Segal Consulting

Municipal Employees' Annuity and Benefit Fund of Chicago

Actuarial Valuation and Review as of December 31, 2015

Segal Consulting
101 North Wacker Drive, Suite 500 Chicago, IL 60606
T 312.984.8500 www.segalco.com

May 13, 2016

The Retirement Board of the
Municipal Employees' Annuity and Benefit Fund of Chicago
321 N Clark St, Ste 700
Chicago IL 60654-4767

Dear Board Members:

We are pleased to submit this annual Actuarial Valuation and Review as of December 31, 2015. It summarizes the actuarial data used in the valuation, establishes the net pension liability under Governmental Accounting Standards Board (GASB) Statement No. 67 as of December 31, 2015, the pension expense for the fiscal year ending December 31, 2015, under GASB Statement No. 68, the actuarially determined contribution for the year ending December 31, 2016, the net OPEB obligation as of December 31, 2015, under GASB Statements No. 43 and 45, and analyzes the preceding year's experience.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Municipal Employees' Annuity and Benefit Fund of Chicago (MEABF). The census information and financial information on which our calculations were based was prepared by the Fund staff. That assistance is gratefully acknowledged. We have not subjected the census data to any auditing procedures, but have examined the data for reasonableness and consistency with the prior year's data.

Since the effective date of the last actuarial valuation, Public Act 98-0641, which changed certain benefit and eligibility provisions, increased member and employer contributions, and resulted in a net decrease to the actuarial liabilities of the Fund, was ruled unconstitutional. As a result, the liabilities in this valuation are calculated as if Public Act 98-0641 never occurred.

The actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by the Fund's actuary. The assumptions and methods used for the December 31, 2015, actuarial valuation were based on an experience analysis covering the five-year period ending December 31, 2009, and were adopted by the Board, effective for the December 31, 2010 valuation. These actuarial assumptions and methods comply with the parameters set by the Actuarial Standards of Practice and the parameters for disclosure of GASB 43, 45, 67, and 68. Further, in our opinion, the assumptions as approved by the Board appear to be reasonably related to the experience of the Fund. The investment return assumption is based on the Fund being invested according to the target asset allocation in the Investment Policy Statement. To the extent that the liquidation of assets to pay benefit payments and expenses requires a shift in investment allocation to more liquid, lower return asset classes, a lower discount rate may be required in the future.

MEABF is funded by employer and member contributions in accordance with the funding policy specified under the Illinois Pension Code (40 ILCS 5/8). For 2016, employer contributions are equal to employee contributions from two years prior times 1.25, the contribution multiple. The funding method mandated by the Illinois Pension Code is insufficient to avoid insolvency, and without a change, the Fund is projected to become insolvent within the next 10 years (during 2025). At a minimum, the funding method should provide the Fund with sufficient assets to be able to pay all future benefit payments. However, we strongly recommend an actuarial funding method that targets 100% funding where payments at least cover interest on the unfunded actuarial liability and a portion of the principal balance. The actuarially determined contribution multiple (the basis of which is found in the "Development of Employer Costs") for 2016 is 7.51.

This report includes the following schedules for the actuarial section of the Comprehensive Annual Financial Report:

- Active Member Valuation Data
- Retirees and Beneficiaries Added to and Removed from Rolls
- Solvency Test
- Analysis of Financial Experience

This report includes the following schedules for the financial section of the Comprehensive Annual Financial Report:

- Schedule of Funding Progress
- Schedule of Employer Contributions

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law.

The actuarial calculations were directed under our supervision. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By: Kim Nicholl Matthew A. Strom Barbara Zaveduk

Kim M. Nicholl, FSA, MAAA, EA, FCA	*Matthew A. Strom, FSA, MAAA, EA*	*Barbara Zaveduk, MAAA, EA*
Senior Vice President and Actuary	*Vice President and Actuary*	*Vice President and Actuary*

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REPORTING INFORMATION

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Purpose

This report has been prepared by Segal Consulting to present a valuation of the Municipal Employees' Annuity and Benefit Fund of Chicago (MEABF or Fund or Plan) as of December 31, 2015. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Fund, as administered by the Retirement Board;
- The characteristics of covered active members, inactive vested members, and retirees and beneficiaries as of December 31, 2015, provided by the MEABF staff;
- The assets of the Plan as of December 31, 2015, provided by the MEABF staff;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

1. Public Act 98-0641 was ruled unconstitutional by the Illinois Supreme Court. As a result, liabilities for this valuation are calculated as if the changes never occurred.
2. **As a result of the benefit and funding changes in Public Act 98-0641 being revoked, the Fund is in imminent danger of insolvency. Without increased funding, the Fund is projected to become insolvent within the next 10 years (during 2025).**
3. The Governmental Accounting Standards Board (GASB) approved two new Statements affecting the reporting of pension liabilities for accounting purposes. Statement 67 replaces Statement 25 and is for plan reporting. Statement 68 replaces Statement 27 and is for employer reporting. Statement 67 was effective with the fiscal year ending December 31, 2014, for Plan reporting. Statement 68 is effective with the fiscal year ending December 31, 2015, for employer reporting. The information contained in this valuation is intended to be used (along with other information) in order to comply with both Statements 67 and 68. Statements 43 and 45, for OPEB reporting, remain unchanged.

4. When measuring pension liability for GASB purposes, the same actuarial cost method (Entry Age method) as is used for funding purposes. However, as of December 31, 2015, the GASB blended discount rate calculation results in a lower discount rate (3.73%) than is used for funding purposes (7.50%). This means that the total pension liability (TPL) measure for financial reporting shown in this report will differ from the actuarial accrued liability (AAL) measure for funding. We note that the same is true for the normal cost component of the annual plan cost for funding and financial reporting.
5. The net pension liability (NPL) is equal to the difference between the TPL and the Plan's fiduciary net position. The Plan's fiduciary net position is equal to the market value of assets. The NPL increased from $7,127,607,766 as of December 31, 2014, to $18,617,442,068 as of December 31, 2015.
6. The funded ratio based on the actuarial value of assets over the actuarial accrued liability as of December 31, 2015, is 32.9%, compared to 40.9% as of December 31, 2014. Prior to reflecting the benefit provision changes in Public Act 98-0641, the funded ratio as of December 31, 2014 was 35.2%. Using the market value of assets, the funded ratio as of December 31, 2015, is 32.4%, compared to 42.0% as of December 31, 2014.
7. Employer contributions are determined as a multiple of the applicable employee contributions from two years prior. For 2016, the employer contributions are 1.25 times the applicable employee contributions from 2014 ($129,168,659). Therefore, 2016 employer contributions are estimated to be $161,460,824 ($129,168,659 times 1.25).
8. As shown in Chart 13, for the fiscal year beginning January 1, 2016, the actuarially determined contribution (ADC) for pension benefits is $961,769,955. The estimated employer contribution for 2016 was determined to be $161,460,824, of which $8,335,235 is expected to be used for OPEB. Therefore, the estimated 2016 employer contribution for pension benefits is expected to be $153,125,589. **Compared to the actuarially determined contribution of $961,769,955, the contribution deficiency is $808,644,366. Each year there is a contribution deficiency leads to an increased deficiency in all future years.**
9. The total employer contributions for 2015 were estimated to be $163,986,400. Actual employer contributions for 2015 totaled $157,716,475: $8,491,284 for OPEB and $149,225,191 for pension benefits.
10. For the year ended December 31, 2015, Segal has determined that the asset return on a market basis was 2.3%. After gradual recognition of investment gains and losses under the actuarial smoothing method, the actuarial rate of return was 6.9%. This represents an experience loss when compared to the assumed rate of 7.5%. As of December 31, 2015, the actuarial value of assets ($4.82 billion) represents 101.6% of the market value ($4.74 billion).

11. As indicated in Section 2, Subsection B of this report, the total unrecognized investment loss as of December 31, 2015, is $73,699,287. This investment loss will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 7.5% per year (net of expenses) on a market value basis will result in investment losses on the actuarial value of assets in the next few years.
12. As mentioned above, the current method used to determine the actuarial value of assets yields an amount that is 101.6% of the market value of assets as of December 31, 2015. Guidelines in Actuarial Standards of Practice No. 44 (Selection and Use of Asset Valuation Methods for Pension Valuations) recommend that asset values fall within a reasonable range around the corresponding market value. We believe the actuarial asset method currently complies with these guidelines.
13. This actuarial valuation report as of December 31, 2015, is based on financial data as of that date. Changes in the value of assets subsequent to that date are not reflected.

Summary of Key Valuation Results

		2015	2014*
Funding ratios as of December 31:			
Actuarial accrued liability**		$14,655,261,717	$12,324,589,003
Market value of assets		4,741,427,557	5,179,486,296
Unfunded actuarial accrued liability on a market value basis		9,913,834,160	7,145,102,707
Funded ratio on a market value basis		32.35%	42.03%
Actuarial value of assets		$4,815,126,844	$5,039,297,432
Unfunded actuarial accrued liability on an actuarial value basis		9,840,134,873	7,285,291,571
Funded ratio on an actuarial value basis		32.86%	40.89%
Book value of assets		$4,175,111,568	$4,409,382,228
Unfunded actuarial accrued liability on a book value basis		10,480,150,149	7,915,206,775
Funded ratio on a book value basis		28.49%	35.78%
Demographic data as of December 31:			
Number of retirees and beneficiaries		24,964	24,855
Number of inactive members		16,268	15,495
Number of active members		30,683	30,160
Total pensionable salary supplied by the Fund		$1,643,480,973	$1,602,977,593
Average pensionable salary		$53,563	$53,149
Contribution requirement for Fiscal Year:	**2017**	**2016**	**2015**
Applicable members' contribution, two years prior	$130,851,422	$129,168,659	$131,189,154
Statutory contribution multiple	1.25	1.25	1.25
Statutory city contribution	$163,564,278	$161,460,824	$163,986,400
Actuarially determined contribution requirment	N/A	970,112,414	686,374,349

* *Includes the benefit and method changes in Public Act 98-0641*
** *Includes pension and OPEB*

Summary of Key Valuation Results: Pension

	2016	2015*
Contributions for plan year beginning January 1:		
Actuarially determined contribution requirement	$961,769,955	$677,200,246
Expected employer contributions	153,125,589	233,588,700
Actual employer contributions	--	149,225,191
Funding elements for plan year beginning January 1:		
Employer normal cost, including administrative expenses, adjusted for timing	$129,283,370	$83,681,511
Market value of assets	4,741,427,557	5,179,486,296
Actuarial value of assets	4,815,126,844	5,039,297,432
Actuarial accrued liability	14,647,114,971	12,307,094,062
Unfunded actuarial accrued liability on an actuarial value basis	9,831,988,127	7,267,796,630
Funded ratio on an actuarial value basis	32.87%	40.95%
GASB information as of December 31 of the prior year:		
Long-term expected rate of return	7.50%	7.50%
Municipal bond rate	3.57%	3.56%
Single equivalent discount rate	3.73%	7.50%
Total pension liability	$23,358,869,625	$12,307,094,062
Plan fiduciary net position	4,741,427,557	5,179,486,296
Net pension liability	18,617,442,068	7,127,607,766
Plan fiduciary net position as a percentage of total pension liability	20.30%	42.09%

* *Includes the benefit and method changes in Public Act 98-0641*

Summary of Key Valuation Results: OPEB

	2016	2015
Contributions for the plan year beginning January 1:		
Actuarially determined contribution requirement	$8,342,459	$9,174,103
Expected employer contributions	8,335,235	9,111,300
Actual employer contributions	--	8,491,284
Funding elements for plan year beginning January 1:		
Actuarial accrued liability	$8,146,746	$17,494,941
Actuarial value of assets	0	0
Unfunded actuarial accrued liability on a market value basis	8,146,746	17,494,941
Funded ratio on a market value basis	0%	0%
GASB information as of December 31 of the prior year:		
Discount rate	4.50%	4.50%
Total OPEB liability	$8,146,746	$17,494,941

Important Information About Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected benefit obligations. It is an estimated forecast – the actual long-term cost of MEABF will be determined by the actual benefits and expenses paid and the actual investment experience of the Fund.

In order to prepare a valuation, Segal Consulting ("Segal") relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for the Fund is based on data provided to the actuary by Fund staff. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** The valuation is based on the market value of assets as of the valuation date, as provided by Fund staff, and uses an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan members for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each member for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the Fund's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The actuarial valuation is prepared at the request of the Board. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the Fund's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of MEABF will be determined by the actual benefits and expenses paid and the actual investment experience of the Fund.
- If the Board is aware of any event or trend that was not considered in the valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of MEABF's provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.
- The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law.

As Segal has no discretionary authority with respect to the management or assets of the Fund, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Fund.

A. MEMBER DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, inactive members, retirees and beneficiaries.

This section presents a summary of significant statistical data on these member groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A - E.

A historical perspective of how the member population has changed over the past ten valuations can be seen in this chart.

CHART 1

Member Population: 2006 – 2015

Year Ended December 31	Active Members	Inactive Members	Retirees and Beneficiaries	Ratio of Non-Actives to Actives
2006	33,429	10,200	22,828	0.99
2007	34,885	9,105	22,789	0.91
2008	32,563	12,082	22,730	1.07
2009	31,586	12,919	22,782	1.13
2010	30,726	13,866	22,960	1.20
2011	31,976	12,762	23,382	1.13
2012	31,326	13,465	24,120	1.20
2013	30,647	14,254	24,602	1.27
2014	30,160	15,495	24,855	1.34
2015	30,683	16,268	24,964	1.34

Active Members

Plan costs are affected by the age, years of service and salary of active members. In this year’s valuation, there were 30,683 active members with an average age of 46.5, average years of service of 11.7 and average salary of $53,563. The 30,160 active members in the prior valuation had an average age of 46.8, average years of service of 12.0 and average salary of $53,149.

The active members included 187 members receiving ordinary disability benefits and 213 members receiving duty disability benefits. This compares to 195 and 225 members receiving ordinary and duty disability benefits, respectively, in the prior valuation.

Inactive Members

In this year’s valuation, there were 1,900 members with a vested right to a deferred or immediate vested benefit. In addition, there were 14,368 members entitled to a return of their account balance.

This number includes 32 members with unknown age. The actuarial calculations were adjusted for the missing information by assuming that it was the same as information provided for other inactive members with similar known characteristics.

These graphs show a distribution of active members by age and by years of service.

