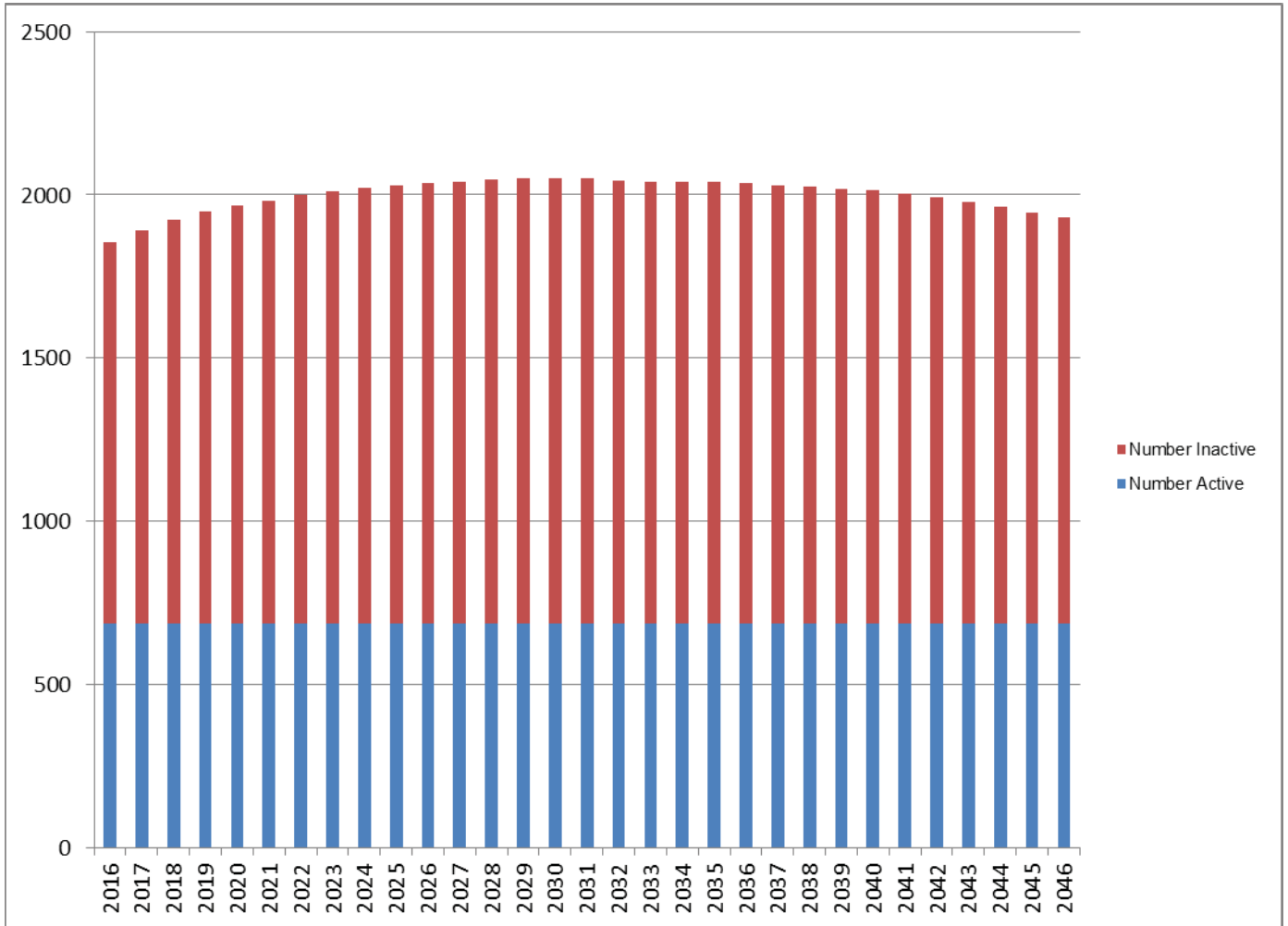
Key Assumptions

- 7.0% investment return on the Fair Value of Assets in all future years.
- 7.0% discount rate for determining liability.
- The Actuarial Value of Assets reflects the deferred gains and losses generated by the smoothing method. The current deferred amounts are recognized in the first four years of the projections.
- Actuarial assumptions and methods as described in Section 6. All future demographic experience is assumed to be exactly realized.
- The actuarially calculated contribution rate is contributed each year.
- Projections assume a 0% increase in the total active member population. All new future members are expected to enter the plan upon date of hire and contribution rates are determined as a percent of total payroll.
- The projections are based on the combined impact of the Minimum Required Policy and the Funding Plan.
- For the Sensitivity Analysis, all assumptions and methods are the same except investment returns on the Fair Value of Assets are assumed as follows:
 - Base Case: 7.00% for all future years
 - Optimistic: 8.00% for all future years
 - Pessimistic: 6.00% for all future years

These scenarios are intended to illustrate the impact if investment return assumptions are different than the 7.00% assumed investment return. They do not illustrate the effect of changing the assumed discount rate for determining liabilities.