CHART 2

Distribution of Active Members by Age as of December 31, 2015

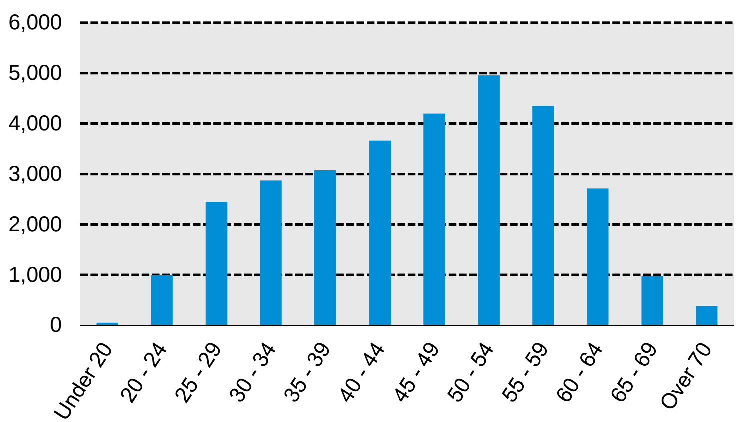
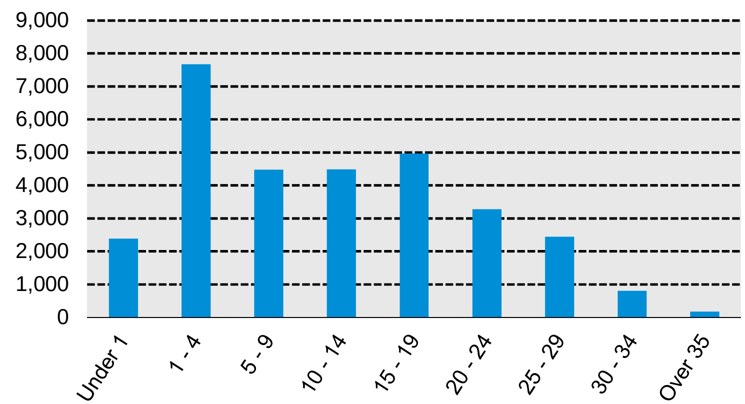


CHART 3

Distribution of Active Members by Years of Service as of December 31, 2015



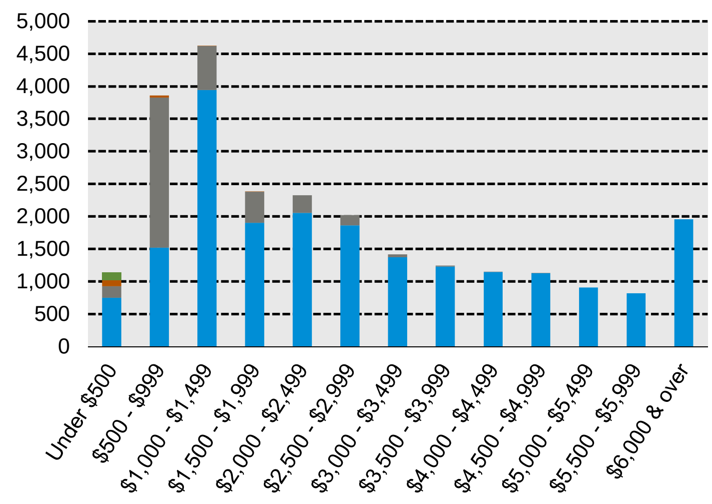
Retirees and Beneficiaries

As of December 31, 2015, 20,584 retirees and 4,378 beneficiaries were receiving total monthly benefits of $67,173,950. For comparison, in the previous valuation, there were 20,411 retirees and 4,441 beneficiaries receiving monthly benefits of $63,634,307.

These graphs show a distribution of the current retirees and beneficiaries based on their monthly amount and age, by type of pension.

CHART 4

Distribution of Retirees and Beneficiaries by Type and by Monthly Amount as of December 31, 2015



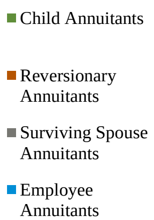
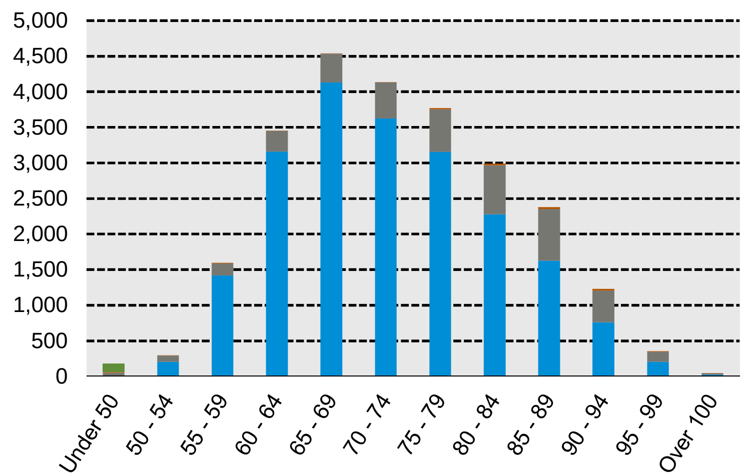


CHART 5

Distribution of Retirees and Beneficiaries by Type and by Age as of December 31, 2015



B. FINANCIAL INFORMATION

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

The chart shows the determination of the actuarial value of assets as of the valuation date.

CHART 6

Determination of Actuarial Value of Assets for Years Ended December 31, 2015 and December 31, 2014

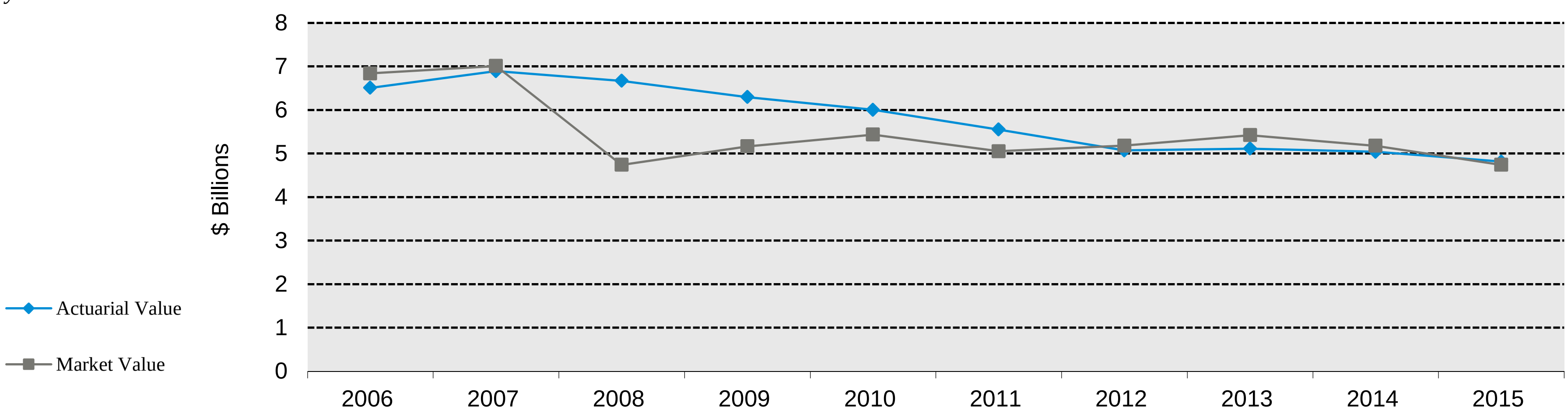
		Original Amount	2015 % Not Recognized	2015	2014 % Not Recognized	2014
1.	Market value of assets as of prior December 31			$5,179,486,296		$5,421,676,295
2.	Employer and employee contributions			289,144,578		288,769,612
3.	Benefits and expenses			841,228,607		814,241,536
4.	Expected investment income			361,843,953		386,920,525
5.	Total investment income, including income for securities lending			114,025,290		283,281,925
6.	Investment gain/(loss) for the year ended December 31: (5) – (4)			-247,818,663		-103,638,600
7.	Market value of assets as of December 31			4,741,427,557		5,179,486,296
8.	Calculation of unrecognized return					
	(a) Year ended December 31, 2015	-$247,818,663	80%	-$198,254,930		--
	(b) Year ended December 31, 2014	-103,638,600	60%	-62,183,160	80%	-$82,910,880
	(c) Year ended December 31, 2013	365,182,175	40%	146,072,870	60%	219,109,305
	(d) Year ended December 31, 2012	203,329,666	20%	40,665,933	40%	81,331,866
	(e) Year ended December 31, 2011	-386,707,137		0	20%	-77,341,427
	(f) Total unrecognized return			-73,699,287		140,188,864
9.	Total actuarial value of assets as of December 31: (7) – (8f)			$4,815,126,844		$5,039,297,432

Both the actuarial value and market value of assets are representations of the Fund's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Fund's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

This chart shows the change in the actuarial value of assets versus the market value over the past ten years.

CHART 7

Actuarial Value of Assets vs. Market Value of Assets as of December 31, 2006 – 2015



C. ACTUARIAL EXPERIENCE

To calculate the actuarially determined contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. Overall favorable experience relative to the assumptions (an actuarial gain) causes a decrease in the contribution requirement. On the other hand, overall less favorable experience relative to the assumptions (an actuarial loss) causes an increase in the contribution requirement.

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total gain is $88,244,369; $29,330,715 from investment losses and $117,575,084 in gains from all other sources. The net experience variation from individual sources other than investments was approximately 0.8% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience during the past year.

CHART 8

Actuarial Experience for Year Ended December 31, 2015

1.	Net gain/(loss) from investments*	-$29,330,715
2.	Net gain/(loss) from administrative expenses	-133,158
3.	Net gain/(loss) from other experience**	117,708,242
4.	Net experience gain/(loss): (1) + (2) + (3)	$88,244,369

* *Details in Chart 9*

** *Details in Chart 12*

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the MEABF's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 7.50%. The actual rate of return on an actuarial basis for the 2015 plan year was 6.88%.

Since the actual return for the year was less than the assumed return, the Fund experienced an actuarial loss during the year ended December 31, 2015 with regard to its investments.

This chart shows the gain/(loss) due to investment experience.

CHART 9

Actuarial Value Investment Experience for Year Ended December 31, 2015

1.	Actual return	$327,913,441
2.	Average value of assets	4,763,255,418
3.	Actual rate of return: (1) ÷ (2)	6.88%
4.	Assumed rate of return	7.50%
5.	Expected return: (2) x (4)	$357,244,156
6.	Actuarial gain/(loss): (1) – (5)	-$29,330,715

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last ten years, including five-year and ten-year averages.

CHART 10

Investment Return

Year Ended December 31	Actuarial Value*	Market Value**
2006	7.6%	12.7%
2007	11.0%	7.3%
2008	1.5%	(28.7%)
2009	(0.3%)	19.6%
2010	1.3%	14.2%
2011	(0.6%)	0.1%
2012	(0.4%)	12.8%
2013	11.1%	16.1%
2014	9.3%	4.7%
2015	6.9%	1.8%
Average Returns		
Last 5 years	5.2%	6.9%
Last 10 years	4.6%	5.1%

* *As determined by Segal*
** *As determined by Investment Consultant*

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs. Chart 11 illustrates that the asset returns on a market basis tend to be more volatile than asset returns on an actuarial basis.

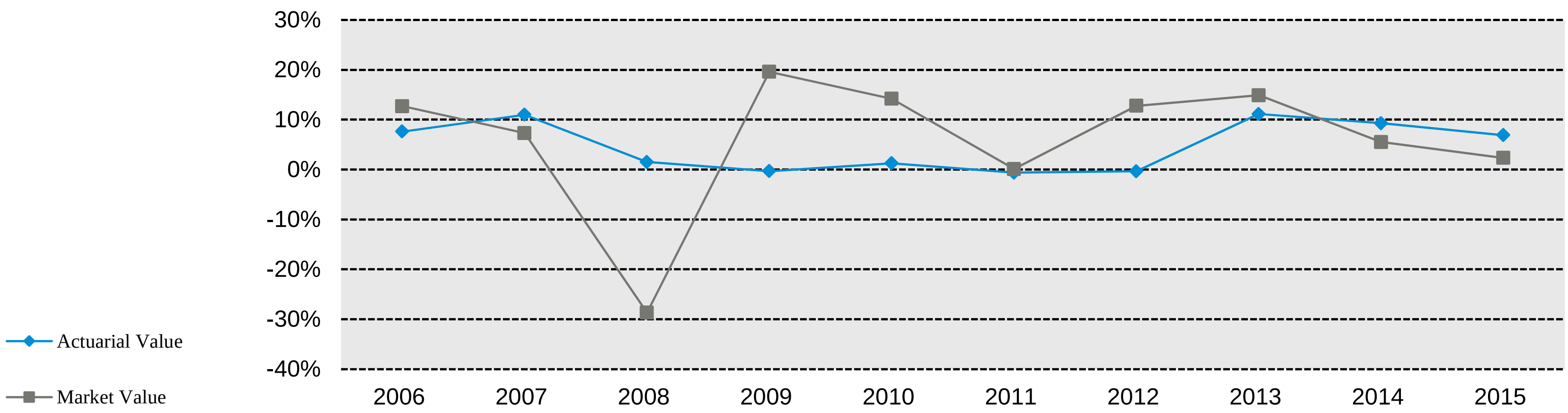
Administrative Expenses

Administrative expenses for the year ended December 31, 2015 totaled $6,701,000 compared to the assumption of $6,567,842. This resulted in a loss of $133,158 for the year.

This chart illustrates how this leveling effect has actually worked over the years 2006 - 2015.

CHART 11

Market and Actuarial Rates of Return for Years Ended December 31, 2006 - 2015



Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- the number of disability retirements, and
- salary increases different than assumed.

The net gain from this other experience for the year ended December 31, 2015, amounted to $117,708,242, which is approximately 0.8% of the actuarial accrued liability.

A brief summary of the demographic gain/(loss) experience of the Fund for the year ended December 31, 2015, is shown in the chart below.

The chart shows elements of the experience gain/(loss) for the most recent year.

CHART 12

Experience Due to Changes in Demographics for Year Ended December 31, 2015

1.	Turnover	$24,289,603
2.	Retirement	-26,985,020
3.	Deaths among retirees and beneficiaries	267,881
4.	Salary/service increase for continuing actives	114,367,955
5.	New entrants	-11,604,349
6.	Miscellaneous	17,372,172
7.	Total	$117,708,242

D. DEVELOPMENT OF EMPLOYER COSTS

The amount of actuarially determined contribution is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability. This total amount is then divided by the projected payroll for active members to determine the actuarially determined contribution of 55.32% of payroll.

The actuarially determined contribution is based on a 30-year, level dollar amortization of the unfunded actuarial accrued liability.

The chart shows the calculation of the actuarially determined contribution for the upcoming year.

CHART 13

Actuarially Determined Contribution

		Year Beginning January 1, 2016	
		Amount	**% of Payroll**
1.	Total normal cost*	$258,388,998	14.86%
2.	Administrative expenses	6,701,000	0.39%
3.	Expected employee contributions**	-140,398,043	-8.08%
4.	Employer normal cost: (1) + (2) + (3)	$124,691,955	7.17%
5.	Employer normal cost, adjusted for timing***	129,283,370	7.44%
6.	Actuarial accrued liability	14,647,114,971	
7.	Actuarial value of assets	4,815,126,844	
8.	Unfunded/(overfunded) actuarial accrued liability: (6) - (7)	$9,831,988,127	
9.	Payment on unfunded actuarial accrued liability, adjusted for timing***	832,486,585	47.88%
10.	Actuarially determined contribution: (5) + (9)	$961,769,955	55.32%
11.	Projected payroll	$1,738,675,456	
12.	Member contributions from two years prior	129,168,659	
13.	Actuarially determined contribution multiple: (10) ÷ (12)	7.45	

** Reflects timing adjustment to the middle of the year*

*** Based on payroll, adjusted to the middle of the year*

**** Employer contributions are assumed to be paid at the end of the year*

The contribution requirements as of December 31, 2015, are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Reconciliation of Actuarially Determined Contribution
The chart below details the changes in the actuarially determined contribution from the prior valuation to the current year's valuation.

The chart reconciles the contribution from the prior valuation to the amount determined in this valuation.

CHART 14

Reconciliation of Actuarially Determined Contribution from December 31, 2014 to December 31, 2015

Actuarially Determined Contribution as of December 31, 2014	$677,200,246
Effect of Public Act 98-0641 ruled unconstitutional	208,784,633
Effect of change in asset method	0
Effect of expected change in amortization payment due to payroll growth	0
Effect of rolling amortization period	-7,841,075
Effect of change in administrative expense assumption	133,158
Effect of change in other actuarial assumptions	0
Effect of contributions (more)/less than actuarially determined contribution	46,714,058
Effect of investment (gain)/loss	2,395,269
Effect of other gains and losses on accrued liability	-9,506,992
Effect of adjusting employee contributions to be based on middle-of-the-year payroll	7,389,371
Effect of employer contributions payable at end of year, instead of the middle of the year	34,070,306
Effect of net other changes	2,430,981
Total change	$284,569,709
Actuarially Determined Contribution as of December 31, 2015	$961,769,955

The determination of the OPEB Annual Required Contribution is detailed below.

Chart 15

Annual Required Contribution: OPEB

	Year Beginning January 1, 2016	
	Amount	**% of Payroll**
1. Normal Cost, adjusted for timing	$7,459	0.00%
2. Unfunded Actuarial Accrued Liability (UAAL)		
(a) Actuarial Accrued Liability (AAL)	8,146,746	
(b) Actuarial Value of Assets	0	
(c) UAAL: (a) – (b)	8,146,746	
3. Payment on UAAL (1 year, Level $), adjusted for timing	8,335,000	0.51%
4. Minimum Actuarially Calculated Contributions: (1) + (3)	8,342,459	0.51%
5. Estimated Member Contributions	0	
6. Annual Required Contribution (ARC): (4) – (5)	8,342,459	0.51%
7. Member contributions from two years prior	129,168,659	
8. Actuarially determined contribution multiple: (6) ÷ (7)	0.06	

EXHIBIT A

Table of Plan Coverage

Category	Year Ended December 31 2015	Year Ended December 31 2014	Change From Prior Year
Active members in valuation:			
Number*	30,683	30,160	1.7%
Average age	46.5	46.8	N/A
Average years of service	11.7	12.0	N/A
Total pensionable salary supplied by the Fund	$1,643,480,973	$1,602,977,593	2.5%
Average pensionable salary	$53,563	$53,149	0.8%
Total active vested members	16,156	16,321	-1.0%
Male members	12,618	12,464	1.2%
Female members	18,065	17,696	2.1%
Tier 1 members	21,711	22,931	-5.3%
Tier 2 members	8,972	7,229	24.1%
Inactive members	16,268	15,495	5.0%
Deferred retirees	2	3	-33.33%
Retirees:			
Number in pay status	20,584	20,411	0.8%
Average age	72.8	72.7	N/A
Average monthly benefit	$3,025	$2,879	5.1%
Surviving spouses:			
Number in pay status	4,126	4,161	-0.8%
Average age	78.2	78.1	N/A
Average monthly benefit	$1,168	$1,148	1.7%
Reversionary annuitants:			
Number in pay status	134	139	-3.6%
Average age	79.9	79.7	N/A
Average monthly benefit	$400	$392	2.0%
Children	118	141	-16.3%
Total number of members	71,915	70,510	2.0%

**Includes 420 and 400 members receiving disability benefits for 2014 and 2015, respectively*

EXHIBIT B.1

All Members in Active Service as of December 31, 2015
By Age, Years of Service, and Total Salary

		Years of Service								
Age	**Total**	**Under 1**	**1 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 & Over**
Under 20	54	40	14	-	-	-	-	-	-	-
	$1,417,953	$1,078,411	$339,542	-	-	-	-	-	-	-
20 – 24	998	439	543	16	-	-	-	-	-	-
	29,402,783	12,736,626	16,209,365	$456,792	-	-	-	-	-	-
25 – 29	2,447	477	1,612	324	34	-	-	-	-	-
	92,380,384	16,493,128	62,443,826	12,190,423	$1,253,007	-	-	-	-	-
30 – 34	2,874	368	1,416	729	292	69	-	-	-	-
	133,686,648	13,722,842	67,025,407	34,587,200	14,471,708	$3,879,491	-	-	-	-
35 – 39	3,076	296	1,092	677	615	352	44	-	-	-
	162,237,852	10,747,841	56,758,361	35,225,049	34,419,987	22,136,675	$2,949,939	-	-	-
40 – 44	3,660	247	974	666	646	802	296	29	-	-
	206,517,194	9,241,569	49,105,000	35,628,173	37,684,752	52,615,733	20,072,675	$2,169,292	-	-
45 – 49	4,196	203	736	604	751	947	608	335	12	-
	245,961,504	8,338,519	35,355,683	31,115,798	39,972,584	61,633,200	43,418,221	25,063,971	$1,063,528	-
50 – 54	4,955	153	587	591	804	1,073	812	740	190	5
	290,097,171	5,532,030	28,927,314	28,309,139	41,274,011	61,902,981	54,024,298	54,483,951	15,195,593	$447,854
55 – 59	4,349	108	415	448	693	910	769	676	291	39
	251,861,184	4,728,417	20,201,463	20,848,233	32,466,752	51,295,830	47,578,630	48,446,488	23,239,551	3,055,820
60 – 64	2,713	37	191	295	428	546	508	450	201	57
	155,157,641	1,276,084	9,675,380	12,915,895	20,030,920	29,879,577	31,567,562	30,959,744	14,809,286	4,043,193
65 – 69	978	14	63	85	164	205	171	162	83	31
	55,704,987	665,585	2,341,691	3,564,708	8,015,700	12,124,909	10,061,071	10,949,574	5,893,678	2,088,071
70 & Over	383	4	26	37	54	67	70	54	27	44
	19,055,672	200,389	747,974	1,154,305	2,059,352	3,456,179	3,889,245	3,355,171	1,704,728	2,488,329
Total	30,683	2,386	7,669	4,472	4,481	4,971	3,278	2,446	804	176
	$1,643,480,973	$84,761,441	$349,131,006	$215,995,715	$231,648,773	$298,924,575	$213,561,641	$175,428,191	$61,906,364	$12,123,267

EXHIBIT B.2

Male Members in Active Service as of December 31, 2015
By Age, Years of Service, and Total Salary

		Years of Service								
Age	Total	Under 1	1 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 & Over
Under 20	12	7	5	-	-	-	-	-	-	-
	$321,772	$218,932	$102,840	-	-	-	-	-	-	-
20 – 24	404	174	223	7	-	-	-	-	-	-
	12,420,101	4,946,537	7,255,689	$217,875	-	-	-	-	-	-
25 – 29	984	164	657	148	15	-	-	-	-	-
	41,239,744	6,348,137	28,035,786	6,190,805	$665,016	-	-	-	-	-
30 – 34	1,235	131	621	333	123	27	-	-	-	-
	65,582,098	5,604,654	32,976,010	18,125,902	7,204,817	$1,670,715	-	-	-	-
35 – 39	1,282	102	452	295	266	153	14	-	-	-
	78,757,380	4,365,781	29,006,035	16,967,391	16,376,407	10,996,747	$1,045,019	-	-	-
40 – 44	1,557	84	440	294	267	343	118	11	-	-
	105,313,859	3,820,334	27,274,656	19,406,512	18,935,117	25,940,296	9,054,214	$882,730	-	-
45 – 49	1,757	81	292	275	291	382	284	145	7	-
	125,665,082	4,049,265	17,604,082	17,849,640	19,773,250	30,076,932	23,325,513	12,384,658	$601,742	-
50 – 54	2,035	55	258	226	308	379	349	347	110	3
	148,938,257	2,441,741	16,059,459	13,715,431	20,925,582	29,010,430	28,107,100	28,880,393	9,512,003	$286,118
55 – 59	1,738	36	168	176	251	310	295	307	175	20
	129,928,143	2,075,617	10,339,105	10,548,314	16,354,690	23,818,257	24,154,086	25,674,382	15,263,574	1,700,118
60 – 64	1,100	14	96	117	152	188	186	202	114	31
	81,610,893	612,802	5,887,008	6,610,316	9,605,657	14,496,259	15,193,500	17,191,149	9,565,569	2,448,633
65 – 69	371	4	28	30	63	81	45	68	42	10
	26,734,238	259,687	1,125,753	1,665,061	4,352,658	6,124,099	3,499,906	5,546,731	3,352,573	807,770
70 & Over	143	3	11	14	23	26	25	23	5	13
	9,106,432	118,042	371,126	586,751	1,180,207	1,667,557	1,913,054	1,823,921	426,617	1,019,157
Total	12,618	855	3,251	1,915	1,759	1,889	1,316	1,103	453	77
	$825,617,999	$34,861,529	$176,037,549	$111,883,998	$115,373,401	$143,801,292	$106,292,392	$92,383,964	$38,722,078	$6,261,796

EXHIBIT B.3

Female Members in Active Service as of December 31, 2015
By Age, Years of Service, and Total Salary

		Years of Service								
Age	Total	Under 1	1 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 & Over
Under 20	42	33	9	-	-	-	-	-	-	-
	$1,096,181	$859,479	$236,702	-	-	-	-	-	-	-
20 – 24	594	265	320	9	-	-	-	-	-	-
	16,982,682	7,790,089	8,953,676	$238,917	-	-	-	-	-	-
25 – 29	1,463	313	955	176	19	-	-	-	-	-
	51,140,640	10,144,991	34,408,040	5,999,618	$587,991	-	-	-	-	-
30 – 34	1,639	237	795	396	169	42	-	-	-	-
	68,104,550	8,118,188	34,049,397	16,461,298	7,266,891	$2,208,776	-	-	-	-
35 – 39	1,794	194	640	382	349	199	30	-	-	-
	83,480,472	6,382,060	27,752,326	18,257,658	18,043,580	11,139,928	$1,904,920	-	-	-
40 – 44	2,103	163	534	372	379	459	178	18	-	-
	101,203,335	5,421,235	21,830,344	16,221,661	18,749,635	26,675,437	11,018,461	$1,286,562	-	-
45 – 49	2,439	122	444	329	460	565	324	190	5	-
	120,296,422	4,289,254	17,751,601	13,266,158	20,199,334	31,556,268	20,092,708	12,679,313	$461,786	-
50 – 54	2,920	98	329	365	496	694	463	393	80	2
	141,158,914	3,090,289	12,867,855	14,593,708	20,348,429	32,892,551	25,917,198	25,603,558	5,683,590	$161,736
55 – 59	2,611	72	247	272	442	600	474	369	116	19
	121,933,041	2,652,800	9,862,358	10,299,919	16,112,062	27,477,573	23,424,544	22,772,106	7,975,977	1,355,702
60 – 64	1,613	23	95	178	276	358	322	248	87	26
	73,546,748	663,282	3,788,372	6,305,579	10,425,263	15,383,318	16,374,062	13,768,595	5,243,717	1,594,560
65 – 69	607	10	35	55	101	124	126	94	41	21
	28,970,749	405,898	1,215,938	1,899,647	3,663,042	6,000,810	6,561,165	5,402,843	2,541,105	1,280,301
70 & Over	240	1	15	23	31	41	45	31	22	31
	9,949,240	82,347	376,848	567,554	879,145	1,788,622	1,976,191	1,531,250	1,278,111	1,469,172
Total	18,065	1,531	4,418	2,557	2,722	3,082	1,962	1,343	351	99
	$817,862,974	$49,899,912	$173,093,457	$104,111,717	$116,275,372	$155,123,283	$107,269,249	$83,044,227	$23,184,286	$5,861,471

EXHIBIT B.4

Board of Education Plan Members in Active Service as of December 31, 2015
By Age, Years of Service, and Total Salary

		Years of Service								
Age	**Total**	**Under 1**	**1 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 & Over**
Under 20	48	35	13	-	-	-	-	-	-	-
	$1,241,401	$910,523	$330,878	-	-	-	-	-	-	-
20 – 24	816	349	452	15	-	-	-	-	-	-
	24,766,582	10,668,069	13,670,529	$427,984	-	-	-	-	-	-
25 – 29	1,942	370	1,278	281	13	-	-	-	-	-
	69,742,124	12,557,444	46,172,374	10,425,134	$587,172	-	-	-	-	-
30 – 34	2,013	275	985	556	175	22	-	-	-	-
	83,382,631	9,644,643	40,379,143	23,945,225	7,700,795	$1,712,825	-	-	-	-
35 – 39	1,876	208	726	449	360	130	3	-	-	-
	80,362,234	7,050,840	30,991,418	19,214,741	16,446,707	6,509,635	$148,893	-	-	-
40 – 44	1,947	163	639	420	335	287	96	7	-	-
	82,697,169	5,718,874	25,814,751	18,433,552	14,659,167	12,868,495	4,747,619	$454,711	-	-
45 – 49	2,100	139	500	361	426	372	190	105	7	-
	87,727,161	5,250,328	19,599,102	14,266,029	16,397,198	16,475,326	9,211,983	5,925,731	$601,464	-
50 – 54	2,484	94	374	386	469	512	335	240	74	-
	104,315,944	3,382,802	14,464,782	14,724,293	17,765,659	20,358,890	15,450,786	13,115,589	5,053,143	-
55 – 59	2,121	65	257	266	420	433	344	243	88	5
	86,096,960	2,585,776	10,008,539	9,089,298	14,879,129	16,392,401	15,007,892	12,332,456	5,375,061	$426,408
60 – 64	1,277	21	115	186	261	261	210	154	58	11
	50,865,705	784,663	4,219,456	6,423,681	9,161,477	9,744,287	9,288,006	7,119,318	3,405,309	719,508
65 – 69	386	10	40	45	77	73	62	53	22	4
	15,349,011	466,273	1,383,351	1,428,721	2,787,265	2,751,530	2,675,609	2,577,204	1,103,794	175,264
70 & Over	133	2	16	24	23	18	20	14	8	8
	4,630,927	134,347	503,560	649,309	648,346	651,270	773,609	539,207	367,586	363,693
Total	17,143	1,731	5,395	2,989	2,559	2,108	1,260	816	257	28
	$691,177,849	$59,154,582	$207,537,883	$119,027,967	$101,032,915	$87,464,659	$57,304,397	$42,064,216	$15,906,357	$1,684,873

EXHIBIT B.5

City Plan Members in Active Service as of December 31, 2015
By Age, Years of Service, and Total Salary

		Years of Service								
Age	Total	Under 1	1 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 & Over
Under 20	5	5	-	-	-	-	-	-	-	-
	$167,888	$167,888	-	-	-	-	-	-	-	-
20 – 24	180	89	90	1	-	-	-	-	-	-
	4,589,737	2,026,557	$2,534,372	$28,808	-	-	-	-	-	-
25 – 29	502	107	331	43	21	-	-	-	-	-
	22,529,942	3,935,684	16,163,134	1,765,289	$665,835	-	-	-	-	-
30 – 34	855	92	429	171	116	47	-	-	-	-
	49,942,991	4,008,199	26,551,423	10,492,438	6,724,265	$2,166,666	-	-	-	-
35 – 39	1,189	88	365	223	253	219	41	-	-	-
	80,870,023	3,697,001	25,715,460	15,713,495	17,743,642	15,199,379	$2,801,046	-	-	-
40 – 44	1,703	84	333	246	308	511	199	22	-	-
	122,730,694	3,522,695	23,090,244	17,194,621	22,604,410	39,345,559	15,258,584	$1,714,581	-	-
45 – 49	2,080	64	235	242	319	570	417	228	5	-
	156,548,747	3,088,191	15,686,589	16,738,198	22,971,738	44,539,085	34,129,416	18,933,466	$462,064	-
50 – 54	2,460	58	212	205	333	558	477	497	115	5
	184,805,562	2,039,228	14,390,532	13,584,846	23,376,072	41,257,436	38,573,512	41,054,616	10,081,466	$447,854
55 – 59	2,217	43	158	182	270	472	424	432	202	34
	164,746,666	2,142,641	10,192,924	11,758,935	17,341,606	34,561,753	32,385,743	36,040,018	17,693,634	2,629,412
60 – 64	1,430	16	76	108	166	285	296	296	142	45
	103,879,846	491,421	5,455,924	6,449,894	10,822,183	20,135,290	22,144,435	23,840,426	11,295,827	3,244,446
65 – 69	589	4	22	40	87	131	109	109	61	26
	40,118,204	199,312	938,002	2,135,987	5,228,435	9,276,955	7,385,462	8,372,370	4,789,884	1,791,797
70 & Over	248	2	10	13	31	48	49	40	19	36
	14,294,860	66,042	244,414	504,996	1,411,006	2,744,343	3,046,317	2,815,964	1,337,142	2,124,636
Total	13,458	652	2,261	1,474	1,904	2,841	2,012	1,624	544	146
	$945,225,160	$25,384,859	$140,963,018	$96,367,507	$128,889,192	$209,226,466	$155,724,515	$132,771,441	$45,660,017	$10,238,145