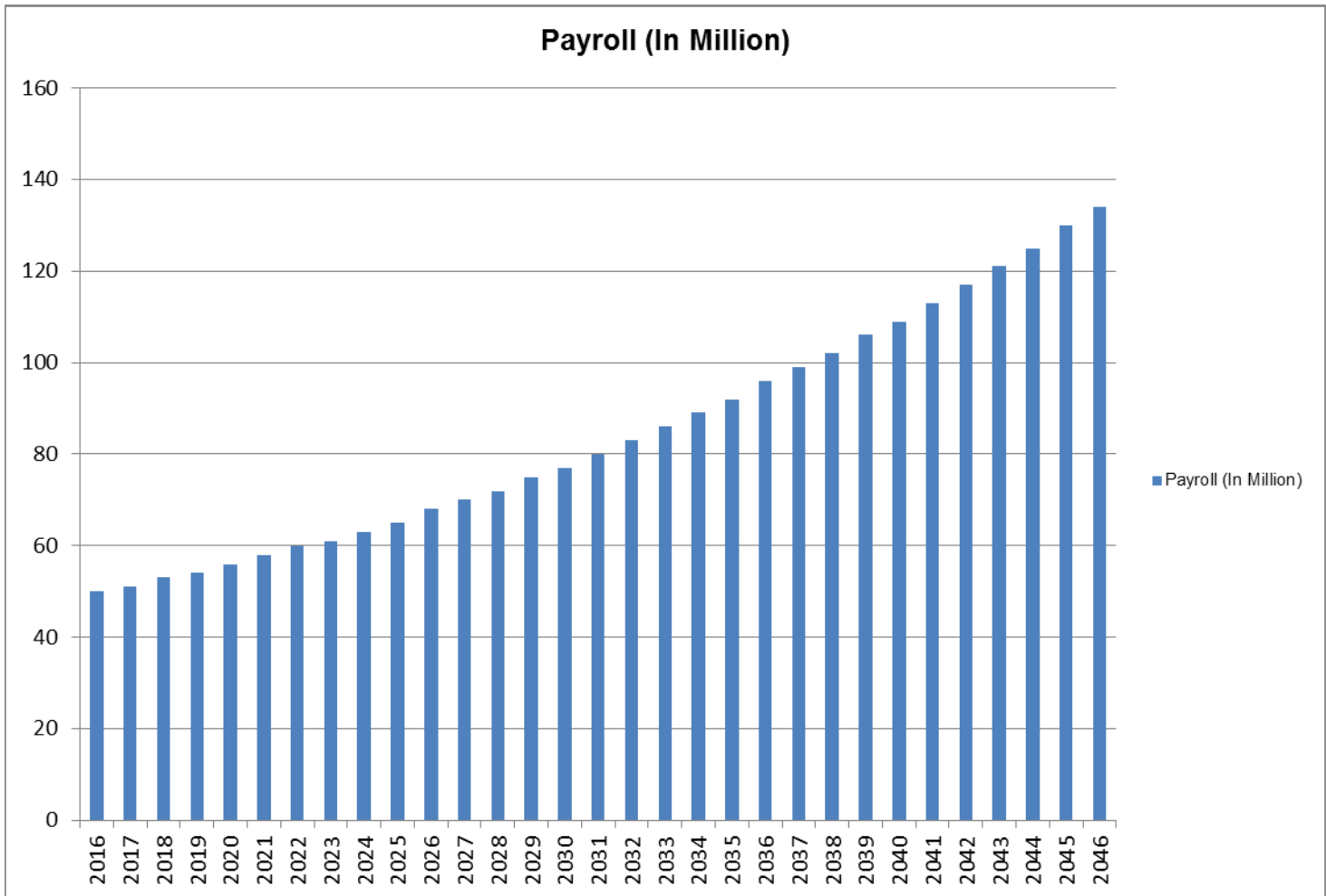
Section 4.2 - Membership Projection

Projected Member Count

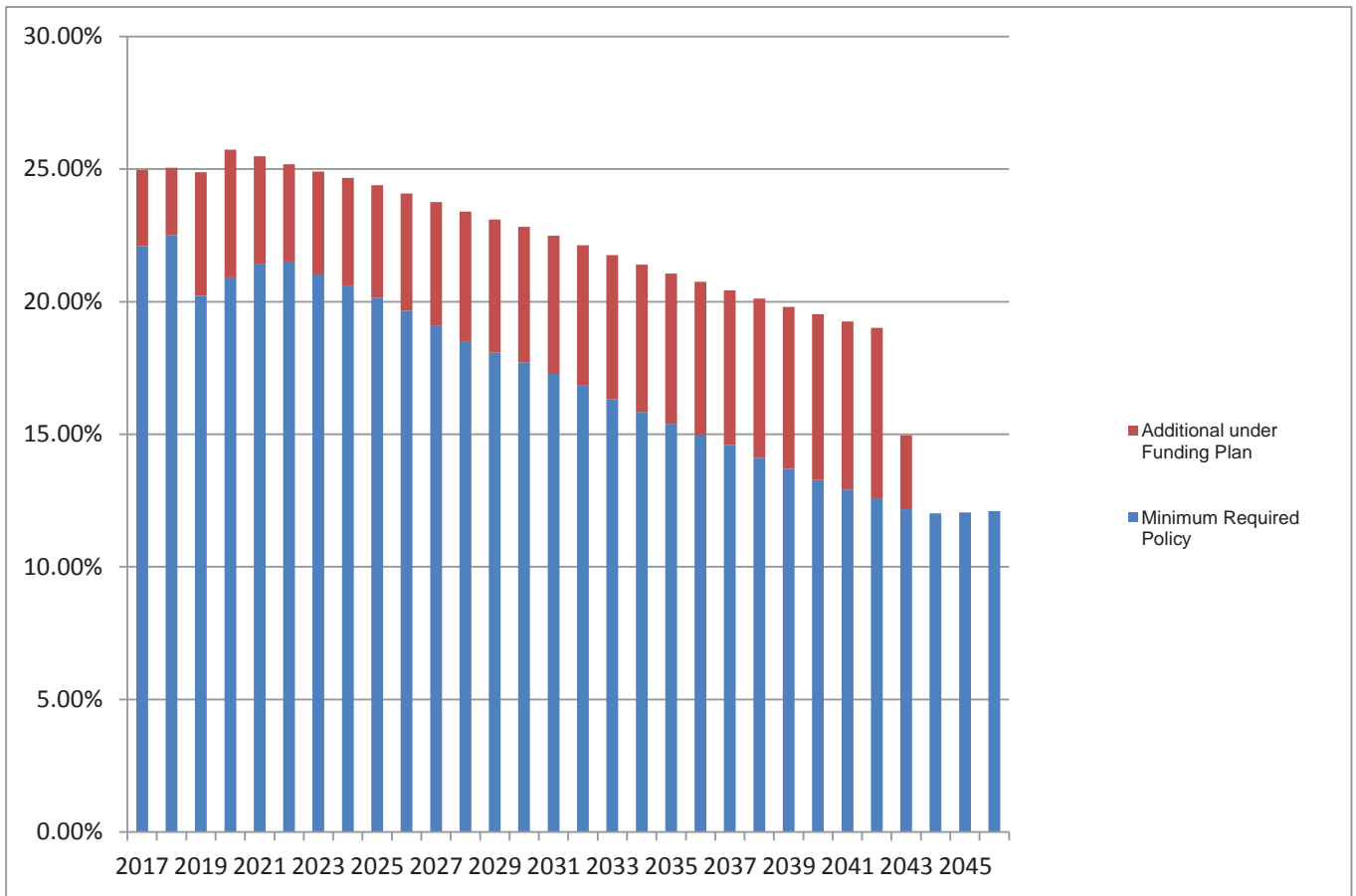


Section 4.2 (cont'd)
Membership Projection

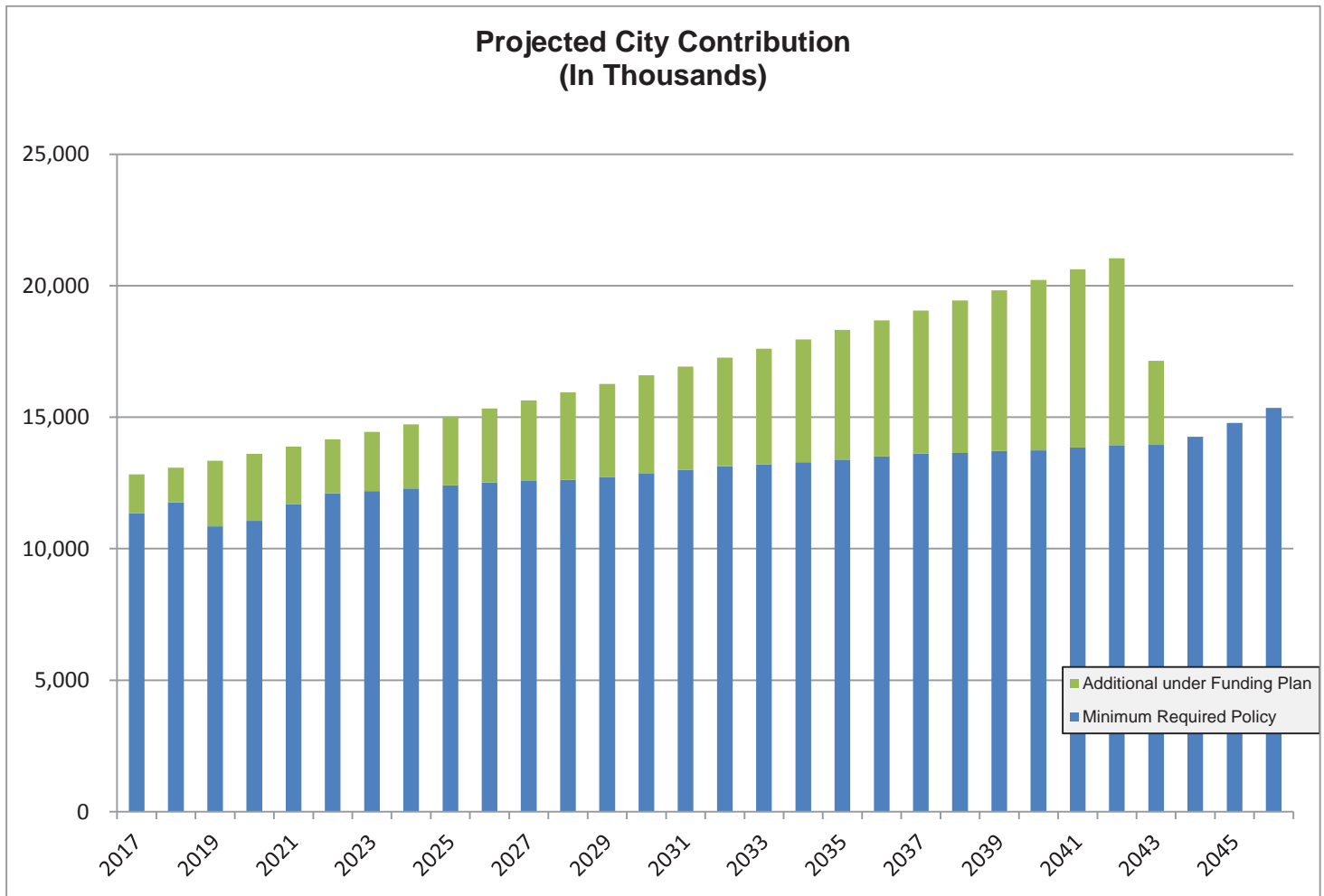
Projected Current and New Member Payroll



Section 4.3 - Projection of Employer Contribution Rates

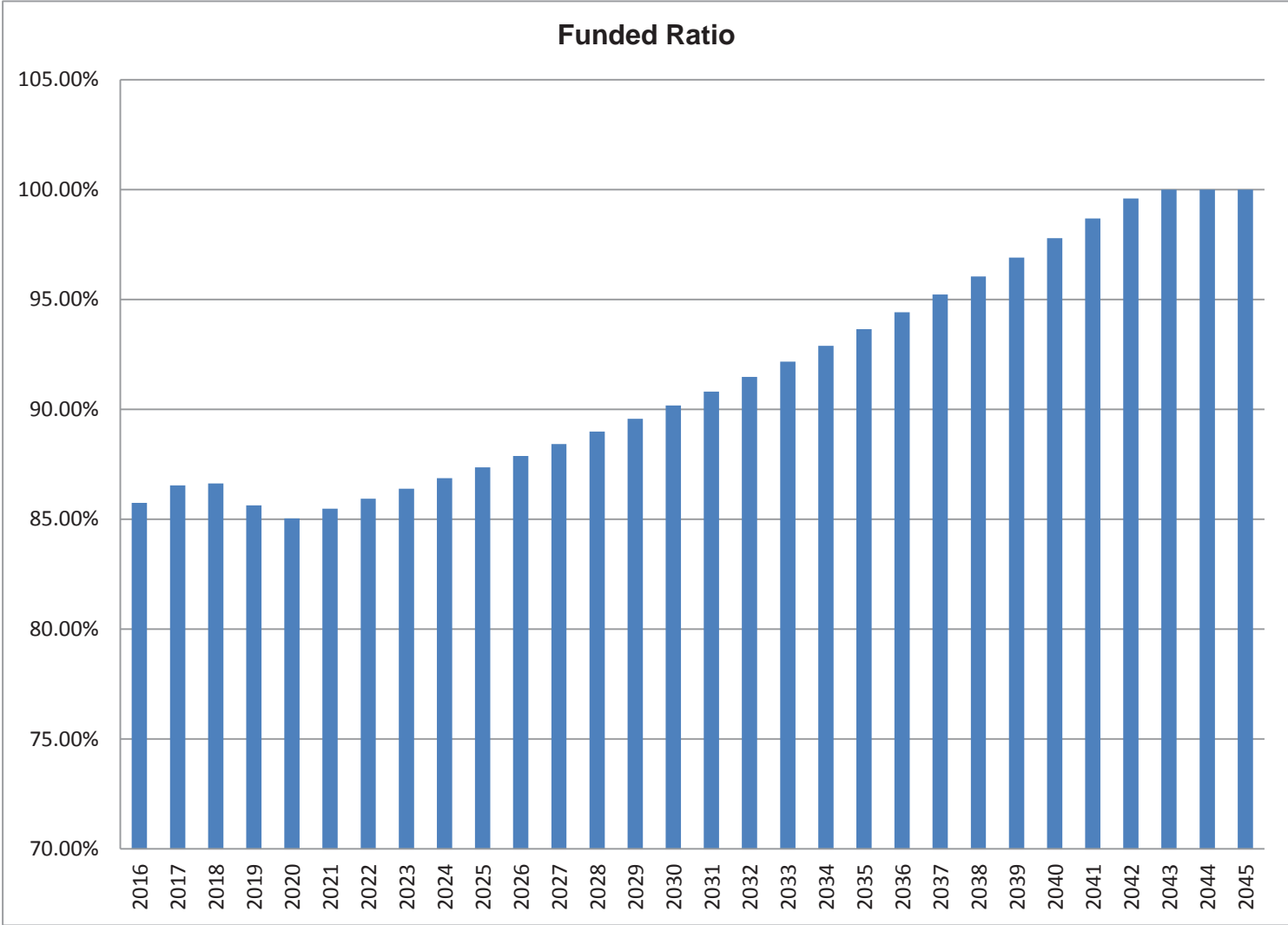


Section 4.4 - Projection of Employer Contribution Amounts



The 2017 projected contribution amount under funding plan, which is \$12,825,237 reported by the City.

Section 4.5 - Projection of Funded Status



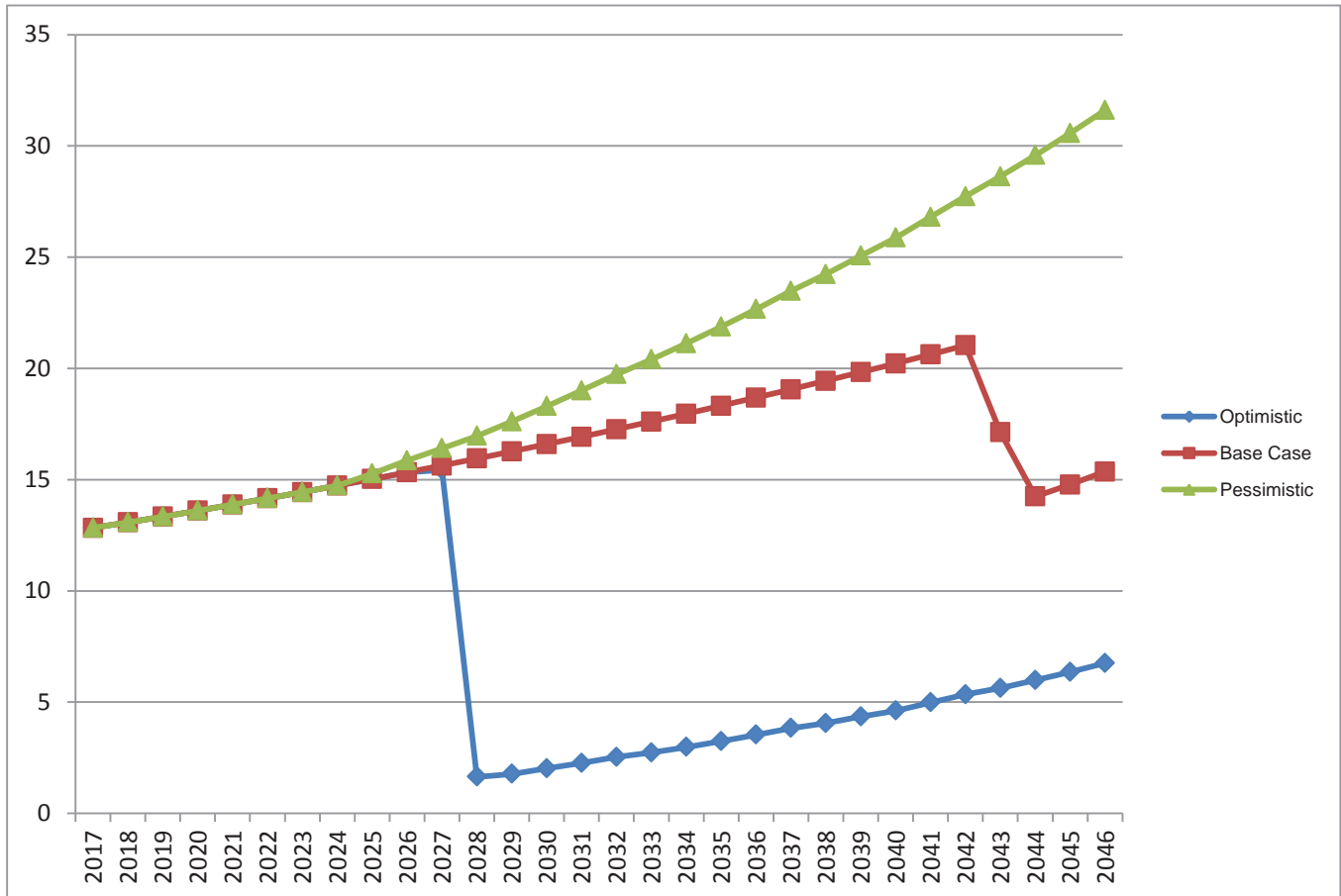
Section 4.6 - Table of Projected Actuarial Results (\$'s in 000's)

Year	Cashflows for the next year							Valuation Amount	
	Contributions			Employee Contributions	Total Contributions	Benefit Payments	Investment Earnings	Actuarial Value of Asset	Actuarial Accrued Liability
	Min Req'd	Additional	Funding Plan						
2016	11,349	1,476	12,825	3,003	15,829	34,704	33,582	470,029	548,201
2017	11,757	1,325	13,082	3,084	16,166	36,335	30,440	484,736	560,147
2018	10,846	2,498	13,343	3,173	16,517	37,966	24,886	495,007	571,459
2019	11,059	2,552	13,610	3,270	16,880	39,383	27,718	498,443	582,109
2020	11,680	2,202	13,883	3,374	17,257	40,684	34,436	503,658	592,297
2021	12,102	2,058	14,160	3,480	17,640	42,091	35,171	514,667	602,132
2022	12,192	2,252	14,443	3,584	18,028	43,453	35,887	525,387	611,422
2023	12,291	2,441	14,732	3,696	18,429	44,705	36,590	535,849	620,242
2024	12,411	2,616	15,027	3,820	18,847	45,775	37,289	546,162	628,705
2025	12,519	2,809	15,327	3,949	19,277	46,728	37,996	556,523	637,019
2026	12,580	3,054	15,634	4,091	19,725	47,754	38,714	567,067	645,300
2027	12,619	3,328	15,947	4,226	20,172	48,871	39,438	577,751	653,449
2028	12,734	3,532	16,266	4,363	20,628	50,019	40,166	588,491	661,351
2029	12,872	3,719	16,591	4,515	21,106	50,822	40,908	599,265	669,053
2030	12,999	3,924	16,923	4,682	21,605	51,388	41,690	610,457	676,955
2031	13,139	4,122	17,261	4,855	22,116	51,938	42,522	622,363	685,332
2032	13,203	4,403	17,606	5,038	22,644	52,432	43,412	635,063	694,270
2033	13,293	4,666	17,959	5,220	23,179	53,057	44,362	648,687	703,810
2034	13,392	4,926	18,318	5,404	23,722	53,800	45,369	663,171	713,907
2035	13,504	5,180	18,684	5,597	24,281	54,563	46,432	678,462	724,507
2036	13,618	5,440	19,058	5,798	24,856	55,145	47,563	694,613	735,664
2037	13,640	5,799	19,439	6,009	25,448	55,976	48,764	711,887	747,637
2038	13,714	6,113	19,828	6,215	26,042	56,896	50,029	730,122	760,155
2039	13,744	6,480	20,224	6,431	26,655	57,970	51,355	749,297	773,244
2040	13,849	6,780	20,629	6,641	27,269	58,997	52,743	769,337	786,768
2041	13,938	7,103	21,041	6,873	27,915	59,698	54,212	790,352	800,905
2042	13,944	3,200	17,145	7,118	24,262	60,635	55,622	812,780	816,066
2043	14,252	0	14,252	7,361	21,613	61,728	56,838	832,029	832,029
2044	14,784	0	14,784	7,613	22,397	62,788	57,999	848,752	848,752
2045	15,358	0	15,358	7,876	23,234	63,751	59,184	866,360	866,360