EXHIBIT C

Inactive Members as of December 31, 2015
By Age and Years of Service

		Years of Service								
Age	Total	Under 1	1 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 & Over
Under 20	2	1	1	-	-	-	-	-	-	-
20 – 24	215	113	102	-	-	-	-	-	-	-
25 – 29	1,271	486	754	31	-	-	-	-	-	-
30 – 34	2,129	623	1,334	158	14	-	-	-	-	-
35 – 39	2,206	529	1,344	247	77	9	-	-	-	-
40 – 44	2,082	463	1,127	313	138	34	7	-	-	-
45 – 49	2,208	606	1,007	305	171	79	32	8	-	-
50 – 54	2,015	349	904	301	227	129	81	24	-	-
55 – 59	1,752	247	730	313	272	132	45	10	3	-
60 – 64	1,119	178	538	196	107	62	28	9	1	-
65 – 69	591	115	289	107	41	20	9	5	4	1
70 & Over	646	96	300	129	54	22	20	16	5	4
Unknown	32	19	9	4	-	-	-	-	-	-
Total	16,268	3,825	8,439	2,104	1,101	487	222	72	13	5
Average Age	46.38									
Average Service	3.80									

EXHIBIT D.1

Employee Annuitants as of December 31, 2015
By Age and Annual Benefit

	Male		Female	
Age	**Number**	**Annual Payments**	**Number**	**Annual Payments**
Under 50	- -	- -	3	$37,260
50 – 54	109	$6,344,772	93	4,692,516
55 – 59	743	40,840,164	675	26,589,509
60 – 64	1,378	72,266,148	1,784	57,598,980
65 – 69	1,641	77,954,172	2,489	73,638,576
70 – 74	1,332	60,891,480	2,294	65,974,032
75 – 79	1,093	47,828,760	2,062	57,518,364
80 – 84	837	36,237,612	1,441	38,602,944
85 – 89	579	26,543,388	1,045	25,933,560
90 – 94	261	10,767,012	497	11,303,376
95 – 99	59	2,181,576	145	3,081,384
100 & over	6	113,388	18	345,840
Totals	8,038	$381,968,472	12,546	$365,316,341

EXHIBIT D.2

Surviving Spouse Annuitants as of December 31, 2015
By Age and Annual Benefit

	Male		Female	
Age	Number	Annual Payments	Number	Annual Payments
Under 30	- -	- -	- -	- -
30 – 34	- -	- -	1	$9,600
35 – 39	2	$19,200	3	28,800
40 – 44	1	9,600	10	99,612
45 – 49	2	20,448	33	423,828
50 – 54	22	221,148	63	885,732
55 – 59	38	497,076	132	2,009,076
60 – 64	56	660,420	230	3,719,196
65 – 69	84	1,008,396	320	4,939,524
70 – 74	115	1,318,716	389	6,238,944
75 – 79	122	1,430,172	477	7,312,596
80 – 84	129	1,516,536	561	8,265,960
85 – 89	135	1,470,672	590	8,222,040
90 – 94	61	724,596	387	4,970,712
95 – 99	18	189,720	126	1,438,956
100 & over	5	54,552	14	131,988
Totals	790	$9,141,252	3,336	$48,696,564

EXHIBIT D.3

Reversionary Annuitants as of December 31, 2015
By Age and Annual Benefit

	Male		Female	
Age	Number	Annual Payments	Number	Annual Payments
Under 30	- -	- -	1	$2,616
30 – 34	- -	- -	- -	- -
35 – 39	- -	- -	2	3,876
40 – 44	- -	- -	1	1,464
45 – 49	- -	- -	2	3,432
50 – 54	- -	- -	1	696
55 – 59	2	$19,608	6	35,148
60 – 64	- -	- -	7	42,492
65 – 69	2	4,584	3	15,480
70 – 74	- -	- -	6	43,824
75 – 79	1	4,440	18	108,768
80 – 84	- -	- -	22	116,460
85 – 89	- -	- -	29	118,884
90 – 94	- -	- -	21	88,020
95 – 99	- -	- -	8	29,088
100 & over	- -	- -	2	4,356
Totals	5	$28,632	129	$614,604

EXHIBIT D.4

Retirees and Beneficiaries as of December 31, 2015
By Monthly Benefit Amount and Type

Amount of Monthly Benefit	Number of Employee Annuitants	Number of Spouse Annuitants	Number of Reversionary Annuitants	Number of Child Annuitants	Total Number of Annuitants
Under $500	750	176	92	118	1,136
$500 - $999	1,519	2,305	37	- -	3,861
$1,000 - $1,499	3,946	677	3	- -	4,626
$1,500 - $1,999	1,904	476	2	- -	2,382
$2,000 - $2,499	2,055	270	- -	- -	2,325
$2,500 - $2,999	1,862	158	- -	- -	2,020
$3,000 - $3,499	1,370	46	- -	- -	1,416
$3,500 - $3,999	1,228	16	- -	- -	1,244
$4,000 - $4,499	1,148	1	- -	- -	1,149
$4,500 - $4,999	1,124	1	- -	- -	1,125
$5,000 - $5,499	904	- -	- -	- -	904
$5,500 - $5,999	817	- -	- -	- -	817
$6,000 & over	1,957	- -	- -	- -	1,957
Totals	20,584	4,126	134	118	24,962

EXHIBIT E.1
Health Insurance Coverage as of December 31, 2015 – All Plan Members

Employee Annuitants

Age	Single Coverage	Family Coverage	Total Covered	Total Not Covered	Total Annuitants	% Covered Annuitants
Under 30	0	0	0	0	0	--
30 - 39	0	0	0	0	0	--
40 - 49	1	0	1	2	3	33.33%
50 - 59	288	127	415	1,208	1,623	25.57%
60 – 69	1,567	680	2,247	5,047	7,294	30.81%
70 – 79	1,935	765	2,700	4,076	6,776	39.85%
80 – 89	1,403	459	1,862	2,041	3,903	47.71%
90 & Over	422	89	511	474	985	51.88%
Total	5,616	2,120	7,736	12,848	20,584	37.58%

Spouse Annuitants

Age	Single Coverage	Family Coverage	Total Covered	Total Not Covered	Total Annuitants	% Covered Annuitants
Under 30	0	0	0	1	1	0.00%
30 - 39	0	1	1	7	8	12.50%
40 - 49	2	0	2	47	49	4.08%
50 - 59	25	5	30	234	264	11.36%
60 – 69	152	5	157	546	703	22.33%
70 – 79	387	4	391	738	1,129	34.63%
80 – 89	598	3	601	863	1,464	41.05%
90 & Over	289	2	291	351	642	45.33%
Total	1,453	20	1,473	2,787	4,260	34.58%

EXHIBIT E.2
Health Insurance Coverage as of December 31, 2015 – City Plan Members

Employee Annuitants

Age	Single Coverage	Family Coverage	Total Covered	Total Not Covered	Total Annuitants	% Covered Annuitants
Under 30	0	0	0	0	0	- -
30 - 39	0	0	0	0	0	- -
40 - 49	1	0	1	2	3	33.33%
50 - 59	287	127	414	617	1,031	40.16%
60 – 69	1,503	661	2,164	1,999	4,163	51.98%
70 – 79	1,690	730	2,420	1,050	3,470	69.74%
80 – 89	1,054	417	1,471	522	1,993	73.81%
90 & Over	276	76	352	146	498	70.68%
Total	4,811	2,011	6,822	4,336	11,158	61.14%

Spouse Annuitants

Age	Single Coverage	Family Coverage	Total Covered	Total Not Covered	Total Annuitants	% Covered Annuitants
Under 30	0	0	0	1	1	0.00%
30 - 39	0	1	1	4	5	20.00%
40 - 49	2	0	2	25	27	7.41%
50 - 59	25	5	30	144	174	17.24%
60 – 69	148	5	153	309	462	33.12%
70 – 79	375	4	379	318	697	54.38%
80 – 89	542	3	545	403	948	57.49%
90 & Over	236	2	238	182	420	56.67%
Total	1,328	20	1,348	1,386	2,734	49.31%

EXHIBIT E.3
Health Insurance Coverage as of December 31, 2015 – Board of Education Members

Employee Annuitants

Age	Single Coverage	Family Coverage	Total Covered	Total Not Covered	Total Annuitants	% Covered Annuitants
Under 30	0	0	0	0	0	- -
30 - 39	0	0	0	0	0	- -
40 - 49	0	0	0	0	0	- -
50 - 59	1	0	1	591	592	0.17%
60 – 69	64	19	83	3,048	3,131	2.65%
70 – 79	245	35	280	3,026	3,306	8.47%
80 – 89	349	42	391	1,519	1,910	20.47%
90 & Over	146	13	159	328	487	32.65%
Total	805	109	914	8,512	9,426	9.70%

Spouse Annuitants

Age	Single Coverage	Family Coverage	Total Covered	Total Not Covered	Total Annuitants	% Covered Annuitants
Under 30	0	0	0	0	0	- -
30 - 39	0	0	0	3	3	0.00%
40 - 49	0	0	0	22	22	0.00%
50 - 59	0	0	0	90	90	0.00%
60 – 69	4	0	4	237	241	1.66%
70 – 79	12	0	12	420	432	2.78%
80 – 89	56	0	56	460	516	10.85%
90 & Over	53	0	53	169	222	23.87%
Total	125	0	125	1,401	1,526	8.19%

EXHIBIT F
Reconciliation of Member Data

	Active Members*	Inactive Members	Deferred Retirees	Retirees	Beneficiaries	Total
Number as of December 31, 2014	30,160	15,495	3	20,411	4,441	70,510
New members	3,216	N/A	N/A	N/A	N/A	3,216
Terminations	-1,343	1,343	0	0	0	0
Retirements	-796	-175	-1	972	N/A	0
Died with beneficiary	-29	-1	0	-199	229	0
Died without beneficiary	-42	-22	0	-608	-291	-963
Refunds	-716	-236	0	0	0	-952
Rehire	247	-207	0	0	N/A	40
Net transfers	-7	71	0	0	0	64
Temporary annuity expired	N/A	N/A	NA	-10	-29	-39
Data adjustment	-7	0	0	18	28	39
Number as of December 31, 2015	30,683	16,268	2	20,584	4,378	71,915

** Includes members receiving disability benefits*

EXHIBIT G.1

Summary Statement of Income and Expenses on a Market Value Basis

	Year Ended December 31, 2015		Year Ended December 31, 2014	
Net assets at market value at the beginning of the year		$5,179,486,296		$5,421,676,295
Contribution income:				
Employer contributions	$157,716,475		$158,797,631	
Employee contributions	131,428,103		129,971,981	
Administrative expenses	-6,701,000		-6,567,842	
Net contribution income		282,443,578		282,201,770
Investment income:				
Interest, dividends and other income	$125,281,226		$133,521,538	
Asset appreciation	12,249,736		174,388,129	
Less investment fees	-23,505,672		-24,627,742	
Net investment income		114,025,290		283,281,925
Total income available for benefits		$396,468,868		$565,483,695
Less benefit payments:				
Annuity payments	-$782,083,804		-$754,391,331	
Refund of contributions	-31,685,872		-32,325,780	
Disability payments	-12,266,647		-11,905,700	
Postemployment healthcare subsidy	-8,491,284		-9,050,883	
Net benefit payments		-$834,527,607		-$807,673,694
Change in reserve for future benefits		-$438,058,739		-$242,189,999
Net assets at market value at the end of the year		$4,741,427,557		$5,179,486,296

EXHIBIT G.2
Summary Statement of Income and Expenses on a Book Value Basis

	Year Ended December 31, 2015		Year Ended December 31, 2014	
Net assets at book value at the beginning of the year		$4,409,382,228		$4,571,003,387
Contribution income:				
Employer contributions	$157,716,475		$158,797,631	
Employee contributions	131,428,103		129,971,981	
Administrative expenses	-6,701,000		-6,567,842	
Net contribution income		282,443,578		282,201,770
Investment income:				
Interest, dividends and other income	$125,281,226		$133,521,538	
Realized investment gain/(loss)	216,037,815		254,956,970	
Less investment fees	-23,505,672		-24,627,742	
Net investment income		317,813,369		363,850,766
Total income available for benefits		$600,256,947		$646,052,536
Less benefit payments:				
Annuity payments	-$782,083,804		-$754,391,331	
Refund of contributions	-31,685,872		-32,325,780	
Disability payments	-12,266,647		-11,905,700	
Postemployment healthcare subsidy	-8,491,284		-9,050,883	
Net benefit payments		-$834,527,607		-$807,673,694
Change in reserve for future benefits		-$234,270,660		-$161,621,158
Net assets at book value at the end of the year		$4,175,111,568		$4,409,382,228

EXHIBIT H

Summary Statement of Plan Assets

	Year Ended December 31, 2015		Year Ended December 31, 2014	
Cash equivalents		$489,229		$489,181
Accounts receivable:				
Employer contributions	$159,417,035		$159,574,378	
Member contributions	8,605,457		10,948,696	
Interest and dividends	13,414,492		12,940,276	
Investments sold	30,352,577		39,908,005	
Miscellaneous	404,244		299,515	
Total accounts receivable		212,193,805		223,670,870
Investments, at fair value:				
Equities	$2,502,858,000		$2,819,487,638	
Fixed income	1,147,787,800		1,284,769,161	
Real estate	520,696,873		493,998,298	
Short-term investments	204,541,471		213,971,637	
Other	243,481,833		255,281,280	
Total investments at market value		4,619,365,977		5,067,508,014
Invested securities lending collateral		396,836,061		391,442,762
Capital assets		12,309		15,299
Total assets		$5,228,897,381		$5,683,126,126
Less accounts payable:				
Securities lending collateral	-$396,898,803		-$393,208,539	
Investments purchased	-78,958,135		-99,258,070	
Accounts payable	-6,871,813		-6,929,526	
OPEB liability	-4,741,073		-4,243,695	
Total accounts payable		-$487,469,824		-$503,639,830
Net assets at market value		$4,741,427,557		$5,179,486,296
Net assets at actuarial value		$4,815,126,844		$5,039,297,432

EXHIBIT I

Development of the Fund Through December 31, 2015

Year Ended December 31	Employer Contributions	Employee Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
2006	$157,062,769	$129,466,091	$ 471,253,769	$6,397,685	$574,617,994	$6,509,145,626
2007	148,137,050	132,442,200	698,847,365	7,532,301	590,577,022	6,890,462,918
2008	155,832,612	137,748,907	101,373,105	7,749,714	608,166,058	6,669,501,770
2009	157,697,608	130,980,605	(21,761,698)	7,765,918	632,864,176	6,295,788,191
2010	164,302,005	133,299,542	76,825,912	6,744,947	660,081,098	6,003,389,605
2011	156,525,374	132,596,417	(37,170,409)	7,375,338	695,674,232	5,552,291,417
2012	158,380,709	130,266,293	(19,193,464)	6,841,486	741,583,194	5,073,320,275
2013	157,704,971	131,532,173	537,153,324	6,498,913	779,004,027	5,114,207,803
2014	158,797,631	129,971,981	450,561,553	6,567,842	807,673,694	5,039,297,432
2015	157,716,475	131,428,103	327,913,441	6,701,000	834,527,607	4,815,126,844

** Actuarial investment return, net of investment fees*

EXHIBIT J

Development of Unfunded Actuarial Accrued Liability

	Year Ending December 31				
	2015	**2014**	**2013**	**2012**	**2011**
1. Unfunded actuarial accrued liability at beginning of year*	$7,285,291,571	$8,742,285,563	$8,564,139,771	$6,903,880,605	$6,048,840,271
2. Normal cost at beginning of year*	233,177,207	253,748,078	265,457,853	-	-
3. Total contributions	-289,144,578	-288,769,612	-289,237,144	-	-
4. Interest					
(a) Unfunded actuarial accrued liability and normal cost	$563,885,158	$674,702,523	$662,219,822	-	-
(b) Total contributions	-4,839,455	-10,633,094	-10,650,310	-	-
(c) Total interest: (4a) + (4b)	559,045,703	664,069,429	651,569,512	520,449,450**	449,777,576**
5. Expected unfunded actuarial accrued liability: (1) + (2) + (3) + (4c)	$7,788,369,903	$9,371,333,458	$9,191,929,992	$7,424,330,055	$6,498,617,847
6. Changes due to (gain)/loss from:					
(a) Investments	$29,330,715	-$86,701,165	-$174,927,836	$445,339,476	$501,202,990
(b) Demographics and other	-117,575,084	-8,634,360	-144,376,875	-36,949,696	-36,971,899
(c) Total changes due to (gain)/loss: (6a) + (6b)	-88,244,369	-95,335,525	-319,304,711	408,389,780	464,231,091
7. Change due to plan provisions	2,140,009,339	-1,990,706,362	-130,339,718	0	0
8. Change in actuarial assumptions	0	0	0	731,419,936	(58,968,333)
9. Unfunded actuarial accrued liability at end of year*: (5) + (6c) + (7) + (8)	$9,840,134,873	$7,285,291,571	$8,742,285,563	$8,564,139,771	$6,903,880,605

** Includes pension and OPEB liabilities*

*** Losses during the year attributable to contributions less than normal cost plus interest*

EXHIBIT K
Definitions of Terms

The following list defines certain technical terms for the convenience of the reader:

Actuarial Accrued Liability For Actives: The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial Accrued Liability For Pensioners: The single-sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Actuarial Cost Method: A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the Actuarially Determined Contribution.

Actuarial Gain or Actuarial Loss: A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., MEABF's assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield in actuarial liabilities that are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.

Actuarially Equivalent: Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value (APV): The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is:

a. Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)
b. Multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and
c. Discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Plan Benefits: The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would be provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation: The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB, such as the Actuarially Determined Contribution (ADC) and the Net Pension Liability (NPL).

Actuarial Value of Assets: The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.

Actuarially Determined: Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

Actuarially Determined Contribution (ADC): The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the Plan's funding policy. The ADC consists of the Employer Normal Cost and the Amortization Payment.

Amortization Method: A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.

Amortization Payment: The portion of the pension plan contribution, or ADC, that is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Assumptions or Actuarial Assumptions: The estimates on which the cost of the Plan is calculated including:

(a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;

(b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;

(c) Retirement rates — the rate or probability of retirement at a given age;

(d) Withdrawal rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Closed Amortization Period: A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Open Amortization Period.

Decrements: Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.

Defined Benefit Plan:	A retirement plan in which benefits are defined by a formula applied to the member’s compensation and/or years of service.
Defined Contribution Plan:	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan’s earnings are allocated to each account, and each member’s benefits are a direct function of the account balance.
Employer Normal Cost:	The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.
Experience Study:	A periodic review and analysis of the actual experience of the Fund that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.
Funded Ratio:	The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA, as another measure of the Plan’s health.
GASB:	Governmental Accounting Standards Board.
GASB: 43 and GASB 45:	Governmental Accounting Standards Board Statements No. 43 and No. 45. These are the governmental accounting standards that set the accounting rules for public postemployment benefit plans other than pension plans and the employers that sponsor or contribute to them. Statement No. 45 sets the accounting rules for the employers that sponsor or contribute to public postemployment benefit plans other than pension plans, while Statement No. 43 sets the rules for the plans themselves.
GASB 67 and GASB 68:	Governmental Accounting Standards Board Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves. Governmental Accounting Standards Board Statements No. 67 and No. 68 are the successor statements to GASB Statements No. 25 and No. 27.
GASB 74 and GASB 75:	Governmental Accounting Standards Board Statements No. 74 and No. 75 are the successor statements to GASB Statements No. 43 and No. 45.

Investment Return:	The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.
Net Pension Liability (NPL):	The Net Pension Liability is equal to the Total Pension Liability minus the Plan Fiduciary Net Position.
Normal Cost:	That portion of the Actuarial Present Value of pension plan benefits and expenses allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated.
Open Amortization Period:	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount, or in relation to covered payroll, if the actuarial assumptions are realized.
Plan Fiduciary Net Position:	Market value of assets.
Total Pension Liability (TPL):	The actuarially accrued liability under the entry age normal cost method and based on the blended discount rate as described in GASB 67 and 68.
Unfunded Actuarial Accrued Liability:	The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.
Valuation Date or Actuarial Valuation Date:	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

EXHIBIT I

Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1.	Pensioners as of the valuation date (including 4,378 beneficiaries and 2 deferred retirees)		24,964
2.	Members inactive during year ended December 31, 2015 with vested rights		1,900
3.	Members active during the year ended December 31, 2015		30,683
	Fully vested	16,156	
	Not vested	14,527	
4.	Other non-vested inactive members as of the valuation date		14,368

Determination of Actuarial Accrued Liability:

		Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
1.	Active members			
	a. Retirement benefits	$7,229,745,221	$1,536,080,631	$5,693,664,590
	b. Death benefits	103,420,360	34,983,970	68,436,390
	c. Withdrawal benefits	570,808,567	498,760,076	72,048,491
	d. Total	$7,903,974,148	$2,069,824,677	$5,834,149,471
2.	Inactive vested members	$276,711,853	--	$276,711,853
3.	Inactive non-vested members	115,719,247	--	115,719,247
4.	Retirees and beneficiaries	8,420,534,400	--	8,420,534,400
5.	Total	$16,716,939,648	$2,069,824,677	$14,647,114,971

Determination of Unfunded Actuarial Accrued Liability:

1.	Actuarial accrued liability	$14,647,114,971
2.	Actuarial value of assets ($4,741,427,557 at market value)	4,815,126,844
3.	Unfunded actuarial accrued liability	$9,831,988,127

EXHIBIT I (continued)

Summary of Actuarial Valuation Results

Components of normal cost:	Tier 1		Tier 2		Total	
	% of Payroll	Amount	% of Payroll	Amount	% of Payroll	Amount
1. Retirement	11.37%	$151,647,369	5.67%	$22,958,147	10.04%	$174,605,516
2. Turnover	3.66%	48,856,452	2.15%	8,725,236	3.31%	57,581,688
3. Mortality	0.22%	2,912,953	0.26%	1,072,256	0.23%	3,985,209
4. Disability	0.75%	10,001,352	0.75%	3,038,714	0.75%	13,040,066
5. Total normal cost: (1) + (2) + (3) + (4)	16.00%	$213,418,126	8.83%	$35,794,353	14.33%	$249,212,479
6. Total normal cost, adjusted for timing*					14.86%	258,388,998
7. Administrative expenses					0.39%	6,701,000
8. Total normal cost, including administrative expenses: (6) + (7)					15.25%	$265,089,998
9. Expected employee contributions**					-8.08%	-140,398,043
10. Employer normal cost: (8) + (9)					7.17%	$124,691,955
11. Employer normal cost, adjusted for timing***					7.87%	$129,283,370

** Reflects timing adjustment to the middle of the year*

*** Based on payroll, adjusted to the middle of the year*

**** Reflects timing adjustment to the end of the year*

EXHIBIT II

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll* [(b) - (a)] / (c)
12/31/2006	$6,509,145,626	$9,476,118,446	$2,966,972,820	68.69%	$1,475,877,378	201.03%
12/31/2007	6,890,462,918	9,968,746,844	3,078,283,926	69.12%	1,564,458,835	196.76%
12/31/2008	6,669,501,770	10,383,157,695	3,713,655,925	64.23%	1,543,976,553	240.53%
12/31/2009	6,295,788,191	10,830,119,369	4,534,331,178	58.13%	1,551,973,348	292.17%
12/31/2010	6,003,389,605	11,828,665,658	5,825,276,053	50.75%	1,541,388,065	377.92%
12/31/2011	5,552,291,417	12,292,930,124	6,740,638,707	45.17%	1,605,993,339	419.72%
12/31/2012	5,073,320,275	13,475,376,963	8,402,056,688	37.65%	1,590,793,702	528.17%
12/31/2013	5,114,207,803	13,828,920,032	8,714,712,229	36.98%	1,580,288,709	551.46%
12/31/2014	5,039,297,432	12,307,094,062	7,267,796,630	40.94%	1,602,977,593	453.39%
12/31/2015	4,815,126,844	14,647,114,971	9,831,988,127	32.87%	1,643,480,973	598.24%

** Not less than zero*

EXHIBIT III

Solvency Test

Actuarial Valuation Date	(1) Active and Inactive Member Contribution	(2) Retirees and Beneficiaries	(3) Active and Inactive Members (ER Financed Portion)	Actuarial Value of Assets	Portion (%) of Present Value Covered By Assets		
					(1)	(2)	(3)
12/31/2006	$1,347,789,693	$5,438,978,756	$2,905,551,034	$6,509,145,626	100.00%	94.90%	0.00%
12/31/2007	1,437,604,071	5,572,797,922	3,176,213,194	6,890,462,918	100.00%	97.85%	0.00%
12/31/2008	1,536,221,953	5,701,015,809	3,368,610,969	6,669,501,770	100.00%	90.04%	0.00%
12/31/2009	1,610,503,053	5,874,606,230	3,569,183,317	6,295,788,191	100.00%	79.75%	0.00%
12/31/2010	1,682,418,161	6,438,552,003	3,931,259,712	6,003,389,605	100.00%	67.11%	0.00%
12/31/2011	1,724,683,910	6,803,140,300	3,928,347,812	5,552,291,417	100.00%	56.26%	0.00%
12/31/2012	1,724,021,890	7,633,045,219	4,280,392,937	5,073,320,275	100.00%	43.88%	0.00%
12/31/2013	1,763,193,047	7,938,850,949	4,154,449,370	5,114,207,803	100.00%	42.21%	0.00%
12/31/2014	1,816,477,893	7,029,523,772	3,478,587,338	5,039,297,432	100.00%	45.85%	0.00%
12/31/2015	1,874,982,804	8,427,968,220	4,352,310,693	4,815,126,844	100.00%	34.89%	0.00%

EXHIBIT IV

Funded Ratio

A critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the actuarial value of assets to the actuarial accrued liabilities of the Plan as calculated. High ratios indicate a well-funded plan with assets sufficient to cover the plan's actuarial accrued liabilities. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors.

The chart below depicts a history of the funded ratios for this plan.

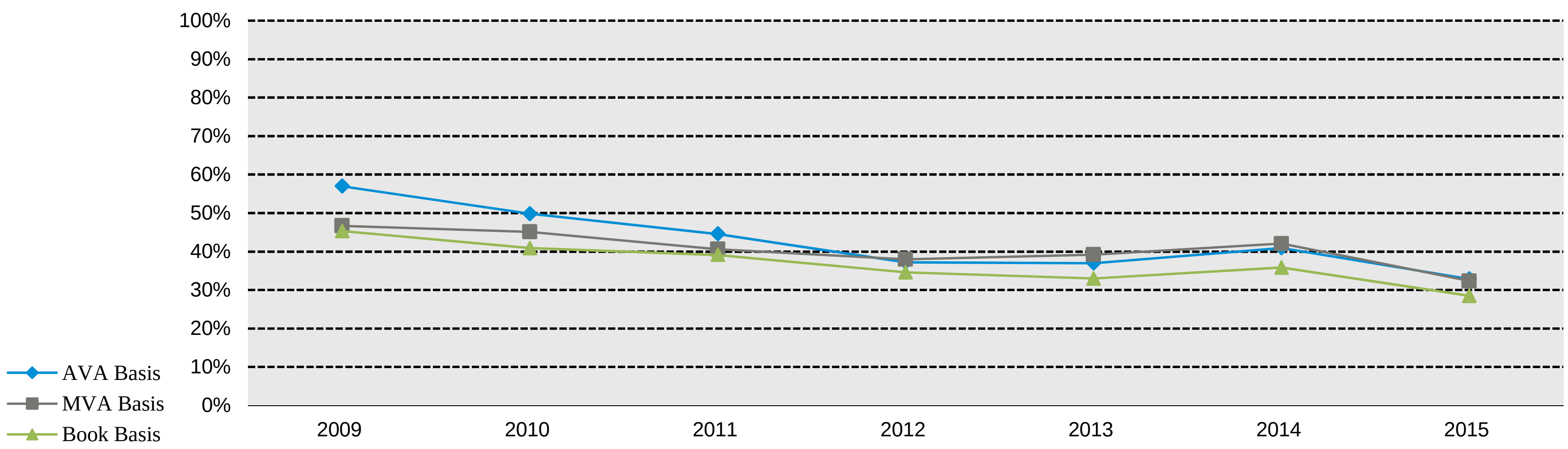


EXHIBIT V

Statutory Reserves as of December 31, 2015

	New in 2015			Continuing from 2014			Total		
	Annuity Payment Fund	Prior Service Fund	Total	Annuity Payment Fund	Prior Service Fund	Total	Annuity Payment Fund	Prior Service Fund	Total
Statutory Reserve*									
Retirees	$137,591,449	$322,685,389	$460,276,838	$1,444,151,402	$5,460,963,936	$6,905,115,338	$1,581,742,851	$5,783,649,325	$7,365,392,176
Future Surviving Spouses	$27,506,937	$17,237,173	$44,744,110	$332,942,443	$434,892,002	$767,834,445	$360,449,380	$452,129,175	$812,578,555
Spouses**	$18,204,711	$13,411,291	$31,616,002	$174,001,626	$160,399,535	$334,401,161	$192,206,337	$173,810,826	$366,017,163
Annual Benefits									
Retirees	$12,396,505	$18,942,364	$31,338,869	$178,330,660	$537,615,284	$715,945,944	$190,727,165	$556,557,648	$747,284,813
Future Surviving Spouses	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Spouses**	$2,271,079	$1,914,821	$4,185,900	$26,913,553	$27,381,599	$54,295,152	$29,184,632	$29,296,420	$58,481,052

* *As required by State statutes, Statutory Reserves are calculated using the Combined Annuity Mortality Table with interest at 3.00 percent per annum, except for employees and spouses of employees who were participants on or before January 1, 1952, for whom the American Experience Table of Mortality with interest at 4.00 percent per annum is used.*

** *Surviving spouses also include reversionary annuitants.*

EXHIBIT VI

State Reporting Disclosure (40 ILCS 5/1A-110 (b)(5)(iv))

	2015	2014
Projected Unit Credit Accrued Liability (PUCAL)*		
Payable to Retirees and Beneficiaries	$8,427,968,220	$7,029,523,772
Current Active and Inactive Employees:		
Accumulated Active and Inactive Employee Contributions	1,874,982,804	1,816,477,893
Payable to Vested and Non-Vested Employees	2,412,987,207	1,773,450,898
Total PUCAL	$12,715,938,231	$10,619,452,563
Net Assets Available for Benefits, Actuarial Value	$4,815,126,844	$5,039,297,432
Unfunded PUCAL (PUCAL in excess of assets)	$7,900,811,387	$5,580,155,131
Percent Funded	37.87%	47.45%
Unfunded PUCAL as Percent of Payroll	480.74%	453.39%
Payroll	$1,643,480,973	$1,602,977,593

**Includes pension and OPEB liabilities*

EXHIBIT VII

Actuarial Reserve Liabilities as of December 31, 2015

Accrued Liability for Active and Inactive Participants*	$6,227,293,497
Reserves for:	
Service Retirement Pension	$7,478,084,955
Future Spouses of Current Retirees	538,830,791
Surviving Spouse Pension	402,494,591
Health Insurance Supplement	7,433,820
Child Annuitants	1,124,063
Total Accrued Liability	$14,655,261,717
Actuarial Net Assets	4,815,126,844
Unfunded Actuarial Liabilities	$9,840,134,873

* *Accrued liability for active participants includes retirement liability for members in ordinary or duty disability status. Liability for disability benefits is recognized as a one-year term cost of 0.75 percent of pay added to the normal cost. Includes pension and OPEB liabilities.*

EXHIBIT VIII

50-Year Projection of Contributions, Liabilities, and Assets

Based on the results of the December 31, 2015, actuarial valuation, we have projected valuation results for a 50-year period.