Note: Forecast based on the present employees with assumption about replacement employees and change in plan Provisions apply to new men

Section 4.7 - Sensitivity Analysis

Impact Various Investment Rates of Return Have on the Employer Contribution Amount



Section 5: Member Data

Section 5.1 - Summary of Members Included

As of June 30	Summary of Members Included							
	General		Police		Fire		Total	
	2016	2015	2016	2015	2016	2015	2016	2015
Active Members								
(1) Number	488	483	120	121	77	84	685	688
(2) Average Age	45.9	46.0	42.0	42.3	45.6	45.2	45.2	45.3
(3) Average Credited Service	10.6	10.8	14.9	15.4	17.0	16.6	12.1	12.3
(4) Average Annual Earnings	67,288	65,219	87,396	86,263	87,446	81,197	73,077	70,871
Retirees, Disableds and Beneficiaries								
(1) Number	661	647	202	196	154	153	1,017	996
(2) Average Age	68.6	68.5	66.0	65.5	70.6	70.4	68.4	68.2
(3) Average Monthly Pension Benefit	2,224	2,191	3,782	3,700	3,621	3,557	2,745	2,698
Vested Terminations (vested at time of termination, not refunded contributions or commenced benefit)								
(1) Number	139	132	9	10	3	3	151	145
(2) Average Age	51.4	50.7	48.7	50.0	48.9	47.9	51.2	50.6
(3) Average Monthly Pension Benefit	1,037	1,032	1,760	1,738	1,923	1,923	1,098	1,099
Total Number of Members	1,288	1,262	331	327	234	240	1,853	1,829

Section 5.2 - Age and Service Distribution of Active Members As of June 30, 2016

Total

Attained Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
20-24	Number	6	0	0	0	0	0	0	0	6
	Total Salary	276,166	0	0	0	0	0	0	0	276,166
	Average Salary	46,028	0	0	0	0	0	0	0	46,028
25-29	Number	47	2	0	0	0	0	0	0	49
	Total Salary	2,418,114	107,718	0	0	0	0	0	0	2,525,832
	Average Salary	51,449	53,859	0	0	0	0	0	0	51,548
30-34	Number	42	5	3	0	0	0	0	0	50
	Total Salary	2,532,891	292,262	191,984	0	0	0	0	0	3,017,137
	Average Salary	60,307	58,452	63,995	0	0	0	0	0	60,343
35-39	Number	38	14	16	11	0	0	0	0	79
	Total Salary	2,302,213	958,616	1,039,003	928,219	0	0	0	0	5,228,051
	Average Salary	60,585	68,473	64,938	84,384	0	0	0	0	66,178
40-44	Number	33	25	24	45	12	0	0	0	139
	Total Salary	2,020,985	1,729,772	1,874,519	3,637,252	1,054,516	0	0	0	10,317,044
	Average Salary	61,242	69,191	78,105	80,828	87,876	0	0	0	74,223
45-49	Number	21	17	21	33	44	13	0	0	149
	Total Salary	1,292,854	1,395,328	1,608,841	2,857,241	3,962,424	1,171,618	0	0	12,288,306
	Average Salary	61,564	82,078	76,611	86,583	90,055	90,124	0	0	82,472
50-54	Number	18	7	12	23	30	17	0	0	107
	Total Salary	952,806	500,252	923,492	1,831,090	2,651,721	1,488,725	0	0	8,348,086
	Average Salary	52,934	71,465	76,958	79,613	88,391	87,572	0	0	78,019
55-59	Number	15	7	18	16	15	6	0	0	77
	Total Salary	1,138,862	490,060	1,392,322	1,123,289	1,326,701	503,622	0	0	5,974,856
	Average Salary	75,924	70,009	77,351	70,206	88,447	83,937	0	0	77,596
60-64	Number	3	5	5	4	5	2	1	0	25
	Total Salary	222,160	286,448	290,516	304,271	362,162	205,830	61,979	0	1,733,366
	Average Salary	74,053	57,290	58,103	76,068	72,432	102,915	61,979	0	69,335
65-69	Number	1	1	0	0	1	0	0	1	4
	Total Salary	75,000	106,553	0	0	68,041	0	0	99,038	348,632
	Average Salary	75,000	106,553	0	0	68,041	0	0	99,038	87,158
TOTAL	Number	224	83	99	132	107	38	1	1	685
	Total Salary	13,232,051	5,867,008	7,320,676	10,681,360	9,425,564	3,369,795	61,979	99,038	50,057,471
	Average Salary	59,072	70,687	73,946	80,919	88,089	88,679	61,979	99,038	73,077

Section 5.2 (cont'd)

Age and Service Distribution of Active Members As of June 30, 2016

General

Attained Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
20-24	Number	4	0	0	0	0	0	0	0	4
	Total Salary	182,885	0	0	0	0	0	0	0	182,885
	Average Salary	45,721	0	0	0	0	0	0	0	45,721
25-29	Number	33	2	0	0	0	0	0	0	35
	Total Salary	1,563,216	107,718	0	0	0	0	0	0	1,670,934
	Average Salary	47,370	53,859	0	0	0	0	0	0	47,741
30-34	Number	27	5	2	0	0	0	0	0	34
	Total Salary	1,587,182	292,262	108,080	0	0	0	0	0	1,987,524
	Average Salary	58,785	58,452	54,040	0	0	0	0	0	58,457
35-39	Number	30	13	13	2	0	0	0	0	58
	Total Salary	1,772,396	872,474	770,716	124,405	0	0	0	0	3,539,991
	Average Salary	59,080	67,113	59,286	62,203	0	0	0	0	61,034
40-44	Number	32	22	14	15	2	0	0	0	85
	Total Salary	1,963,210	1,494,764	1,045,806	928,984	151,624	0	0	0	5,584,388
	Average Salary	61,350	67,944	74,700	61,932	75,812	0	0	0	65,699
45-49	Number	20	15	18	15	20	7	0	0	95
	Total Salary	1,235,014	1,229,865	1,345,578	1,120,582	1,540,797	499,069	0	0	6,970,905
	Average Salary	61,751	81,991	74,754	74,705	77,040	71,296	0	0	73,378
50-54	Number	18	7	12	17	15	11	0	0	80
	Total Salary	952,806	500,252	923,492	1,283,154	1,209,046	844,739	0	0	5,713,489
	Average Salary	52,934	71,465	76,958	75,480	80,603	76,794	0	0	71,419
55-59	Number	15	7	17	15	8	6	0	0	68
	Total Salary	1,138,862	490,060	1,310,204	1,036,940	624,795	503,622	0	0	5,104,483
	Average Salary	75,924	70,009	77,071	69,129	78,099	83,937	0	0	75,066
60-64	Number	3	5	5	4	5	2	1	0	25
	Total Salary	222,160	286,448	290,516	304,271	362,162	205,830	61,979	0	1,733,366
	Average Salary	74,053	57,290	58,103	76,068	72,432	102,915	61,979	0	69,335
65-69	Number	1	1	0	0	1	0	0	1	4
	Total Salary	75,000	106,553	0	0	68,041	0	0	99,038	348,632
	Average Salary	75,000	106,553	0	0	68,041	0	0	99,038	87,158
TOTAL	Number	183	77	81	68	51	26	1	1	488
	Total Salary	10,692,731	5,380,395	5,794,391	4,798,336	3,956,465	2,053,260	61,979	99,038	32,836,595
	Average Salary	58,430	69,875	71,536	70,564	77,578	78,972	61,979	99,038	67,288

Section 5.2 (cont'd)

Age and Service Distribution of Active Members As of June 30, 2016

Police

Attained Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
20-24	Number	2	0	0	0	0	0	0	0	2
	Total Salary	93,280	0	0	0	0	0	0	0	93,280
	Average Salary	46,640	0	0	0	0	0	0	0	46,640
25-29	Number	13	0	0	0	0	0	0	0	13
	Total Salary	804,030	0	0	0	0	0	0	0	804,030
	Average Salary	61,848	0	0	0	0	0	0	0	61,848
30-34	Number	11	0	1	0	0	0	0	0	12
	Total Salary	726,188	0	83,904	0	0	0	0	0	810,092
	Average Salary	66,017	0	83,904	0	0	0	0	0	67,508
35-39	Number	7	0	2	6	0	0	0	0	15
	Total Salary	469,939	0	186,886	546,169	0	0	0	0	1,202,994
	Average Salary	67,134	0	93,443	91,028	0	0	0	0	80,200
40-44	Number	0	0	2	18	5	0	0	0	25
	Total Salary	0	0	172,763	1,664,041	423,137	0	0	0	2,259,941
	Average Salary	0	0	86,382	92,447	84,627	0	0	0	90,398
45-49	Number	0	0	3	15	15	3	0	0	36
	Total Salary	0	0	263,264	1,471,930	1,537,022	362,009	0	0	3,634,225
	Average Salary	0	0	87,755	98,129	102,468	120,670	0	0	100,951
50-54	Number	0	0	0	4	8	3	0	0	15
	Total Salary	0	0	0	368,637	804,549	339,307	0	0	1,512,493
	Average Salary	0	0	0	92,159	100,569	113,102	0	0	100,833
55-59	Number	0	0	0	0	2	0	0	0	2
	Total Salary	0	0	0	0	170,462	0	0	0	170,462
	Average Salary	0	0	0	0	85,231	0	0	0	85,231
60-64	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
65-69	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
TOTAL	Number	33	0	8	43	30	6	0	0	120
	Total Salary	2,093,437	0	706,816	4,050,777	2,935,169	701,316	0	0	10,487,515
	Average Salary	63,437	0	88,352	94,204	97,839	116,886	0	0	87,396

Section 5.2 (con'td)

Age and Service Distribution of Active Members As of June 30, 2016

Fire

Attained Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
15-19	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
20-24	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
25-29	Number	1	0	0	0	0	0	0	0	1
	Total Salary	50,868	0	0	0	0	0	0	0	50,868
	Average Salary	50,868	0	0	0	0	0	0	0	50,868
30-34	Number	4	0	0	0	0	0	0	0	4
	Total Salary	219,522	0	0	0	0	0	0	0	219,522
	Average Salary	54,881	0	0	0	0	0	0	0	54,881
35-39	Number	1	1	1	3	0	0	0	0	6
	Total Salary	59,878	86,142	81,401	257,644	0	0	0	0	485,065
	Average Salary	59,878	86,142	81,401	85,881	0	0	0	0	80,844
40-44	Number	1	3	8	12	5	0	0	0	29
	Total Salary	57,775	235,008	655,950	1,044,227	479,754	0	0	0	2,472,714
	Average Salary	57,775	78,336	81,994	87,019	95,951	0	0	0	85,266
45-49	Number	1	2	0	3	9	3	0	0	18
	Total Salary	57,840	165,463	0	264,728	884,605	310,539	0	0	1,683,175
	Average Salary	57,840	82,732	0	88,243	98,289	103,513	0	0	93,510
50-54	Number	0	0	0	2	7	3	0	0	12
	Total Salary	0	0	0	179,299	638,126	304,680	0	0	1,122,105
	Average Salary	0	0	0	89,650	91,161	101,560	0	0	93,509
55-59	Number	0	0	1	1	5	0	0	0	7
	Total Salary	0	0	82,118	86,349	531,445	0	0	0	699,912
	Average Salary	0	0	82,118	86,349	106,289	0	0	0	99,987
60-64	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
65-69	Number	0	0	0	0	0	0	0	0	0
	Total Salary	0	0	0	0	0	0	0	0	0
	Average Salary	0	0	0	0	0	0	0	0	0
TOTAL	Number	8	6	10	21	26	6	0	0	77
	Total Salary	445,883	486,613	819,469	1,832,248	2,533,930	615,219	0	0	6,733,362
	Average Salary	55,735	81,102	81,947	87,250	97,459	102,537	0	0	87,446

Section 5.3 - Member Data Reconciliation

	Active Members	Inactive Members			Total	
		With Deferred Benefits	Retired Members	Disabled Members		Bene- ficiaries
As of 6/30/2015	688	145	826	28	142	1,829
Age Retirements	(35)	(1)	36			0
Disability Retirements	(1)		0	1	0	0
Deaths Without Beneficiary			(10)	0	(6)	(16)
Deaths With Beneficiary			(8)		8	0
Non-vested Terminations	(9)	0				(9)
Vested Terminations	(9)	9	0		0	0
Rehires	1	(1)				0
Cash-outs	(1)	(2)		0		(3)
Expiration of Benefits						0
Data Corrections	0		0			0
Transfers Out						0
Pick Ups		1				1
Net Change	(54)	6	18	1	2	(27)
New Entrants During the Year	51					51
As of 6/30/2016	685	151	844	29	144	1,853

Number Added To And Removed From Active Membership

Year Ended 30-Jun	Number Added During Year		Terminations During Year										Active Members End of Year
			Age & Service Retirement		Disability Retirement		Died-in Service		Withdrawals				
	A	E	A	E	A	E	A	E	Vested	Other*	Total		
GENERAL MEMBERS													
2012	51	52	21	16.2	0	1.4	0	0.6	21	10	31	21.6	461
2013	36	37	11	16.8	2	1.4	2	0.7	14	8	22	22.2	460
2014	38	22	14	19.5	0	1.4	0	0.8	3	5	8	17.8	476
2015	48	41	23	23.8	1	1.4	0	0.8	8	9	17	18.0	483
2016	46	41	23	26.7	1	1.4	0	0.8	9	8	17	18.0	488
5-Yr. Totals			92	103	4	7	2	3.7			95	97.6	
POLICE MEMBERS													
2012	9	15	13	2.9	0	0.3	0	0.1	1	1	2	1.6	113
2013	9	7	7	3.4	0	0.3	0	0.1	0	0	0	1.7	115
2014	3	3	2	4.3	0	0.3	0	0.1	0	1	1	1.6	115
2015	10	4	1	4.6	0	0.3	0	0.1	1	2	3	1.3	121
2016	7	8	7	7.2	0	0.4	0	0.1	0	1	1	1.8	120
5-Yr. Totals			30	22.4	0	1.6	0	0.5			7	8.0	
FIRE MEMBERS													
2012	0	7	5	2.4	0	0.1	1	0.1	0	1	1	0.8	76
2013	9	0	0	3.3	0	0.1	0	0.1	0	0	0	0.9	85
2014	0	1	1	3.3	0	0.1	0	0.1	0	0	0	0.9	84
2015	1	1	1	3.9	0	0.1	0	0.1	0	0	0	0.9	84
2016	-2 **	5	5	4.4	0	0.1	0	0.1	0	0	0	0.8	77
5-Yr. Totals			12	17.3	0	0.5	1	0.5			1	4.3	

A represents actual number.