For purposes of the projections, all assets, contributions, and benefit payments, including amounts attributable to the retiree health insurance program, have been included. Our projections of contributions, liabilities, and assets are based on the actuarial assumptions, membership data and benefit provisions that were used for the regular actuarial valuation.

In order to determine projected contributions, liabilities, and assets, certain calculations needed to be made that are not normally required in a regular actuarial valuation. Benefit payout requirements, actuarial liabilities, and payroll were estimated over the 50-year period from 2016 through 2064 by projecting the membership of the Fund over the 50-year period, taking into account the impact of new entrants into the Fund over the 50-year period.

To make the required projections, assumptions needed to be made regarding the age and salary distribution of new entrants as well as the size of the active membership of the Fund. The assumptions regarding the profile of new entrants to the Fund were based on the recent experience of the Fund with regard to new entrants. The size of the active membership of the Fund was assumed to remain constant over the 50-year projection period. The results of our projections are shown on the following pages.

For purposes of this projection, we have assumed that all available assets, including accumulated contributions made by existing active members, will be used to pay benefits until insolvency; at that point, requests for refund of contributions from terminating active members will be treated as benefit payments that must be funded by employer contributions. However, the legality of this situation is questionable, and if it is determined that the reserve for accumulated active member contributions cannot be paid to existing annuitants, the Fund would become insolvent earlier than 2025.

EXHIBIT VIII (continued)

50-Year Projection of Contributions, Liabilities, and Assets

Based on the December 31, 2015 actuarial valuation.
(All dollar amounts are in thousands. Employer Contributions are shown on a cash basis in the fiscal year they are actually paid, not receivable. Actuarial Liability and asset figures as of end of year.)

Fiscal Year	Employee Contributions	Employer Contributions (Cash Basis)	Pensionable Payroll	Normal Cost	Benefit Payouts	Estimated Expenses	Total Actuarial Liability	Market Value of Assets	Actuarial Value of Assets	Unfunded Actuarial Liability	Funded Ratio	Contribution Multiple
2015	$131,428	$158,798	$1,643,481	$226,816	$834,528	$6,701	$14,655,262	$4,741,428	$4,815,127	$9,840,135	32.9%	1.25
2016	140,400	157,716	1,738,695	249,212	877,053	6,701	15,111,768	4,487,056	4,604,167	10,507,601	30.5%	1.25
2017	144,690	161,461	1,791,830	272,864	903,078	6,902	15,601,032	4,192,947	4,312,802	11,288,230	27.6%	1.25
2018	149,134	163,564	1,846,856	276,496	938,414	7,109	16,094,218	3,853,809	3,903,373	12,190,845	24.3%	1.25
2019	153,650	172,867	1,902,785	280,474	976,284	7,322	16,589,364	3,459,687	3,459,687	13,129,677	20.9%	1.25
2020	158,237	178,150	1,959,595	284,526	1,016,860	7,542	17,083,888	3,003,904	3,003,904	14,079,984	17.6%	1.25
2021	162,886	183,621	2,017,168	288,514	1,060,019	7,768	17,574,995	2,479,302	2,479,302	15,095,694	14.1%	1.25
2022	167,529	189,181	2,074,666	291,936	1,105,098	8,001	18,059,829	1,878,802	1,878,802	16,181,028	10.4%	1.25
2023	172,310	194,830	2,133,865	295,245	1,150,790	8,241	18,537,160	1,196,285	1,196,285	17,340,875	6.5%	1.25
2024	177,222	200,554	2,194,694	298,473	1,197,926	8,489	19,004,841	424,225	424,225	18,580,616	2.2%	1.25
2025	182,159	855,906	2,255,845	301,192	1,247,277	8,743	19,459,300	-	-	19,459,300	0.0%	5.19
2026	187,168	1,120,161	2,317,864	303,434	1,298,323	9,006	19,897,277	-	-	19,897,277	0.0%	6.60
2027	192,328	1,166,976	2,381,774	305,588	1,350,029	9,276	20,316,755	-	-	20,316,755	0.0%	6.69
2028	197,629	1,212,373	2,447,413	307,540	1,400,447	9,554	20,717,465	-	-	20,717,465	0.0%	6.76
2029	203,204	1,257,674	2,516,455	309,660	1,451,037	9,841	21,098,000	-	-	21,098,000	0.0%	6.82
2030	208,882	1,303,417	2,586,777	311,412	1,502,163	10,136	21,455,897	-	-	21,455,897	0.0%	6.88
2031	214,699	1,348,024	2,658,815	312,803	1,552,283	10,440	21,790,111	-	-	21,790,111	0.0%	6.92
2032	220,784	1,390,593	2,734,164	314,281	1,600,624	10,753	22,100,805	-	-	22,100,805	0.0%	6.95
2033	227,199	1,430,451	2,813,613	316,009	1,646,575	11,076	22,388,962	-	-	22,388,962	0.0%	6.95
2034	233,963	1,468,539	2,897,374	318,035	1,691,094	11,408	22,654,696	-	-	22,654,696	0.0%	6.94
2035	240,885	1,492,933	2,983,095	319,982	1,722,067	11,750	22,910,295	-	-	22,910,295	0.0%	6.86
2036	248,084	1,524,279	3,072,251	322,256	1,760,260	12,103	23,147,858	-	-	23,147,858	0.0%	6.81
2037	255,567	1,552,169	3,164,912	325,046	1,795,269	12,466	23,369,889	-	-	23,369,889	0.0%	6.74
2038	263,329	1,576,103	3,261,042	328,286	1,826,592	12,840	23,579,532	-	-	23,579,532	0.0%	6.64
2039	271,326	1,598,235	3,360,074	331,875	1,856,336	13,225	23,777,869	-	-	23,777,869	0.0%	6.54

EXHIBIT VIII (continued)

50-Year Projection of Contributions, Liabilities, and Assets

Based on the December 31, 2015 actuarial valuation.
(All dollar amounts are in thousands. Employer Contributions are shown on a cash basis in the fiscal year they are actually paid, not receivable. Actuarial Liability and asset figures as of end of year.)

Fiscal Year	Employee Contributions	Employer Contributions (Cash Basis)	Pensionable Payroll	Normal Cost	Benefit Payouts	Estimated Expenses	Total Actuarial Liability	Market Value of Assets	Actuarial Value of Assets	Unfunded Actuarial Liability	Funded Ratio	Contribution Multiple
2040	$279,444	$1,617,356	$3,460,607	$335,537	$1,883,178	$13,622	$23,967,142	-	-	$23,967,142	0.0%	6.42
2041	287,806	1,632,650	3,564,161	339,452	1,906,426	14,030	24,150,669	-	-	24,150,669	0.0%	6.29
2042	296,488	1,643,764	3,671,683	344,002	1,925,801	14,451	24,332,719	-	-	24,332,719	0.0%	6.15
2043	305,484	1,649,867	3,783,086	349,330	1,940,466	14,885	24,518,905	-	-	24,518,905	0.0%	5.99
2044	314,723	1,655,353	3,897,502	355,331	1,954,745	15,331	24,710,659	-	-	24,710,659	0.0%	5.84
2045	323,880	1,658,455	4,010,898	361,367	1,966,544	15,791	24,911,012	-	-	24,911,012	0.0%	5.68
2046	333,165	1,658,894	4,125,884	367,863	1,975,794	16,265	25,123,743	-	-	25,123,743	0.0%	5.51
2047	342,587	1,657,584	4,242,559	374,823	1,983,418	16,753	25,351,970	-	-	25,351,970	0.0%	5.35
2048	352,095	1,654,491	4,360,305	382,097	1,989,330	17,256	25,598,966	-	-	25,598,966	0.0%	5.19
2049	361,686	1,654,990	4,479,078	389,618	1,998,902	17,773	25,862,607	-	-	25,862,607	0.0%	5.04
2050	371,089	1,656,865	4,595,531	396,955	2,009,647	18,306	26,142,728	-	-	26,142,728	0.0%	4.91
2051	380,504	1,658,824	4,712,127	404,323	2,020,473	18,856	26,440,514	-	-	26,440,514	0.0%	4.78
2052	390,016	1,660,444	4,829,919	411,853	2,031,038	19,421	26,757,733	-	-	26,757,733	0.0%	4.66
2053	399,634	1,662,128	4,949,026	419,498	2,041,758	20,004	27,095,807	-	-	27,095,807	0.0%	4.55
2054	409,380	1,668,749	5,069,727	427,242	2,057,525	20,604	27,451,169	-	-	27,451,169	0.0%	4.45
2055	418,993	1,676,563	5,188,768	434,692	2,074,334	21,222	27,823,720	-	-	27,823,720	0.0%	4.36
2056	428,745	1,684,301	5,309,536	442,186	2,091,187	21,859	28,214,749	-	-	28,214,749	0.0%	4.28
2057	438,644	1,692,480	5,432,128	449,757	2,108,610	22,515	28,625,133	-	-	28,625,133	0.0%	4.20
2058	448,644	1,701,096	5,555,967	457,316	2,126,550	23,190	29,055,775	-	-	29,055,775	0.0%	4.12
2059	458,784	1,711,815	5,681,531	464,929	2,146,713	23,886	29,505,944	-	-	29,505,944	0.0%	4.05
2060	468,989	1,723,237	5,807,918	472,515	2,167,624	24,602	29,976,300	-	-	29,976,300	0.0%	3.99
2061	479,311	1,735,183	5,935,739	480,141	2,189,153	25,340	30,467,759	-	-	30,467,759	0.0%	3.93
2062	489,797	1,748,241	6,065,595	487,871	2,211,937	26,101	30,980,711	-	-	30,980,711	0.0%	3.87
2063	500,419	1,762,377	6,197,135	495,643	2,235,912	26,884	31,515,579	-	-	31,515,579	0.0%	3.82
2064	511,102	1,777,238	6,329,441	503,412	2,260,651	27,690	32,073,210	-	-	32,073,210	0.0%	3.76

EXHIBIT IX.1

Comparison of Employer Contribution to Actuarially Determined Contribution

Plan Year Ended December 31	Actuarially Determined Contributions (ADC)*	Actual Contributions**	Percentage Contributed
2006	$325,913,986	$157,062,769	48.2%
2007	366,410,212	148,137,050	40.4%
2008	384,169,836	155,832,612	40.6%
2009	436,475,587	157,697,608	36.1%
2010	506,902,840	164,302,004	32.4%
2011	634,559,144	156,525,374	24.7%
2012	705,454,416	158,380,709	22.5%
2013	834,398,482	157,704,971	18.9%
2014	848,864,496	158,797,631	18.7%
2015	686,373,727	157,716,475	23.0%
2016	970,112,414	--	--

** Prior to 2015, this amount was the Annual Required Contribution (ARC). Includes pension and OPEB.*
***Receivable amount to be paid the following year.*

EXHIBIT IX.2

History of Active Member Valuation Data

Actuarial Valuation Date	Active Members	Percent Increase	Annual Salaries	Percent Increase	Average Salary	Percent Increase	Payroll Growth Assumption	CPI Chicago*
12/31/2006	33,429	(0.93)%	$1,475,877,378	4.87%	$44,150	5.86%	4.50%	0.71%
12/31/2007	34,885	4.36%	1,564,458,835	6.00%	44,846	1.58%	4.50%	4.73%
12/31/2008	32,563	(6.66)%	1,543,976,553	(1.31)%	47,415	5.73%	4.50%	(0.58)%
12/31/2009	31,586	(3.00)%	1,551,973,348	0.52%	49,135	3.63%	4.50%	2.54%
12/31/2010	30,726	(2.72)%	1,541,388,065	(0.68)%	50,166	2.10%	4.50%	1.23%
12/31/2011	31,976	4.07%	1,605,993,339	4.19%	50,225	0.12%	4.00%	2.06%
12/31/2012	31,326	(2.03)%	1,590,793,702	(0.95)%	50,782	1.11%	4.00%	1.68%
12/31/2013	30,647	(2.17)%	1,580,288,709	(0.66)%	51,564	1.54%	4.00%	0.51%
12/31/2014	30,160	(1.59)%	1,602,977,593	1.44%	53,149	3.07%	4.00%	1.48%
12/31/2015	30,683	1.73%	1,643,480,973	2.53%	53,563	0.78%	4.00%	0.00%
Average Increase/ (Decrease) Last 5 years		(0.03)%		1.29%		1.32%	4.00%	1.15%

** CPI-Chicago as of the valuation date*

EXHIBIT IX.3

History of Average Pension Benefit Payments to New Retirees[1]

Retirement Effective Date		Years of Service: 10 – 14	15 – 19	20 – 24	25 – 29	30 & Over	Total
	Average Monthly Benefit at Retirement	$1,141	$1,286	$1,577	$2,416	$3,610	$2,451
2006	Average Final Average Salary	$3,471	$2,927	$3,076	$3,716	$4,555	$3,804
	Number of Active Recipients	53	60	95	73	194	475
	Average Monthly Benefit at Retirement	$1,198	$1,381	$2,029	$2,658	$3,919	$2,800
2007	Average Final Average Salary	$3,548	$3,075	$3,796	$2,811	$4,939	$4,242
	Number of Active Recipients	54	69	94	70	229	516
	Average Monthly Benefit at Retirement	$1,293	$1,630	$2,031	$2,765	$4,129	$2,847
2008	Average Final Average Salary	$3,980	$3,565	$3,981	$4,199	$5,285	$4,491
	Number of Active Recipients	60	65	106	63	206	500
	Average Monthly Benefit at Retirement	$1,407	$1,790	$2,275	$3,255	$4,082	$2,969
2009	Average Final Average Salary	$4,664	$4,148	$4,406	$5,005	$5,209	$4,794
	Number of Active Recipients	57	75	153	92	231	608
	Average Monthly Benefit at Retirement	$1,334	$1,835	$2,215	$3,208	$4,354	$3,129
2010	Average Final Average Salary	$4,418	$4,311	$4,278	$4,945	$5,590	$4,933
	Number of Active Recipients	60	77	169	132	287	725
	Average Monthly Benefit at Retirement	$1,350	$1,981	$2,432	$3,459	$4,696	$3,361
2011	Average Final Average Salary	$4,261	$4,506	$4,661	$5,265	$6,046	$5,257
	Number of Active Recipients	66	88	193	185	311	843
	Average Monthly Benefit at Retirement	$1,295	$2,014	$2,391	$3,362	$4,506	$3,230
2012	Average Final Average Salary	$4,400	$4,893	$4,533	$5,094	$5,737	$5,125
	Number of Active Recipients	93	132	274	254	418	1,171
	Average Monthly Benefit at Retirement	$1,304	$1,998	$2,348	$3,259	$4,446	$3,065
2013	Average Final Average Salary	$4,456	$4,890	$4,314	$4,953	$5,668	$5,030
	Number of Active Recipients	104	106	204	216	290	920
	Average Monthly Benefit at Retirement	$1,169	$1,760	$2,290	$3,137	$4,350	$2,891
2014	Average Final Average Salary	$4,161	$4,528	$4,597	$4,877	$5,644	$4,921
	Number of Active Recipients	93	92	185	203	223	796
	Average Monthly Benefit at Retirement	$1,275	$1,959	$2,279	$3,405	$4,446	$3,048
2015	Average Final Average Salary	$4,439	$4,685	$4,387	$5,174	$5,724	$5,031
	Number of Active Recipients	68	119	171	180	227	765

[1] *This schedule excludes reciprocal annuities, money purchase annuities and minimum annuities.*

EXHIBIT IX.4

History of Retirees and Beneficiaries by Type of Benefit

	Annuitants				Disability		Compensation	Reciprocal	
Valuation Date	Employee	Spouse	Child	Reversionary*	Ordinary	Duty	Annuitants**	Employee	Spouse
12/31/2006	15,926	4,075	193		330	193	2	2,257	376
12/31/2007	15,899	4,042	178		304	209	2	2,299	368
12/31/2008	15,804	4,018	174		266	192	2	2,369	360
12/31/2009	15,838	4,008	167		306	220	2	2,407	356
12/31/2010	15,961	3,982	173		304	246	2	2,477	364
12/31/2011	16,230	3,910	164	129	346	264	2	2,583	364
12/31/2012	16,874	3,864	149	129	280	250	2	2,740	361
12/31/2013	17,320	3,844	141	138	227	213	2	2,793	363
12/31/2014	17,553	3,798	141	139	195	225	2	2,858	363
12/31/2015	17,697	3,757	118	134	187	213	2	2,887	369

* *Prior to December 31, 2011, reversionary annuitants were included with spouse annuitants.*

** *Compensation annuitants also included with spouse annuitants.*

EXHIBIT IX.5

History of Average Employee Retirement Benefits Payable

Valuation Date	Average Annual Benefit	Average Current Age of Retirees	Average Benefit at Retirement Current Year	Average Age at Retirement Current Year	Average Service Years at Retirement Current Year
12/31/2006	$27,028	72.1	$23,757	63.1	24.05
12/31/2007	27,960	72.4	26,910	63.1	24.60
12/31/2008	28,928	72.6	27,750	62.4	24.30
12/31/2009	29,960	72.8	29,843	62.9	23.90
12/31/2010	31,046	72.8	31,290	62.2	24.25
12/31/2011	32,269	72.7	34,513	62.1	24.86
12/31/2012	33,423	72.6	33,508	62.7	24.81
12/31/2013	34,357	72.6	31,177	63.0	23.55
12/31/2014	34,532	72.7	29,775	62.5	23.35
12/31/2015	36,277	72.8	31,686	62.6	23.48

EXHIBIT IX.6

History of Annuities 2006 – 2015

Employee Annuitants (Male and Female)			
Valuation Date	**Number of Annuitants**	**Total Annuities**	**Average Annuities**
12/31/2006	18,183	$491,452,740	$27,028
12/31/2007	18,198	508,815,996	27,960
12/31/2008	18,173	525,707,352	28,928
12/31/2009	18,245	546,628,095	29,960
12/31/2010	18,438	572,425,992	31,046
12/31/2011	18,813	607,077,636	32,269
12/31/2012	19,614	655,556,736	33,423
12/31/2013	20,113	691,021,680	34,357
12/31/2014	20,411	704,832,876	34,532
12/31/2015	20,584	746,717,052	36,277

Surviving Spouse and Reversionary Annuities			
Valuation Date	**Number of Annuitants**	**Total Annuities**	**Average Annuities**
12/31/2006	4,451	$50,672,592	$11,385
12/31/2007	4,410	51,107,748	11,589
12/31/2008	4,378	51,954,588	11,867
12/31/2009	4,364	52,884,192	12,118
12/31/2010	4,346	53,920,752	12,407
12/31/2011	4,403	54,594,060	12,399
12/31/2012	4,354	55,544,340	12,757
12/31/2013	4,345	57,041,916	13,128
12/31/2014	4,300	57,976,668	13,483
12/31/2015	4,260	58,481,052	13,728

EXHIBIT IX.7

History of Retirees and Beneficiaries Added to Payrolls 2006 – 2015

	Added to Payroll		Removed from Payroll		Payroll End of Year			
Valuation Date	Number	Annual Benefits*	Number	Annual Benefits	Number	Annual Benefits	Average Annual Benefit	Increase in Average Benefit
Employee Annuitants (Male and Female)								
12/31/2006	713	$30,424,920	751	$15,961,128	18,183	$491,452,740	$27,028	3.25%
12/31/2007	769	34,450,704	754	17,087,448	18,198	508,815,996	27,960	3.45%
12/31/2008	743	34,658,424	768	17,767,068	18,173	525,707,352	28,928	3.46%
12/31/2009	840	39,821,463	768	18,900,720	18,245	546,628,095	29,960	3.57%
12/31/2010	1,008	46,836,109	815	21,038,211	18,438	572,425,992	31,406	3.62%
12/31/2011	1,149	55,405,692	774	20,754,048	18,813	607,077,636	32,269	3.94%
12/31/2012	1,559	68,828,940	758	20,349,840	19,614	655,556,736	33,423	3.58%
12/31/2013	1,242	57,147,576	743	21,682,632	20,113	691,021,680	34,357	2.79%
12/31/2014	1,054	37,110,852	756	23,299,656	20,411	704,832,876	34,532	0.51%
12/31/2015	990	65,756,124	817	23,871,948	20,584	746,717,052	36,277	5.05%
Surviving Spouse and Reversionary Annuitants (Not Including Compensation)								
12/31/2006	265	$3,498,720	281	$2,904,360	4,451	$50,672,592	$11,385	1.55%
12/31/2007	247	3,464,400	288	3,029,244	4,410	51,107,748	11,589	1.79%
12/31/2008	260	3,989,592	260	3,142,752	4,378	51,954,588	11,867	2.40%
12/31/2009	266	3,869,064	280	2,939,460	4,364	52,884,192	12,118	2.12%
12/31/2010	269	4,329,156	287	3,292,596	4,346	53,920,752	12,407	2.38%
12/31/2011**	362	4,152,804	241	3,479,496	4,403	54,594,060	12,399	(0.06)%
12/31/2012	237	4,168,092	286	3,217,812	4,354	55,544,340	12,757	2.89%
12/31/2013	270	4,593,708	279	3,096,132	4,345	57,041,916	13,128	2.91%
12/31/2014	265	4,648,596	310	3,713,844	4,300	57,976,668	13,483	2.70%
12/31/2015	251	4,185,900	291	3,681,516	4,260	58,481,052	13,728	1.82%

* *Annual benefits added to payroll include post-retirement increase amounts.*

** *Number added in 2011 includes 121 reversionary annuitants that are also surviving spouses.*

EXHIBIT X

Actuarial Assumptions and Actuarial Cost Method

Rationale for Assumptions:	The information and analysis used in supporting each assumption that has a significant effect on this actuarial valuation is shown in the Experience Review dated January 17, 2011. Current data is reviewed in conjunction with each annual valuation. Based on professional judgment, no assumption changes are warranted at this time.
Mortality Rates:	
Post-retirement:	The RP-2000 Combined Healthy Mortality Table, with mortality improvements projected statically to 2010 using Scale AA (adopted December 31, 2010).
Pre-retirement:	Post-retirement mortality multiplied by 85% for males and 70% for females (adopted December 31, 2010). The mortality table specified above was determined to contain provision appropriate to reasonably reflect future mortality improvement (actual-to-expected ratios of 111% for male retirees and 107% for female retirees, per the experience study report dated January 17, 2011), based on a review of mortality experience as of the measurement date.

Termination Rates: These service-based rates are based on recent experience of the Fund (adopted December 31, 2010).

Service	Rate (%)	Service	Rate (%)	Service	Rate (%)
0 - 0.99	15.00	11 - 11.99	4.00	21 - 21.99	1.80
1 - 1.99	15.00	12 - 12.99	4.00	22 - 22.99	1.70
2 - 2.99	12.00	13 - 13.99	3.60	23 - 23.99	1.60
3 - 3.99	9.00	14 - 14.99	3.30	24 - 24.99	1.50
4 - 4.99	8.00	15 - 15.99	3.00	25 - 25.99	1.40
5 - 5.99	7.00	16 - 16.99	2.80	26 - 26.99	1.30
6 - 6.99	6.50	17 - 17.99	2.50	27 - 27.99	1.20
7 - 7.99	5.25	18 - 18.99	2.30	28 - 28.99	1.10
8 - 8.99	5.00	19 - 19.99	2.10	29 - 29.99	1.00
9 - 9.99	4.75	20 -20.99	1.90	30 +	0.90
10 - 10.99	4.25				

Retirement Rates:

For employees first hired prior to January 1, 2011, rates of retirement are based on the recent experience of the Fund (adopted December 31, 2010).

	Age and Service-Based Retirement Rates							
Service	**50 - 54**	**55 - 59**	**60 - 64**	**65 - 66**	**67**	**68 - 69**	**70 - 79**	**80+**
10 - 11		0%	12%	30%	30%	15%	45%	100%
12 - 19		0%	10%	15%	10%	10%	45%	100%
20 - 24		6%	10%	15%	10%	10%	45%	100%
25 - 29		12%	12%	20%	20%	20%	45%	100%
30	25%	20%	20%	20%	20%	20%	45%	100%
31 - 32	20%	20%	20%	20%	20%	20%	45%	100%
33 - 34	30%	30%	30%	30%	30%	30%	45%	100%
35 - 39	30%	30%	30%	45%	45%	45%	45%	100%
40+	100%	100%	100%	100%	100%	100%	100%	100%

For employees first hired on or after January 1, 2011, rates of retirement for each age from 62 to 80 were used (adopted December 31, 2011).

Age	**Rate**
62	40%
63 - 69	20%
70 - 79	45%
80 +	100%

Disability Benefit Valuation:

Disability benefits are valued in normal cost as 0.75% of projected payroll (adopted December 31, 2005).

Valuation of Inactive Participants:	Inactive members with less than 10 years of service are assumed to take an immediate refund of his or her account balance. For inactive members with 10 or more years of service, the money purchase benefit is estimated by projecting the account balance (including employer contributions, when applicable) to the earliest retirement age. This estimated money purchase benefit is increased by 15% to account for the possibility that the minimum annuity formula is more valuable.
Unknown Data for Participants:	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.
Spouse:	85% of members are assumed to be married, female spouses are assumed to be four years younger than male spouses, and 100% of spouses are assumed to be opposite gender (adopted December 31, 1999).
Member Contributions:	Based on payroll, adjusted to the middle of the year.
Group Health Insurance Participation:	50% of employees eligible to retire and receive postretirement welfare coverage were assumed to elect health coverage. All annuitants age 65 and older are assumed to be eligible for Medicare, and all annuitants under age 65 are assumed not to be eligible for Medicare. All current surviving spouses are assumed to be eligible for Medicare.
Net Investment Return:	7.50% per year, net of investment expense (adopted December 31, 2012)
Inflation:	3.00% per year (adopted December 31, 1999)

Salary Increases:

These service-based rates are based on the recent experience of the Fund (adopted December 31, 2010).

Service	Rate (%)
0 - 1.99	8.25
2 - 2.99	7.75
3 - 3.99	7.25
4 - 5.99	6.75
6 - 6.99	6.50
7 - 7.99	6.00
8 - 8.99	5.50
9 - 9.99	5.25
10 - 25.99	5.00
26 +	4.50

Administrative Expenses:

Equal to actual expenses for the prior year.

Actuarial Value of Assets:

Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five - year period (adopted December 31, 1999).

Actuarial Cost Method:

Entry Age Normal. Under this method, a normal cost is calculated for each employee that is the level annual contribution as a percent of pay required to be made from the employee’s date of hire for as long as he/she remains active (not past 2016 for OPEB benefits) so that sufficient assets will be accumulated to provide his/her benefit. The accrued liability is the difference between the present value of all future benefits and the present value of all future normal costs.

Changes in Assumptions:

Retirement rates for ages 60 and 61 were removed for members hired on or after January 1, 2011, in order to accommodate the retirement eligibility changes for Tier 2 members as a result of Public Act 98-0641 being ruled unconstitutional.

Expected member contributions are based on payroll adjusted to the middle of the year.

EXHIBIT XI

Summary of Plan Provisions

This exhibit summarizes the major provisions of the Fund included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Membership:	Any employee of the City of Chicago or the Board of Education employed under the provisions of the municipal personnel ordinance or any person employed by the Municipal Employees' Annuity and Benefit Fund of Chicago who is not participating in any other pension fund or retirement system is covered by the Fund. Current and former employees of the Chicago Housing Authority and the Public Building Commission who have service in this Plan or who reinstate service in this Plan, may elect to participate in this Plan with respect to their employment with the Chicago Housing Authority or the Public Building Commission under certain circumstances.
Employee Contributions:	Members of the Fund are required to contribute 8.5% of pensionable salary to the Fund as follows: 6.5% for the employee's retirement annuity, 1.5% for the spouse's annuity, and 0.5% for the automatic increases in the retirement annuity.
Tiers:	Tier 1: First hired before January 1, 2011 Tier 2: First hired on or after January 1, 2011
Final Average Salary:	For Tier 1 members, the final average salary is the average salary of the highest four consecutive years within the last 10 years of service prior to retirement. For Tier 2 members, the final average salary is the average pensionable salary of the highest eight consecutive years within the last 10 years of service prior to retirement. Pensionable salary is limited to $106,800 in 2011, increased by the lesser of 3% or ½ of the change in CPI-U, not less than zero. For 2015, the salary limit was $111,572.

Employee Retirement Annuity:

Money Purchase Formula

Eligibility	Tier 1: Age 55 and 10 years of service
	Tier 2: Age 62 and 10 years of service
Amount	The annuity is based on all employee and City contributions. However, for Tier 1 members who retire before age 60 with less than 20 years of service, the annuity is based on employee contributions plus 1/10th of the City contributions for each year of service over 10.
	Maximum is 60% of highest salary.

Minimum Annuity Formula

Eligibility	Tier 1, the earlier of: • Age 60 and 10 years of service • Age 55 and 20 years of service • Age 50 and 30 years of service
	Tier 2: Age 62 and 10 years of service
Amount	The annuity is equal to 2.4% for each year of service times final average salary.
	For Tier 1 members under age 60 with less than 25 years of service, the annuity is reduced by 0.25% for each month that the member is under age 60.
	For Tier 2 members under age 67, the annuity is reduced by 0.50% for each month that the member is under age 67.
	Maximum is 80% of final average salary.