E represents expected number.

*Balancing item.

** Transfer to General member

Section 5.4 - Schedule of Active Member Data

Valuation Date	Number				Annual Earnings	Annual Average Earnings	Percent Increase/ (Decrease) in Average Earnings
	General	Police	Fire	Total			
June 30, 2007	561	151	89	801	50,677,914	63,268	1.5%
June 30, 2008	564	149	92	805	51,287,330	63,711	0.7%
June 30, 2009	547	148	91	786	52,559,496	66,870	5.0%
June 30, 2010	516	124	88	728	48,688,316	66,880	0.0%
June 30, 2011	462	119	83	664	45,921,381	69,159	3.4%
June 30, 2012	461	113	76	650	44,003,987	67,698	-2.1%
June 30, 2013	460	115	85	660	45,063,112	68,277	0.9%
June 30, 2014	476	115	84	675	47,956,745	71,047	4.1%
June 30, 2015	483	121	84	688	48,759,189	70,871	-0.2%
June 30, 2016	488	120	77	685	50,057,471	73,077	3.1%

Section 5.5 - Schedule of Inactive Member Data

Valuation Date	Number				Annual Benefit Payments	Average Annual Benefit Payments
	General	Police	Fire	Total		
June 30, 2011	121	11	3	135	\$ 1,459,626	\$ 10,812
June 30, 2012	138	12	3	153	\$ 1,838,157	\$ 12,014
June 30, 2013	133	9	3	145	\$ 1,955,314	\$ 13,485
June 30, 2014	128	9	3	140	\$ 1,836,967	\$ 13,121
June 30, 2015	132	10	3	145	\$ 1,912,274	\$ 13,188
June 30, 2016	139	9	3	151	\$ 1,989,657	\$ 13,177

Section 5.6 - Schedule of Retired Members by Type of Benefit and Option Elected

Amount of Monthly Pension Benefit	Number of Recipients	Type of Pension Benefit			Option S		
		1	2	3	1	2	3
\$ 1 – \$ 300	7	7	0	0	5	0	1
301 – 600	41	28	9	4	24	0	7
601 – 900	68	53	12	3	39	0	19
901 – 1,200	105	63	34	8	67	0	22
1,201 – 1,500	60	43	13	4	31	3	17
1,501 – 1,800	60	44	14	2	25	0	18
1,801 – 2,100	57	40	16	1	29	0	18
2,101 – 2,400	77	63	12	2	35	5	19
2,401 – 2,700	90	79	8	3	33	5	28
2,701 – 3,000	58	52	5	1	22	1	18
3,001 – 3,300	71	66	5	0	28	0	21
3,301 – 3,600	56	51	5	0	22	1	18
3,601 – 3,900	47	45	2	0	12	1	22
3,901 – 4,200	40	35	4	1	13	1	16
Over \$4,200	180	175	5	0	48	8	66
Totals	1,017	844	144	29	433	25	310

Type of Pension Benefit

1. Regular retirement
2. Survivor payment
3. Disability

Option Selected

1. Whole Life Annuity
2. 50% Joint and Contingent Annuity
3. 100% Joint and Contingent Annuity
4. 50% Joint and Contingent and pop up Annuity
5. 100% Joint and Contingent and pop up Annuity
6. Straight Life equated
7. Cash refund

Section 5.7 - Schedule of Retired Members and Beneficiaries

As of June 30	2016	2015	2014	2013	2012
Service					
(1) Number, Fiscal Year Start	826	814	808	797	769
(2) Net Change	18	12	6	11	28
(3) Number, Fiscal Year End	844	826	814	808	797
(4) Average Current Age	67.4	67.2	66.7	66.2	66.1
(5) Average Monthly Pension Benefit	2,947	2,893	2,901	2,870	2,859
Surviving Spouse's Benefits					
(1) Number, Fiscal Year Start	142	138	134	136	135
(2) Net Change	2	4	4	-2	1
(3) Number, Fiscal Year End	144	142	138	134	136
(4) Average Current Age	74.7	74.6	73.9	73.7	73.7
(5) Average Monthly Pension Benefit	1,820	1,816	1,781	1,714	1,677
Disabilities					
(1) Number, Fiscal Year Start	28	28	29	29	29
(2) Net Change	1	0	-1	0	0
(3) Number, Fiscal Year End	29	28	28	29	29
(4) Average Current Age	65.1	64.8	65.1	63.8	66.5
(5) Average Monthly Pension Benefit	1,451	1,416	1,340	1,363	1,318
Total					
(1) Number, Fiscal Year Start	996	980	971	962	933
(2) Net Change	21	16	9	9	29
(3) Number, Fiscal Year End	1017	996	980	971	962
(4) Average Current Age	68.4	68.2	67.6	67.1	67.2
(5) Average Monthly Pension Benefit	2,745	2,698	2,699	2,665	2,645

Section 5.8 - Retirees Added to and Removed from Rolls

Year Ended	Added to Rolls		Removed from Rolls		Rolls – End of Year		Annual P Incre Allow
	No.	Annual Pension Allowances	No.	Annual Pension Allowances	No.	Annual Pension Allowances	
June 30, 2007	26	781,783	23	545,506	820	23,891,655	
June 30, 2008	21	587,394	21	434,680	820	24,044,369	
June 30, 2009	35	1,058,152	21	492,876	834	24,609,645	
June 30, 2010	64	2,799,052	19	234,046	879	27,174,651	
June 30, 2011	70	2,348,793	16	359,570	933	29,163,874	
June 30, 2012	52	1,738,639	23	363,419	962	30,539,094	
June 30, 2013	39	1,088,155	30	570,919	971	31,056,330	
June 30, 2014	34	1,077,287	25	399,142	980	31,734,475	
June 30, 2015	36	1,092,699	20	577,986	996	32,249,189	
June 30, 2016	45	1,816,942	24	571,037	1,017	33,495,094	

Section 5.9 - Schedule of Benefit Payments

Attained Ages	Regular retirement & Survivor payment		Disability		Total	
	Annual		Annual		Annual	
	No.	Allowances	No.	Allowances	No.	Allowances
<30	2	29,612	0	0	2	29,612
30-34	0	0	0	0	0	0
35-39	0	0	1	9,625	1	9,625
40-44	3	83,146	0	0	3	83,146
45-49	12	574,139	2	35,577	14	609,716
50-54	56	2,419,485	2	32,515	58	2,452,001
55-59	128	5,307,262	3	69,428	131	5,376,690
60-64	201	7,743,909	3	40,259	204	7,784,168
65-69	189	6,849,721	9	177,046	198	7,026,767
70-74	155	4,473,017	5	94,078	160	4,567,095
75	24	709,652	0	0	24	709,652
76	17	463,870	1	13,345	18	477,215
77	10	230,903	0	0	10	230,903
78	16	330,304	0	0	16	330,304
79	23	564,109	0	0	23	564,109
80	15	356,335	0	0	15	356,335
81	20	581,703	0	0	20	581,703
82	10	269,641	0	0	10	269,641
83	12	241,122	1	5,448	13	246,570
84	16	358,619	1	13,930	17	372,549
85	13	232,699	0	0	13	232,699
86	8	189,968	0	0	8	189,968
87	11	223,852	0	0	11	223,852
88	11	161,489	0	0	11	161,489
89	11	227,166	0	0	11	227,166
90	3	48,005	0	0	3	48,005
91	6	80,619	0	0	6	80,619
92	2	25,553	1	13,549	3	39,102
93	5	72,346	0	0	5	72,346
94	3	50,383	0	0	3	50,383
95	4	69,671	0	0	4	69,671
96	0	0	0	0	0	0
97	0	0	0	0	0	0
98	1	14,989	0	0	1	14,989
99	0	0	0	0	0	0
100	0	0	0	0	0	0
101	0	0	0	0	0	0
102	0	0	0	0	0	0
103	1	7,000	0	0	1	7,000
Total	988	32,990,293	29	504,801	1,017	33,495,094

Section 5.9 (cont'd)
Schedule of Benefit Payments

Inactive Members		
Attained Ages	No.	Estimated Annual Allowances
35	2	27,513
36	1	16,084
37	2	27,872
38	1	9,059
39	3	45,711
40	8	103,083
41	6	67,265
42	3	37,262
43	1	983
44	6	83,420
45	5	33,083
46	6	108,831
47	6	141,667
48	10	196,115
49	7	94,353
50	6	70,150
51	10	136,297
52	5	62,611
53	3	27,605
54	7	83,051
55	11	188,728
56	5	92,413
57	10	91,245
58	6	68,934
59	5	21,303
60	3	56,178
61	3	28,081
62	3	20,460
63	1	23,927
64	1	395
66	1	2,206
67	3	13,580
69	1	10,192
Total	151	1,989,657

Section 6: Basis of the Actuarial Valuation

Section 6.1 - Brief Summary of Benefit Provisions - (June 30, 2016)

REGULAR RETIREMENT (NO REDUCTION FACTOR FOR AGE):

Eligibility

General: Age 50 with 25 years of service, or age 60 with 5 years of service.

Police-Fire: 25 years of service, or age 55 with 5 years of service.

If new hires or rehires on or after the effective date in the table below, vesting year in above changed from 5 to 10 years.

Employee Group	Effective date
AAPOA	1/1/2012
AFSCME	8/29/2011
CSS/PSS	1/1/2012
DEPCHIEFS	7/2/2012
FIRE	7/1/2012
NON-Union	7/1/2011
POLICEPRO	7/2/2012
TEAMSTERS	7/2/2012

Mandatory Retirement Age - None.

Annual Amount –

General: Total service times 2.5% of final average compensation.

Police-Fire: Total service times 2.75% of final average compensation.

A member may elect to receive all or a portion of his accumulated contributions in a lump sum at retirement and receive a lesser benefit.

Type of Final Average Compensation –

Highest 3 consecutive years out of last 10. Some lump sums included.

If new hires or rehires on or after the effective date in the table above, final average compensation in above changed from 3 to 5 years.

EARLY RETIREMENT (AGE REDUCTION FACTOR USED):

Eligibility - General: Age 50 with 20 years of service.

Police-Fire: Age 50 with 20 years of service.

Annual Amount - Computed as regular retirement but the pension portion of the allowance is reduced by .33% for each month by which retirement precedes:

General: Earlier of a) age 60, or b) the age the member would have had 25 years of service.

Police-Fire: Earlier of a) age 55 or b) the age the member would have had 25 years of service.

The annuity portion of the allowance is unreduced.

Section 6.1 - Brief Summary of Benefit Provisions - (June 30, 2016)

DEFERRED RETIREMENT (VESTED BENEFIT):

Eligibility - 5 years of service. Payable at age 60.

If new hires or rehires on or after the effective date in the table on the prior page, vesting year in above changed from 5 to 10 years.

Annual Amount - Same as regular retirement but based upon service and final average compensation at termination. (A member may elect to receive all or a portion of his accumulated contributions at termination, if the member's age plus service total at least 50, and receive a lesser benefit at age 60.)

DUTY DISABILITY RETIREMENT:

Eligibility - No age or service requirement.

Annual Amount - General: Computed as regular retirement. Minimum to age 60 is 18% of final average compensation. Minimum after age 60 is sum of a) 12% of the portion of final average compensation not in excess of Social Security base, plus b) 18% of final average compensation in excess of Social Security base. Upon termination of worker's compensation, additional service credit is granted for period in receipt of worker's compensation and benefit is recomputed.

Police-Fire: Computed as regular retirement. Minimum benefit is 25% of final average compensation. Upon termination of worker's compensation, additional service credit is granted for period in receipt of worker's compensation and benefit is recomputed.

NON-DUTY DISABILITY RETIREMENT:

Eligibility - 5 or more years of service.

If new hires or rehires on or after the effective date in the table on the prior page, vesting year in above changed from 5 to 10 years.

Annual Amount - General: Computed as regular retirement. Minimum to age 60 is 18% of final average compensation. Minimum after age 60 is sum of a) 12% of the portion of final average compensation not in excess of Social Security base, plus b) 18% of final average compensation in excess of Social Security base.

Police-Fire: Computed as regular retirement. Minimum benefit is 25% of final average compensation.

DUTY DEATH BEFORE RETIREMENT:

Eligibility - No age and service requirement.

Annual Amount - Computed as regular retirement but actuarially reduced in accordance with a 100% joint and survivor election. If the member had less than 25 years of service at time of death, a minimum of 25 years of service will be used to compute the benefits. Worker's compensation payments made to the member's beneficiary will offset the benefits paid by the Retirement System. Upon termination of worker's compensation payments the amount paid to the beneficiary will be the greater of the annual worker's compensation payment and the computed 100% joint and survivor retirement benefit.

Section 6.1 - Brief Summary of Benefit Provisions - (June 30, 2016)

NON-DUTY DEATH BEFORE RETIREMENT:

Eligibility - 5 years of service.

If new hires or rehires on or after the effective date in the table in the regular retirement section, vesting year in above changed from 5 to 10 years.

Annual Amount - Computed as regular retirement but actuarially reduced in accordance with a 100% joint and survivor election. If there is no named beneficiary, a lump sum will be payable to the estate.

POST-RETIREMENT ADJUSTMENTS:

Adjustments are made every July 1 to retirants and beneficiaries on the rolls at least 12 months. Adjustments are funded by financial gains, and are not guaranteed.

MEMBER CONTRIBUTIONS: 6% OF ANNUAL COMPENSATION WITH EFFECTIVE DATE IN THE FOLLOWING TABLE:

Employee Group	Effective date
AAPOA	1/1/2012
AFSCME	10/23/2011
CSS/PSS	8/14/2011
DEPCHIEFS	8/1/2010
FIRE	2/1/2010
NON-Union	7/1/2010
POLICEPRO	8/1/2010
TEAMSTERS	8/1/2010
COAM	5/6/2012

Section 6.1 - Brief Summary of Benefit Provisions - (June 30, 2016)

Ledger Balances Of Reserve Funds

The ledger balances (market value) of the Retirement System, as of June 30, 2016, were reported to the actuary to total \$ 456,620,321 as follows:

Account	Ledger Balance	
	6/30/2016	6/30/2015
Reserve for Employee Contributions	62,493,224	62,658,851
Reserve for Employer Contributions	31,819,876	61,373,053
Reserve for Retired Benefit Payments	362,307,221	348,341,992
Reserve for Undistributed Investment Income	0	0
Totals	456,620,321	472,373,896

The Analysis of Changes in Reserves is shown in section 2.6 and section 2.7.

Section 6.2 - Description of Actuarial Methods and Valuation Procedures

A. Actuarial Cost Method

Liabilities and contributions shown in this report are computed using the **Entry Age Actuarial Cost Method** of funding.

Sometimes called a “funding method,” this is a particular technique used by actuaries for establishing the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily the annual contribution to the plan is comprised of (1) the normal cost and (2) an amortization payment on the unfunded actuarial accrued liability.

Under the Entry Age Actuarial Cost Method, the **Normal Cost** is computed as the level percentage of pay which, if paid from the earliest time each Member would have been eligible to join the Plan if it then existed (thus, entry age) until his retirement or termination, would accumulate with interest at the rate assumed in the valuation to a fund sufficient to pay all benefits under the Plan.

The Normal Cost for the Plan is determined by summing individual results for each active Member and determining an average normal cost rate by dividing the summed individual normal costs by the total payroll of Members before assumed retirement age.

The **Actuarial Accrued Liability** under this method at any point in time is the theoretical amount of the fund that would have accumulated had annual contributions equal to the Normal Cost been made in prior years (it does not represent the liability for benefits accrued to the valuation date.)

Lump sum redemption factors are assumed to be:

Members hired before July 1, 1982:	General - 10%
Members hired after June 30, 1982:	0%

The **Unfunded Actuarial Accrued Liability** is the excess of the Actuarial Accrued Liability over the Actuarial Value of Plan Assets actually on hand on the valuation date. The Unfunded Actuarial Accrued Liability is amortized as a level percent of payroll over a declining period. As of this valuation, the period is 25 years. This period of 25 years will continue in future valuation periods.

Under this method experience gains or losses, i.e. decreases or increases in accrued liabilities attributable to deviations in experience from the actuarial assumptions, adjust the Unfunded Actuarial Accrued Liability.

Section 6.2 - Description of Actuarial Methods and Valuation Procedures

B. Asset Valuation Method

The actuarial value of assets is based on a five-year smoothing method and is determined by spreading the effect of each year's investment return in excess of or below the expected return. The Fair Value of assets at the valuation date is reduced by the sum of the following:

- (i) 80% of the return to be spread during the first year preceding the valuation date,
- (ii) 60% of the return to be spread during the second year preceding the valuation date,
- (iii) 40% of the return to be spread during the third year preceding the valuation date, and
- (iv) 20% of the return to be spread during the fourth year preceding the valuation date.

The return to be spread is the difference between (1) the actual investment return on Fair Value and (2) the expected return on Fair Value.

C. Valuation Procedures

No actuarial liability is included for members who terminated non-vested prior to the valuation date, except those due a refund of contributions.

The compensation amounts used in the projection of benefits and liabilities were June 30, 2016, amount earned during the year provided by staff of the Retirement System.

No termination or retirement benefits were projected to be greater than the dollar limitation required by the Internal Revenue Code Section 415 for governmental plans.

Annual increases in salary were limited to the dollar amount defined under Internal Revenue Code Section 401(a)(17) for affected members.

Section 6.3 - Summary of Actuarial Assumptions and Changes in Assumptions

The current actuarial assumptions were adopted by the Board at its September 19, 2013 Board Meeting based on the results of Buck's quinquennial Experience Review for the period July 1, 2008 through June 30, 2013. The assumptions were first used with the June 30, 2013 actuarial valuation. The next Experience Review will cover the period of July 1, 2013 through June 30, 2018. The assumptions from that review will be first used in the June 30, 2018 valuation.

The rate of investment return, net of expenses, (regular interest) used in making the valuation was 7.0% per annum, compounded annually. This assumption is established by the Board of Trustees as provided in the Retirement System Ordinance, and was first used for the June 30, 1982 actuarial valuation. This rate consists of a real rate of return of 3.5% a year plus a long-term rate of wage inflation of 3.5% a year. This wage inflation assumption was first used in the June 30, 2004 actuarial valuation. Approximate internal rates of investment return, for the purposes of comparisons with assumed rates, have been as follows:

	Year Ended June 30					5 Year Arithmetic Average
	2016	2015	2014	2013	2012	
1) Nominal rate*	0.37%	4.22%	14.2%	12.3%	0.0%	
2) Valuation Asset Adjustment	<u>5.83</u>	<u>5.78</u>	<u>(3.03)</u>	<u>(8.28)</u>	<u>0.59</u>	
3) Total rate	6.2	10	11.2	4	0.6	6.40%
4) Increase in CPI	1.0	0.1	2.1	1.8	1.7	1.34%
5) Average salary increase	3.1	-0.2	4.1	0.9	-2.1	1.16%
6) Real Return						
-investment purposes (3)-(4)	5.2	9.9	9.1	2.2	-1.1	5.06%
-funding purposes (3)-(5)	3.1	10.2	7.1	3.1	2.7	5.24%
-assumption	3.5	3.5	3.5	3.5	3.5	3.50%

* The nominal rate of return was computed using the approximate formula $i = I$ divided by $1/2 (A + B - I)$, where I is realized investment income net of expenses, A is the beginning of year asset value, and B is the end of year asset value.

6.3 - Summary of Actuarial Assumptions and Changes in Assumptions (Continued)

The mortality table used to measure post-retirement mortality was the RP 2000 Combined Table projected to 2007 set forward 2 years for males and set back 3 years for females. Disabled mortality rates are the standard post-retirement mortality rates set forward 10 years. These tables first used for the June 30, 2008 actuarial valuation. Pre-retirement mortality rates are assumed to be 75% of post-retirement mortality rates. For Police and Fire 50% of deaths-in-service are assumed to be duty related.

The above Mortality table is applied using full generational projection using mortality improvement scale AA. Actuarial Standards of Practice now require that the likelihood and extent of future mortality improvements be considered for valuations performed on or after June 30, 2011. Future generational rates are projected from 2012 based on Scale AA.

Sample Ages	Single Life Retirement Values							
	Present Value of \$1 Monthly for Life				Future Life Expectancy (Years)			
	Men	Women	Disabled Men	Disabled Women	Men	Women	Disabled Men	Disabled Women
45	\$158.11	\$163.91	\$142.48	\$152.77	37.31	43.33	27.92	33.77
50	150.92	158.95	130.62	144.07	32.12	38.26	22.93	28.81
55	141.30	152.32	116.51	133.29	27.03	33.27	18.32	24.08
60	129.27	143.70	100.48	120.86	22.19	28.40	14.19	19.72
65	115.15	132.97	82.87	106.74	17.74	23.75	10.56	15.76
70	99.06	120.43	65.03	91.19	13.73	19.43	7.54	12.21
75	81.20	106.10	48.66	74.50	10.18	15.48	5.21	9.10
80	63.24	90.26	35.87	57.93	7.24	11.95	3.61	6.53

6.3 - Summary of Actuarial Assumptions and Changes in Assumptions (Continued)

Probabilities of retirement for members eligible to retire were:

Retirement Age	Age Based						Service Based		
	General		Police		Fire		Years of		
	Normal	Early	Normal	Early	Normal	Early	Service	Police	Fire
50	45 %	23 %		35 %		25 %	25	70 %	50 %
51	40	15		35		25	26	70	35
52	40	15		35		25	27	70	35
53	40	15		35		25	28	50	35
54	40	18		35		25	29	50	25
55	40	30	75 %		24 %		30	75	25
56	40	42	75		24		31	75	25
57	40	42	75		24		32	75	25
58	25	42	75		24		33	75	25
59	25	42	75		34		34	75	25
60	25		100		100		35	100	100
61	35								
62	35								
63	35								
64	35								
65	60								
66	40								
67	40								
68	40								
69	40								
70	100								

The assumed conditions for retirement were:

Group	Eligibility Conditions for Retirement
General	50 years of age with 20 or more years of service (reduced); or 50 years of age with 25 or more years of service; or, 60 years of age with 5 or more years of service.
Police-Fire	50 years of age with 20 or more years of service (reduced); or 25 or more years of service; or, 55 years of age with 5 or more years of service.

The above retirement rate assumptions were first used for the June 30, 2013 actuarial valuation.

If new hires or rehires on or after the effective date in the table in the regular retirement portion of section 6.1, vesting year in above changed from 5 to 10 years.

6.3 - Summary of Actuarial Assumptions and Changes in Assumptions (Continued)

Salary Adjustment Factors for Projections of Current Salaries to FAC					Probabilities of Becoming Disabled			
Sample	Percent Increase in Salary During Next Year				Sample	Percent Becoming Disabled Within Next Year		
	Merit & Longevity					Ages	General	Police
Ages	Base	General	Police	Fire				
20	3.50 %	4.0 %	6.0 %	5.8 %	20	0.06 %	0.08 %	0.02 %
25	3.50	3.6	5.1	5.0	25	0.06	0.08	0.02
30	3.50	2.8	3.2	3.4	30	0.06	0.08	0.02
35	3.50	2.1	1.9	1.9	35	0.06	0.08	0.02
40	3.50	1.8	1.2	1.2	40	0.10	0.14	0.03
45	3.50	1.5	0.9	0.9	45	0.24	0.32	0.08
50	3.50	1.0	0.7	0.7	50	0.42	0.56	0.14
55	3.50	0.7	0.5	0.5	55	0.65	0.86	0.22
60	3.50	0.5	0.3	0.4	60	0.86	1.14	0.29

Percent of disabilities assumed to be duty related: General: 25%, Police and Fire: 50%

Sample Rates of Separation from Active Employment Before Retirement, Death, or Disability					
% of Active Members Separating Within Next Year					
Ages	Years of Service	General		Police	Fire
		Male	Female		
ALL	0	6.00 %	16.00 %	6.00 %	4.50 %
	1	4.80	13.00	6.00	4.00
	2	4.00	11.00	4.00	3.60
	3	3.20	8.00	3.00	3.60
	4	2.40	6.00	2.50	3.60
20	5 and Over	3.20	6.50	2.40	1.40
25		3.20	6.50	2.40	1.40
30		3.20	6.50	2.40	1.10
35		2.50	5.00	1.75	0.90
40		2.50	5.00	0.74	1.00
45		2.50	5.00	0.48	0.90
50		2.50	5.00	0.48	0.50
55		2.50	5.00	0.48	0.50
60		2.50	5.00	0.48	0.50
65		2.50	5.00	0.48	0.50

The interest rate credited on refunds of accumulated contributions paid to terminating members was assumed to be 8.0% per annum, compounded quarterly.

The above withdrawal assumptions were first used for the June 30, 2013 actuarial valuation.

The above salary and disability assumptions were first used for the June 30, 2008 actuarial valuation.

6.3 - Summary of Actuarial Assumptions and Changes in Assumptions (Continued)

Summary of Assumptions Used Miscellaneous and Technical Assumptions

Marriage Assumption:	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits.
Pay Increase Timing:	Middle of (Fiscal) year.
Decrement Timing:	Decrements of all types are assumed to occur mid-year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Benefit Service:	Exact fractional service is used to determine the amount of benefit payable.
Decrement Relativity:	Decrement rates are used without adjustment for multiple decrement table effects.
Decrement Operation:	Disability decrements do not operate during the first 5 years of service. Disability and withdrawal do not operate during retirement eligibility.
Normal Form of Benefit:	The assumed normal form of benefit is straight life.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the year based upon the computed percent-of-payroll shown in this report, and the actual payroll payable at the time contributions are made. New entrant normal cost contributions are applied to the funding of new entrant benefits.

Glossary of Terms

Actuarial Accrued Liability	Total accumulated cost to fund pension benefits arising from service in all prior years.
Actuarial Cost Method	Technique used to assign or allocate, in a systematic and consistent manner, the expected cost of a pension plan for a group of plan members to the years of service that give rise to that cost.
Actuarial Present Value of Future Benefits	Amount which, together with future interest, is expected to be sufficient to pay all future benefits.
Actuarial Valuation	Study of probable amounts of future pension benefits and the necessary amount of contributions to fund those benefits.
Actuary	Person who performs mathematical calculations pertaining to pension and insurance benefits based on specific procedures and assumptions.
Annual Required Contribution	Disclosure measure of annual pension cost.
GASB 67	Governmental Accounting Standards Board Statement Number 67.
GASB 68	Governmental Accounting Standards Board Statement Number 68.
Normal Cost	That portion of the actuarial present value of benefits assigned to a particular year in respect to an individual participant or the plan as a whole.
Unfunded Actuarial Accrued Liability (UAAL)	The portion of the actuarial accrued liability not offset by plan assets.



City of Ann Arbor Employees' Retirement System

June 30, 2016 Actuarial Valuation
Board Presentation

November 17, 2016

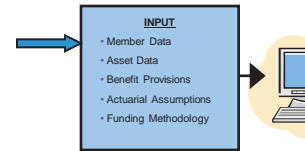
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Events During Fiscal Year Ending June 30, 2016 Which Impacted the June 30, 2016 Actuarial Valuation Results

- Results of this valuation deviated from last years valuation due to several factors:
 - Market value returns of 0.37% compared to 7% assumed
 - Total Payroll increased by 2.7% compared to 3.5% assumed
 - Individual salary increases were slightly lower than expected
 - Unfavorable demographic experience
- Overall, the above events resulted in the funded status being lower than anticipated and Minimum Required Policy employer contributions higher than anticipated based on the June 30, 2015 projections.

Member Data

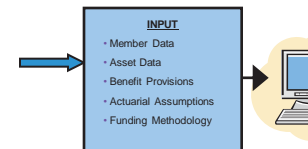


Summary of Member Data	Actuarial Valuation as of	
	June 30, 2016	June 30, 2015
Number of Members Included in the Valuation		
▪ Active Members	685	688
▪ Inactive Members	151	145
▪ Retirees and beneficiaries	1017	996
▪ Total	<u>1,853</u>	<u>1,829</u>
Annual Payroll		
▪ Average (actual)	73,077	70,871
Annual Benefit Payments		
▪ Inactive Members(Average)	13,177	13,188
▪ Retirees and beneficiaries (Average)	32,935	32,379

The member count stayed stable this period. As a result, the number of members did not impact the results of the valuation this year.

Refer to Section 5 of the actuarial valuation report for more information on member data submitted for the valuation.

Asset Data

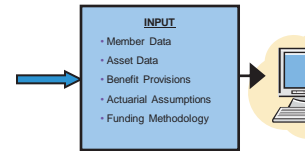


Transactions	June 30, 2016	June 30, 2015
Additions		
Contributions	16,491,678	16,104,8
Net Investment Income	2,439,314	20,076,5
Total	18,930,992	36,181,3
Deductions		
Benefits and Expenses	34,684,567	33,492,8
Net Increase	(15,753,575)	2,688,5
Net Assets Held in Trust for Pension Benefits		
Beginning of Year	472,373,896	469,685,3
End of Year	456,620,321	472,373,8
Estimated net investment return (Market)	0.37%	4.22%
Estimated net investment return (Actuarial)	6.22%	11.18%

Returns were lower than the 7% assumed rate of return, resulting in lower funding ratio than expected as of June 30, 2016 based on the projections using the June 30, 2015 actuarial valuation assumptions and data.

Refer to Section 2 of the actuarial valuation report for more information on the assets submitted for the valuation.

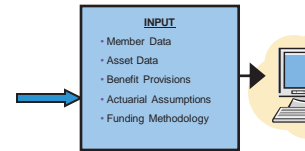
Benefit Provisions



- Benefit provisions are described in Chapter 18, Employees Retirement System of Title I of the Code of the City of Ann Arbor.
- There have been no changes in benefits or other plan provisions considered in the June 30, 2016 actuarial valuation since the last valuation performed as of June 30, 2015.

Refer to Section 6.1 of the actuarial valuation report for more information on the benefit summary submitted for the valuation.

Actuarial Assumptions

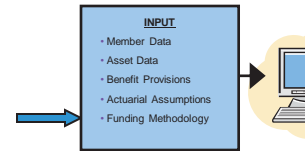


- Demographic (future events that relate to people)
 - Retirement
 - Termination
 - Disability
 - Death
- Economic (future events that relate to money)
 - Interest rate - 7.00% per year
 - Salary increase (individual, varies by age)
 - Real return – 3.50%
 - Payroll growth – 3.50%

The latest assumptions were adopted for use with the June 30, 2013 actuarial valuation. We understand that the next experience review will be completed in conjunction with the June 30, 2018 actuarial valuation.

Refer to Section 6.3 of the actuarial valuation report for more information on the actuarial assumptions used for the valuation.

Funding Methodology

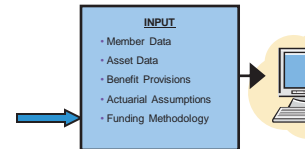


The Funding Methodology is the payment plan for the Retirement System composed of the 3 following components:

- Actuarial Cost Methods allocate costs to the actuarial accrued liability for past service and determine the normal cost for current service.
 - Board has adopted Entry Age Normal as its actuarial cost method
 - Develops normal costs that stays level as a % of payroll
- Asset Valuation Methods smooth or average the market value returns over time to alleviate contribution volatility that results from market returns.
 - Smoothing period for Retirement System is Five Years
 - No asset corridor is used
- Amortization Methods determine the payment schedule for unfunded actuarial accrued liability.
 - Payment level – the payment is determined as a level % of pay, as opposed to a level dollar payment that we associate with traditional home mortgage
 - Payment period – a 30 year period was adopted for use with the contribution for FYE 2019. The payment period will decrease by 1 year each year until a 25 year rolling period will be used.

Refer to the cover letter and Section 6.2 of the actuarial valuation report for more information on the funding methodology used for the valuation.

Funding Methodology



While the rolling amortization is not projected to result in the Retirement Plan achieving 100% funding, the City of Ann Arbor General Pension Policy is projected to achieve that goal. From the cover letter of our report:

“That being said, Section 1.3 of the City of Ann Arbor General Pension Policy allows for a Minimum Required policy as follows:

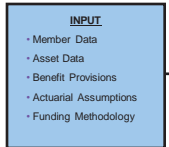
“The City of Ann Arbor will strive to achieve 100% funding of the City of Ann Arbor Employee Retirement Plan. To the extent that 100% funding has been achieved, the City will continue to contribute a minimum the Normal Cost as defined by an outside actuary. To the extent that 100% funding has not been achieved, the City shall budget each fiscal year the higher of the ADC or the existing funding in the current budget year adjusted annually for the change in general fund budget revenues. In some years this may result in an excess contribution to the Pension Fund, which will serve to pay down the unfunded actuarial accrued liability and reduce future city cost increases.

We refer to this as the “Funding Plan” contribution in this report. In this report, we project the Funding Plan contribution by assuming 2% revenue growth. Under the Funding Plan, a project a funded ratio of 100% is projected to be achieved by 2043. This date will vary from year to year due to valuation.

The continuation of the normal cost contribution and the potential for excess contribution are part of the funding policy. We will continue to monitor the policy with the Board.”

Refer to the cover letter and Section 6.2 of the actuarial valuation report for more information on the funding methodology used for the valuation.

Actuarial Value of Assets



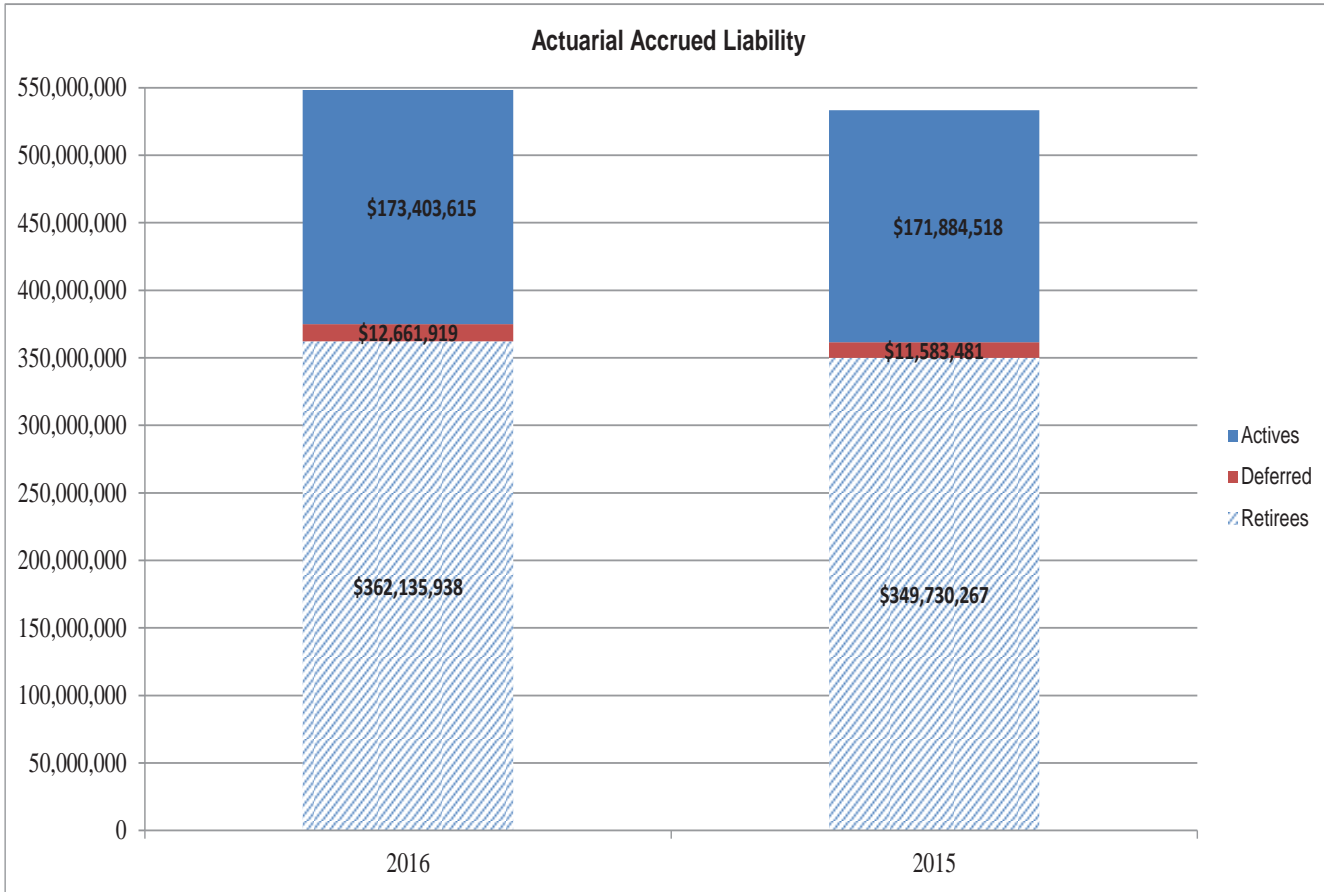
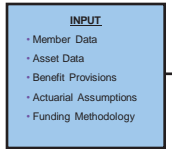
Total Fair Value of Assets as of June 30, 2016		456,620,321	
Return to be Spread			
Fiscal Year	Return to be Spread	Unrecognized Percent	Unrecognized Return
2016	(29,837,440)	80%	(23,869,952)
2015	(10,329,845)	60%	(6,197,907)
2014	31,731,939	40%	12,692,776
2013	19,833,081	20%	3,966,616
Total			(13,408,467)
Actuarial Value of Assets (Fair value less return recognized)		470,028,788	
Rate of Return for the Year on Actuarial Value of Assets		6.22%	
Rate of Return for the Year on Market Value of Assets		0.37%	

Historical	
YE 6/30	AV
2007	8
2008	7
2009	1
2010	1
2011	3
2012	0
2013	4
2014	11
2015	9
2016	6
Average	5
Range	10

While it is tedious to understand the derivation of the actuarial value of assets above, the impact of the AVA on controlling volatility cannot be understated, as seen on the right. While the average returns for actuarial and market are slightly more than 30 bp apart, the range for MVA is 4 times that of AVA – which would lead to contribution volatility if MVA were used.

Refer to Section 2.3 of the actuarial valuation report for more information on the actuarial value of assets.

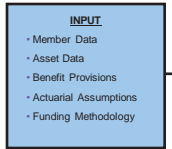
Actuarial Accrued Liability



The actuarial liability increased by \$533 million during the year. In an environment such as the current one, Arbor Employee Retirement liabilities are expected to grow from 2015 to the next annual membership approach.

Refer to Sections 1.1 and 1.2 of the actuarial valuation report for more information on the actuarial accrued liability.

Net Actuarial Gain or Loss



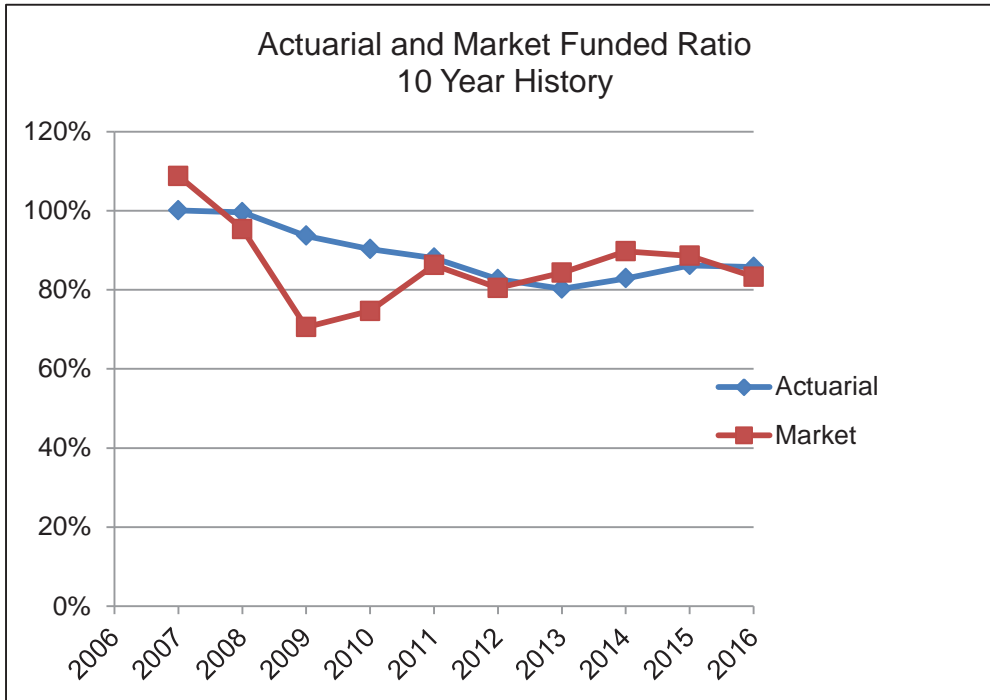
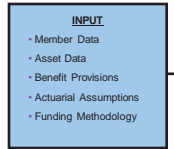
Development of Actuarial Loss for year ended June 30, 2016	
in thousands	
June 30, 2015 Actuarial Accrued Liability	533,198
Expected June 30, 2016 Actuarial Accrued Liability	544,863
Actual June 30, 2016 Actuarial Accrued Liability	548,201
Actuarial Liability Loss	3,338
June 30, 2015 Actuarial Value of Assets	459,480
Expected June 30, 2016 Actuarial Value of Assets	473,564
Actual June 30, 2016 Actuarial Value of Assets	470,029
Actuarial Asset Loss	3,535
Total Actuarial Loss	6,873

The actuarial loss of \$6,873,000 means that the unfunded actuarial accrued liability was \$6,873,000 higher than would have expected based on the assumptions.

All that being said, the loss was more than expected based on last year's projections, resulting in a "negative" actuarial gain as we will see on the next few pages.

Refer to Sections 1.3 and 1.4 of the actuarial valuation report for more information on the Actuarial Gain or Loss submitted for the valuation.

Funded Ratio

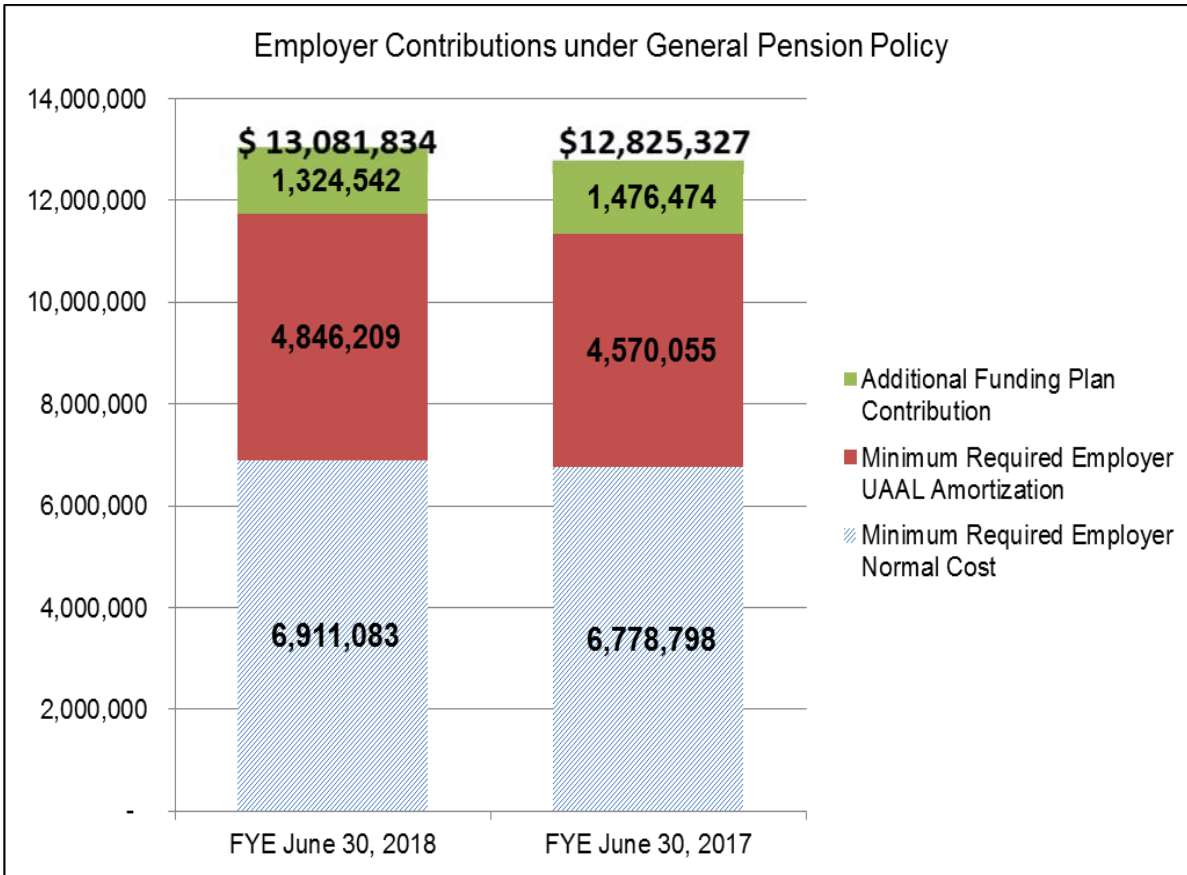
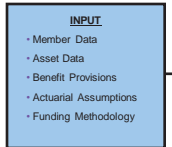


The funded ratio decreased last year from 86.17%. It was projected to increase to 87.53%. Net actuarial experience noted earlier in the funded ratio decrease instead of increasing liability projected in last year's

The funded ratio is shown both a market and actuarial basis. Actuarial basis is computing contribution to alleviate contribution value. Actuarial value is greater than Market for the first time in years, which means there is pressure on the funded ratio will exist for a few years.

Refer to Section 1.6 of the actuarial valuation report for more information on Funded Ratio.

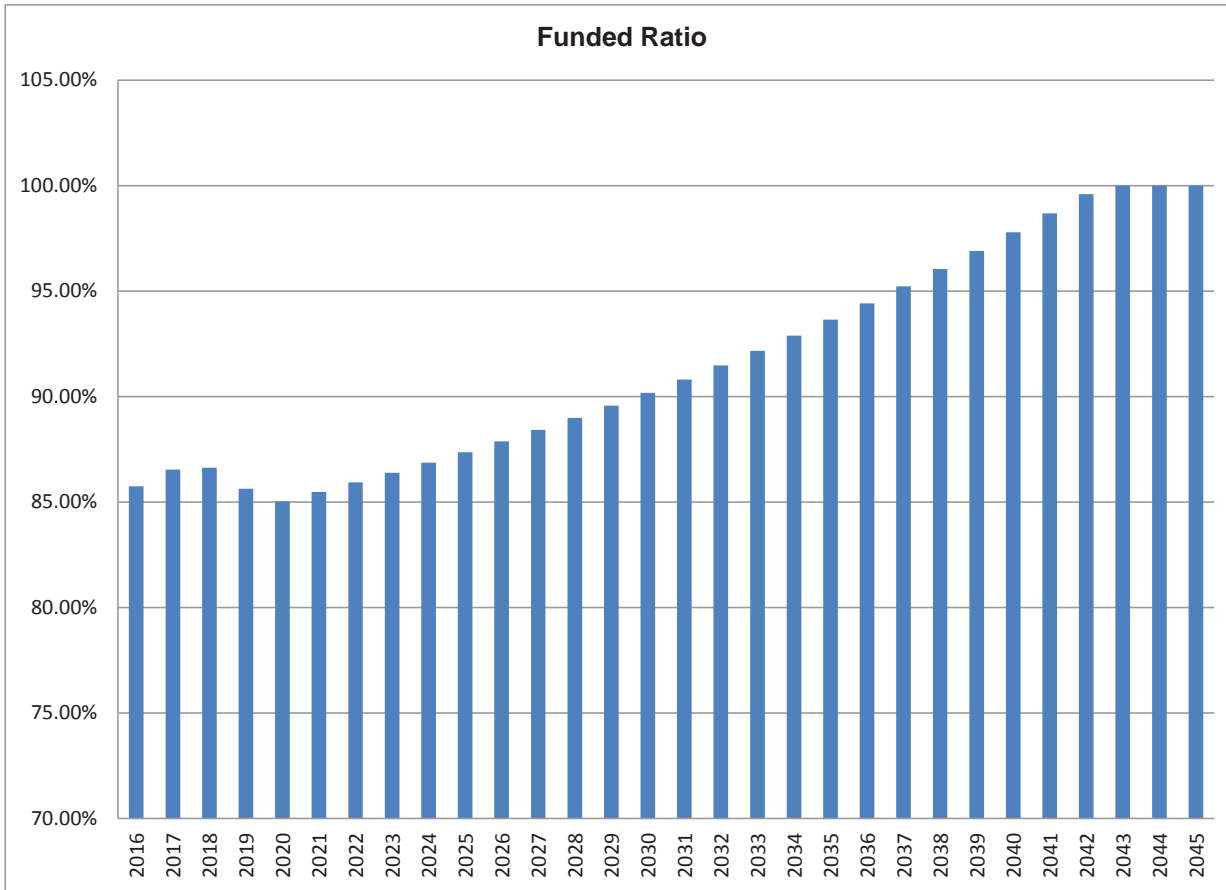
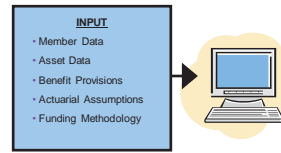
Employer Contribution



The employer normal contribution increased this year as a direct result of an increase in payroll and amortization payments. The unfunded actuarial liability increased as the unfunded actuarial liability increased from \$78 million to \$78 million. The actuarial employer contribution increased from last year as a result of worse than expected investment experience and unfavorable demographic experience.

Refer to Section 1.2 of the actuarial valuation report for more information on employer contribution.

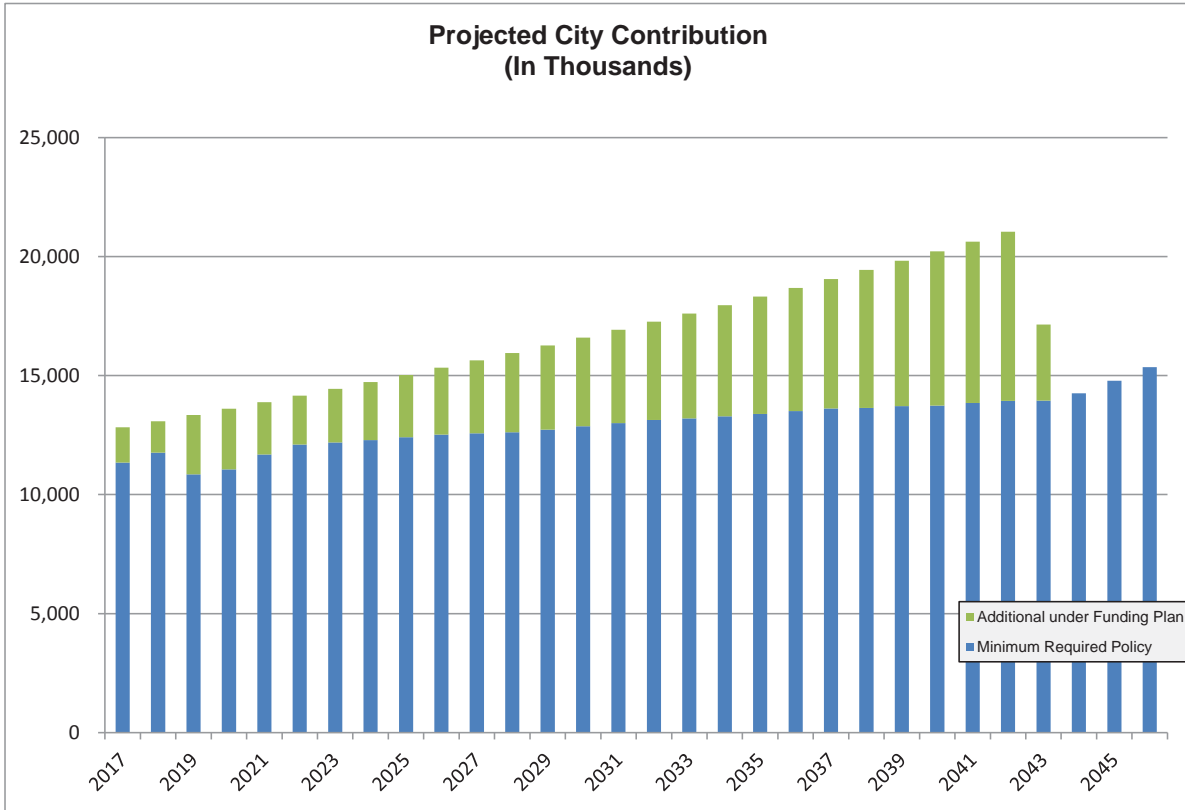
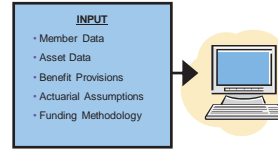
Projections – Funded Ratio



While the current ratio is important, the trend of your funded ratio is more important. The open amortization policy, which is the Minimum Required Policy, is the funded status attaining 100% funding, which is a recommended target for a sound policy. However, under the Ann Arbor General Policy, assuming a revenue growth policy, the funding 100% is projected to be achieved by 2045. This will vary from your valuation.

Refer to Section 4 of the actuarial valuation report for more information on the projections.

Projections – Contributions



Here we show the contributions projected to be needed to maintain the funded status under the current Arbor General Pension Policy. The City of Ann Arbor Pension Policy is based on the assumption of 2% growth each year. If contributions after 2041 funding is achieved as of the previous slide.

It is worthwhile to note that a 2016 return that falls below the assumed return results in 100% funding. Even in the year that 100% funding is achieved.

Refer to Section 4 of the actuarial valuation report for more information on the projections.

Key Takeaways

- Actual employer contributions of \$13,352,412 during year ended June 30, 2016 were \$1.1 million more than the amount developed in the June 30, 2014 actuarial valuation increasing the funded ratio by about 0.2%.
- During the year ended June 30, 2016, smaller investment returns and unfavorable demographic experience resulted in a higher employer contribution and lower funded ratio when compared to the projections based on the June 30, 2015 census and valuation assumptions.
- 2017/2018 actuarial employer contribution under Minimum Required Policy is \$11,700,000
 - 2016/2017 actuarial employer contribution was \$ 11,349,000
 - Based on projection from June 30, 2015 valuation, we expected \$10,250,000
- Funded Ratio of 85.74%;
 - June 30, 2015 funded ratio was 86.17 %
 - Based on projection from June 30, 2015 valuation, we expected a funded ratio of 87.53%
- The funded ratio is projected to be somewhat impacted by the recognition of the deferred asset losses in the next several years and then improve over the following years. In the City of Ann Arbor General Pension Policy is currently projected to result in the RPP system achieving 100% funding under a scenario of 2% revenue growth which would require a contribution increases of 2% in the future. Expect significant changes in the date 100% funding is achieved under the City of Ann Arbor general Pension Policy.

Accounting Information



Net Pension Liability

Net pension liability (asset)	June 30, 2016	June 30, 2015
Total pension liability	\$ 544,714,000	\$ 537,025,000
Plan fiduciary net position (estimate for 2015)	<u>456,620,000</u>	<u>472,374,000</u>
Net pension liability (asset)	\$ <u>88,094,000</u>	\$ <u>64,651,000</u>
Plan fiduciary net position as a percentage of the total pension liability	83.83%	87.96%
Covered employee payroll	\$ 50,057,000	\$ 48,759,000
Net pension liability (asset) as a percentage of covered employee payroll	175.99%	132.59%

“Total pension liability is the accrued liability estimate plus the amount of the net pension liability should be reported as a liability and “plan fiduciary net position” should be reported as an asset for “asset liability fund”.

Changes in Net Pension Liability

Schedule of Changes In Net Pension Liability	Fiscal Year Ending June 30, 2016	Fiscal Year Ending June 30, 2015
Total pension liability		
Service Cost	\$ 8,729,000	\$ 9,760,000
Interest	36,746,000	36,193,000
Changes of benefit terms	-	-
Differences between expected and actual experience	(3,826,000)	279,000
Changes of assumptions	-	-
Benefit payments, including refunds of member contributions	(33,960,000)	(32,668,000)
Net change in total pension liability	7,689,000	13,564,000
Total pension liability - beginning	\$ 537,025,000	\$ 523,461,000
Total pension liability - ending (a)	\$ 544,714,000	\$ 537,025,000
Plan fiduciary net position		
Contributions - employer	\$ 13,352,000	\$ 13,091,000
Contributions - member	3,139,000	3,013,000
Net investment income	2,439,000	20,078,000
Benefit payments, including refunds of member contributions	(33,960,000)	(32,668,000)
Administrative expense	(724,000)	(616,000)
Other*	-	(209,000)
Net change in plan fiduciary net position	(15,754,000)	2,689,000
Plan fiduciary net position - beginning	\$ 472,374,000	\$ 469,685,000
Plan fiduciary net position - ending (b)	\$ 456,620,000	\$ 472,374,000
Net pension liability (asset) - ending (a)-(b)	\$ 88,094,000	\$ 64,651,000

*Prior year adjustment to Reserves for Pension Liability

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Sensitivity of the Net Pension Liability

Sensitivity of the Net Pension Liability to Changes in the Discount Rate at June 30, 2016	1% Decrease	Current Discount Rate	1 % increase
Discount rate	6.00%	7.00%	
Total pension liability	\$ 604,298,000	\$ 544,714,000	\$ 494,300,000
Plan fiduciary net position	<u>456,620,000</u>	<u>456,620,000</u>	<u>456,620,000</u>
Net pension liability (asset)	\$ 147,678,000	\$ 88,094,000	\$ 37,680,000

In addition to developing the Net Pension Liability at the 67/68 discount rate, the NPL is required to be developed at a discount 1% higher and 1% lower for sensitivity purposes.

Pension Expense

Pension Expense	Measurement Year Ending June 30, 2016	Measurement Year Ending June 30, 2015
Service Cost	\$ 8,729,000	\$ 9,760,000
Interest Cost on Total Pension Liability	36,746,000	36,193,000
Projected Earnings On Plan Investments	(32,429,000)	(32,277,000)
Contributions - Member	(3,139,000)	(3,013,000)
Administrative Expense	724,000	616,000
Current period		
Plan changes	-	-
Changes of Assumptions	-	-
Differences between expected and actual liab. experience	(1,226,000)	89,000
Difference between projected and actual earnings	5,998,000	2,439,800
<u>Recognition of prior years'</u>		
Deferred outflows	2,528,800	
Deferred inflows	-	
Other changes in fiduciary net position	-	-
Total Pension Expense	17,931,800	13,807,800

While the Pension Expense is an analog to the employee contributions, they are different. The actual employee contribution is \$13,000,000 for the year ending June 30, 2016. The actual Pension Expense is \$13,352,000 for the year ending June 30, 2016. The reason for the increase in Pension Expense is due to the difference between the projected and actual

Hot Topics



Impact of updating the Mortality Table

Society of actuaries released new study for based table RP 2014 and projection scales October 2014 and update the improvement scales of MP-2015 and MP-2016 in 2015 and 2016 respectively.

- Shows significant improvement in base table RP 2014 and generational projections
- By changing the improvement scale to MP-2015 or MP-2016, pension liabilities decreased compared to projecting with Scale MP-2014.
- Although the new Scale MP-2016 will temper the projected rate of change overall, the latest SOA tables will still increase measured plan liabilities over those that reflected mortality studies (RP-2000 and before)
- Estimate of impact on Actuarial Accrued Liability by updating the tables is shown below

	Current table used in the valuation	Recent Released Tables		
Base table	RP2000	RP2014	RP2014	RP2014
Mortality improvement scales	Scale AA	MP-2014	MP-2015	MP-2016
Actuarial Accrued Liabilities	548,201,472	565,005,706	559,847,503	554,875,000
% Change from Current table		3.1%	2.1%	1.9%

Public Sector Retirement System Funding Policy Resources

- Conference of Consulting Actuaries Public Plans Community White Paper "Actuarial Fund and Practices for Public Pension Plans" <http://www.ccactuaries.org/publications/news/ccapaper.cfm>
- American Academy of Actuaries Issue Brief "Objectives and Principles for Funding Public Pension Plans" http://www.actuary.org/files/Public-Plans_IB-Funding-Policy_02-18-2014.pdf
- California Actuarial Advisory Panel White Paper "Model Actuarial Funding Policies and Practices for Public Pension and OPEB Plans" http://www.sco.ca.gov/Files-ARD/BudLeg/CAAP_Funding_Policies_w_letter.pdf
- Report from the Pension Funding Task Force 2013 (convened by the Center for State and Government Excellence) "Pension Funding: A Guide for Elected Officials" http://www.nctr.org/pdf/PensionFundingGuideBrief_Final.pdf
- GFOA Best Practice "Funding Defined Benefit Pensions" <http://www.gfoa.org/funding-defined-benefit-pensions> (no PDF)
- GFOA Best Practice "Core Elements of a Pension Funding Policy" <http://www.gfoa.org/core-elements-of-a-pension-funding-policy> (no PDF)
- Society of Actuaries Blue Ribbon Panel on Public Pension Plan Funding "Report of the Blue Ribbon Panel on Public Pension Plan Funding" (report, summary, video and guide) <https://www.soa.org/blueribbonpanel/>

Funding Policy Discussion

The Valuation Process



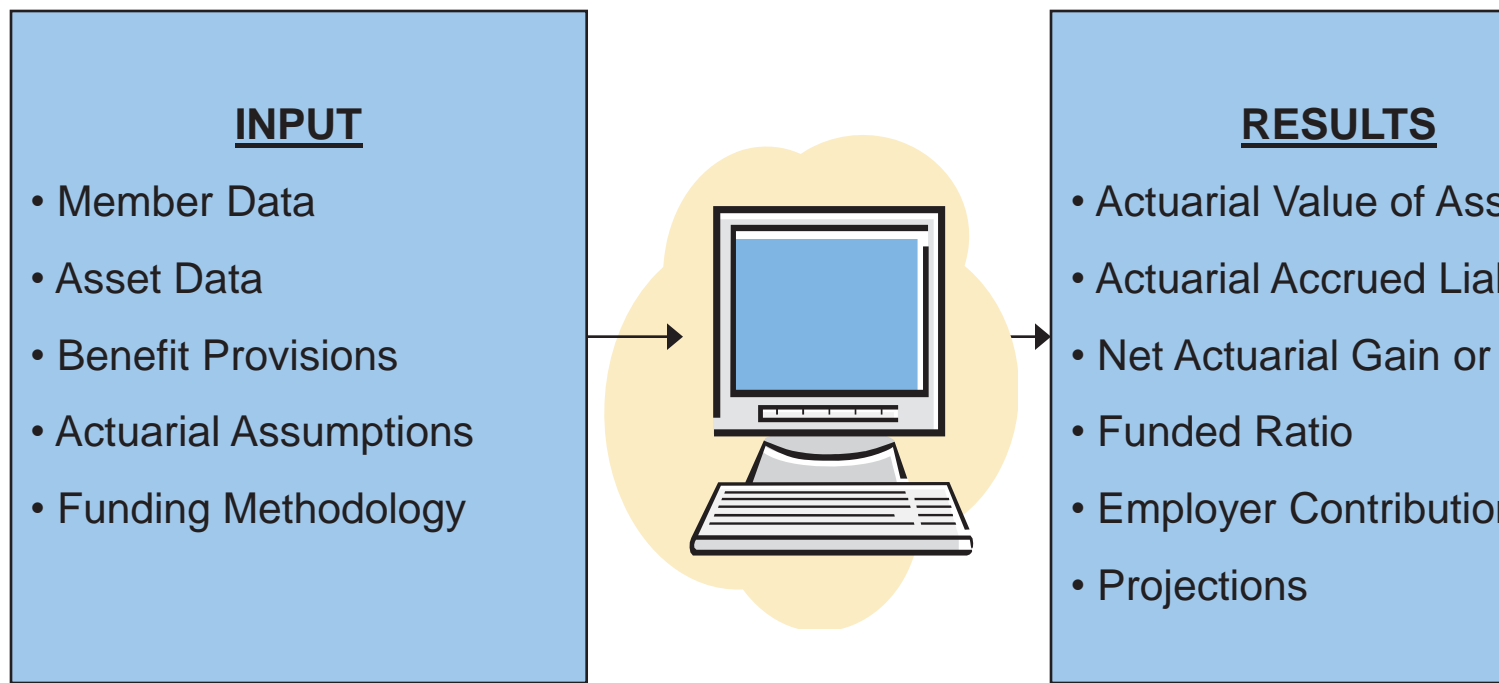
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The Valuation Process

- Each year, the actuary determines the amount of contributions made to the Retirement System during each member's career, when combined with investment return, will be sufficient to pay retiree benefits.
- This contribution is determined through the annual actuarial valuation which is summarized in the annual actuarial valuation report.
- In addition, the annual actuarial valuation is performed to:
 - Determine progress on funding the Retirement Systems
 - Explore why the results of the current valuation differ from the results of the valuation of the previous year
 - Satisfy regulatory and accounting requirements

The Valuation Process



Certification

The results were prepared under the direction of Larry Langer who meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. These results have been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about them.

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 all or all of its liabilities.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law.

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

Questions?

THANK YOU



Ready For Real Business