Post-Retirement Increase:	Tier 1: An employee annuitant is eligible to receive an annual increase of 3% of the current payable annuity (compound). This increase begins in January of the year of the first payment date following the earlier of: 1) the later of the third anniversary of retirement or age 53, or 2) the later of the first anniversary of retirement or age 60 Tier 2: An employee annuitant or surviving spouse who is eligible to receive an increase in annuity benefit, shall receive an annual increase equal to the lesser of 3% or ½ of the annual unadjusted percentage increase in the Consumer Price Index-U. The increase is based on the amount of the originally granted benefit (simple). This increase begins in January of the year of the first payment date following the later of: 1) the attainment of age 67, or 2) the first anniversary of the annuity start date
Reversionary Annuity:	An employee may elect to reduce his or her annuity by an amount less than or equal to $400 to provide a reversionary annuity for a spouse, parent, child, brother, or sister, to begin upon the employee's death. The election must be made before retirement and have been in effect one year prior to death. The one-year requirement is waived if the beneficiary is the employee's spouse. The death of the employee before retirement voids this election. The reversionary annuity for a spouse when added to the spouse's annuity cannot exceed 100% of the employee's reduced annuity. The amount of the monthly reversionary annuity is determined by multiplying the amount of the monthly reduction in the employee's annuity by a factor based on the age of the employee and the difference between the ages of the employee and the reversionary annuitant at the start date of the employee's annuity.
Elected City Officer's Optional Plan:	An alternative plan for elected officials of 3% of final salary for the first eight years, 4% for the next four years, and 5% thereafter, subject to an 80% maximum, is available. The elected official must contribute an additional 3% of salary to receive these benefits. This plan also includes alternative widow and disability benefit formulas. This plan became effective upon approval from the IRS on September 17,1991.

Spouse Annuity:	The surviving spouse annuity is the greater of the annuity under the money purchase formula or the minimum annuity formula. Surviving spouses who remarry on or after September 4, 2000, will not have their annuities terminated.
Money Purchase Formula	When an employee retires, the spouse's annuity is fixed, based on employee and City contributions for the spouse's annuity and a joint life age factor. If the employee dies in service, the spouse's annuity is based on all contributions. For 3% annuities fixed on or after August 1, 1983, the "Combined Annuity Mortality Table" shall continue to be used; however, surviving spouse's single life annuities and reversionary annuities shall be computed using the best factor (the factor producing the highest annuity), without regard to gender.
Minimum Annuity Formula	If the employee retires or dies in service and is at least age 55 with 20 or more years of service, or is at least age 50 with 30 or more years of service, the spouse's annuity is equal to half the amount of the annuity the employee was entitled to receive at the time of retirement or death in service. This annuity must be reduced by 0.25% for each month the spouse is under age 55 (or age 50 if the employee had at least 25 years of service) at the time the employee retires or dies in service. If the employee dies while receiving a retirement annuity, the spouse is eligible for an annuity of one half of the employee's annuity at death. This annuity is reduced by 0.25% for each month the spouse is under age 55 (or age 50 if the employee had at least 25 years of service) at the time of the employee's death. If the employee dies in service with at least 10 years of service, the spouse is entitled to an annuity of half of the minimum formula annuity earned and accrued to the credit of the employee at the date of death. This annuity is not reduced due to the age of the employee or spouse. The spouse is eligible for this annuity only if the marriage was in effect for at least 10 years. The spouse will receive a minimum annuity of $800 per month if the employee retires with at least 10 years of service or dies in service with at least five years of service. For Tier 2 members, the annuity payable to the surviving spouse is equal to 66 2/3% of the participant's accrued retirement annuity without a reduction due to age.

Child Annuity:	A child's annuity is provided for an unmarried child of a deceased employee who is under the age of 18, if the child was born before the withdrawal from service. The annuity is $220 per month while the spouse of the deceased employee is alive and $250 per month if the spouse is deceased.
Group Health Insurance:	Retirees receive a health insurance supplement of $95 per month if not eligible for Medicare and $65 per month if eligible for Medicare. Spouses married to retirees do not receive an additional benefit. Surviving spouses may continue to receive benefits after the retiree's death. Per Public Act 98-0043, the health insurance supplement will not be provided after December 31, 2016.
Ordinary Disability Benefit:	This benefit is granted for disabilities incurred other than in performance of an act of duty and is 50% of salary as of the last day worked. The first payment shall be made one month after the disablement occurs provided the employee is not then in receipt of salary. Length of time on disability is limited to a maximum of 25% of the employee's total service or five years, whichever occurs first. The Fund contributes salary deductions for annuity purposes for the ordinary disability benefit. Such amounts contributed by the Fund after December 31, 2000, while the employee is receiving ordinary disability benefits, are not refundable to the employee and will be used for annuity purposes only.
Duty Disability Benefit:	Any employee who becomes disabled as the result of an injury incurred in the performance of any act of duty has a right to receive a duty disability benefit in the amount of 75% of salary at date of injury, plus $10 a month for each unmarried child less than age 18. Child's duty disability benefit is limited to 15% of the employee's salary as of the date of injury. Duty disability benefits begin one day after the later of the last day worked or the last day paid. If the disability has resulted from any mental disorder, physical defect or disease which existed at the time such injury was sustained, the duty disability benefit shall be 50% of salary at date of injury. Disablement because of heart attacks, strokes, or any disablement due to heart disease shall not be considered the result of an accident suffered in the performance of duty. However, the employee will receive service credit and the City will contribute salary deductions for annuity purposes if the employee is receiving Workers' Compensation.

	A duty disability benefit is payable to age 65 if the disability benefits begin before age 60. For an employee who begins disability on or after age 60, disability benefits will continue for five years. A duty disability benefit which continues for more than five years and which starts before the employee's age 60, will be increased by 10% on January 1st of the sixth year. The City contributes salary deductions for annuity purposes for the duty disability benefit. Such amounts contributed by the City after December 31, 1981, while the employee is receiving duty disability benefits, are not refundable to the employee and will be used for annuity purposes only.
Refunds:	Tier 1: An employee who resigns before age 55, or before age 60 with less than 10 years of service, is entitled to all salary deductions accumulated with interest to date of resignation, plus the 0.50% deducted for annuity increase purposes without interest. Tier 2: An employee who resigns before age 62 without regard to length of service, or who resigns with less than 10 years of service regardless of age, is entitled to all salary deductions accumulated with interest to date of resignation, plus the 0.50% deducted for annuity increase purposes without interest. Amounts contributed by the employee, excluding the 0.50% deductions for annuity increase, that have not been paid out as annuity are refundable to the employee's estate with interest to the date of retirement or death, if the employee died in service. If the annuity of an employee or spouse is less than $800 a month, the employee or spouse may elect to receive a refund in lieu of an annuity. If unmarried at the time of retirement, the employee is entitled to a refund, with interest, of contributions made for the spouse's annuity.
Plan Year:	January 1 through December 31
Changes in Plan Provisions:	Public Act 98-0641 was ruled unconstitutional by the Illinois Supreme Court. As a result, liabilities for this valuation are calculated as if the changes in the Act were never effective.

EXHIBIT XII

Legislative Changes in Plan Provisions

1979 Session

SB 964

- Disability benefit for chronic alcoholism, pregnancy, or childbirth.

HB 1023

- Reciprocal Act: changes proportionate pension credits under the "alternative formula."

HB 2012

- Under IRS Code Section 414(h), employer may pick up the employee contributions for all compensation earned after December 31, 1980, by a reduction in the cash salary or an offset to a future salary increase or by a combination of both.

1980 Session

HB 3635

- Reversed all changes made by HB 2012 and put the pick-up section as a new paragraph; they are treated as employee contributions for all purposes, including refunds and determination of the tax levy.

Spring 1981 Session

SB 21

- Actuarial Reporting Standards.

SB 851

- Authorizes investments in conventional mortgage pass-through securities.

SB 879

- Financial statement required by Department of Insurance within 6 months and actuarial statement within 9 months; $100 penalty per day if late.

HB 212

- Eliminates refund of City contributions made while an employee is receiving duty disability benefits.

HB 213

- $200 refund in lieu of annuity.

HB 215

- Authorizes securities lending.

Spring 1982 Session

SB 1147

- Minimum reporting and actuarial information for 1984.

SB 1180

- Board of Education may incur an obligation to "pick up" employee contributions. These contributions may be paid by a special Pension Contribution Liability Tax. If levied, no payment is required until actual collection of the tax.

SB 1452

- Provides that an active member of the General Assembly who was employed by the City of Chicago by temporary appointment or in an exempt position, and could have elected to participate in the Fund but did not so elect, may establish credit for such service by making the required contribution.

SB 1579

- Expanded fiduciary standards, prohibited transactions, civil action may be brought by Attorney General or by a participant; list of permitted investments moved to general section of the statute.

HB 740

- Pension credit may be established for services rendered for a transportation system operated by a public utility prior to the establishment of the CTA.

HB 2286

- Allows persons who withdrew from service or became eligible for survivors' benefits in 1981 and who receive a monthly annuity between $100 and $200 to elect a refund in lieu of annuity.

Spring 1983 Session

SB22

- Delegation of investment authority restrictions.

HB 380

- Maximum survivor annuity from $400 to $500; 10% increase in duty disability benefit January 1 of the sixth year.

HB 514

- 10% prudent person investment category.

HB 637

- Allows an active member of the General Assembly to establish credit in this fund for time for which he or she could have elected to participate with interest at 6% and to transfer credits to the Park Fund.

HB 1144

- Revises provision allowing a person who withdrew from service or began receiving a widow's annuity in 1981 to elect to receive a refund in lieu of annuity by extending the deadline for election by one year to March 1, 1984, and by raising the amount subject to refund to $250 per month.
- 3% post-retirement annuity increase for those who qualify.
- Mandatory coverage for all employees in temporary positions.
- Reversionary annuity revisions - table of factors.
- Credit for Executive Director of Chicago Land Clearance Commission or Chicago Dwellings Association or for service as administrator of Illinois--Indiana Bi-State Commission--if certain contributions are made before April 1, 1984.

Federal Law and Regulation or Supreme Court Decision

- For an employee under the age of 70 who commences disability on or after attainment of age 60 in service, the ordinary disability benefit payments shall not exceed in the aggregate throughout the employee's service a period equal to 1/4 of the total service rendered prior to the date of the disability but no more than five years or age 70, whichever is earlier. The duty disability payments shall be payable for a period of five years or age 70, whichever occurs first.
- For 3% annuities fixed on or after August 1, 1983, the "Combined Annuity Mortality Table" shall continue to be used; however, widows' single life annuities and reversionary annuities shall be computed using the best factor (the factor producing the highest annuity, not depending upon sex).

1984 Session

- Illinois Public Employees' Pension Laws Commission abolished.

1985 Session

HB 561

- 1.80, 2.00, 2.20, 2.40% benefit accrual rate for those born before January 1, 1936, and retiring after July 18, 1985.
- Reduction in age discount factor (employee and widow) from 0.5% to 0.25% for employees born before January 1, 1936, and retiring after July 18, 1985.
- Health insurance supplement up to $25 per month if the employee is age 65 or older with at least 15 years of service (for each employee annuitant in receipt of annuity and for each employee who retires on annuity in the future).

- Disability provisions extended to age 70 in certain cases.
- Unisex money purchase factors for widows/widowers.
- Membership provisions extended to age 70.
- Board of Education employee contribution "pick up" included in the definition of salary for contribution and benefit purposes (retroactive).

1986 Session

HB 2630

- Beginning for retirement or death in service on or after January 23, 1987, the spouse dollar cap is eliminated.
- Beginning for retirement on or after January 1, 1987, the first annuity increase will begin on the first annuity payment date following the first anniversary of retirement or age 60 if later.

1987 Session

HB 2715

- 1.80, 2.00, 2.20, 2.40% benefit accrual rates for those born on or after January 1, 1936, and retiring on or after January 1, 1988.
- Reduction in an age discount factor (employee and widow) from .5% to .25% for employees born on or after January 1, 1936, and retiring or dying in service on or after January 1, 1988. No discount for employee age less than 60 if employee has at least 35 years of service.
- Minimum employee annuity of $250 and minimum spouse of $200 under certain conditions.
- Elimination of cap on maximum widow's annuity for spouses of certain retired employees with repayment of any "excess spouse" refund.
- Change amount of children's benefits to $120 or $150, effective January 1, 1988.
- Provides for certain "Good Government" initiatives.

1988 Session

- No legislative changes.

1989 Session

SB 95

- Signed August 23, 1989. Changed the amount of fund paid health insurance "supplement" from January 1, 1988 until December 31, 1992 to $65 per month for each annuitant not qualified to receive Medicare benefits (and $35 if qualified) and from January 1, 1993 until December 31, 1997 the amounts are $75 and $45, respectively. Widows will now be supplemented and employee annuitants will no longer be required to meet the age 65 and 15 years of service requirements. The City will be required to pay 50% of the aggregated cost of health care claims for the retired group under all health care plans offered by the City. A procedure was established for the City to determine, with the help of an independent actuary, the aggregate cost of claims and premiums for each calendar year from 1989 through 1997 for the retired group.

HB 332

- Signed August 23, 1989. Eliminated age-related discriminatory provisions as required by Federal law or regulation. Provided for Age Discrimination changes effective January 1, 1988 to eliminate age 65 requirements for marriage in service and children's benefits, provided contributions after age 65 for spouse benefits, provided employee accumulation annuities be computed after age 70, provided employee and spouse accumulation annuities not be "fixed" at age 65, provided no age 70 restriction on disability benefits, provided for active members over age 65 that their accounts be "unfixed" and accumulate interest until the date of withdrawal, and provided that there be no age 70 membership limitation and removed the permitted "no spouse" refund at age 65.
- Allow for local labor officials on a leave of absence from the Fund to contribute for their service as a local labor official.

1990 Session

SB 136

- Amends Chapter 120, Paragraph 671 of the Revenue Act to provide for a separate listing on the tax bill of the dollar amount of tax due from the person assessed which is allocable to a tax levied under the Illinois Pension Code, or any other tax levied by a municipality or township for public pension or retirement purposes. Effective January 1, 1990.

SB 1951

- Signed January 14, 1991. Beginning for withdrawals on or after January 1, 1991, annuity payments will be made as of the first day of the calendar month during the annuity payment period.
- 2.2% benefit accrual rate for employees retiring on or after July 1, 1990.
- No discount for employee age less than 60 if employee has at least 30 years of service and retires on or after July 1, 1990.

- Minimum employee annuity of $350 and minimum spouse of $300 under certain conditions.
- Spouses and widows of employees retiring or dying in service on or after July 1, 1990 with 20 or more years of service at age 55 or over will be eligible for half of the employee's annuity discounted .25% for each month the spouse or widow is less than 55.
- Retroactive eligibility for 35 years no discount and spouse and widow annuities computed as half of employee annuity.
- Refund in lieu of $300 annuity.
- Disability benefit retroactive one year from application; duty disability deductions in lieu for heart attack or stroke.
- An alternative plan for elected officials of 3% of salary for the first 8 years, 4% for the next 4 years and 5% thereafter, subject to a maximum of 80%, is available. The elected official must contribute an additional 3% of salary to receive these benefits. This plan also includes alternative widow and disability benefit formulas. This plan will become effective upon approval from the IRS.
- Collateral for securities lending expanded.
- Fractional payment for refund repayment and temporary service authorized. Credit established by fractional payment shall be earliest service for which credit may be established.

1991 Session

HB 971

- Signed November 19, 1991. Eligibility for the alternative plan for elected officials was extended to persons who hold office as a City officer on April 30, 1991 until 30 days after the date the plan takes effect, notwithstanding the ending of his term of office prior to that effective date.

1992 Session

SB 1650

- Signed January 25, 1993.
- Transfer provisions for County elected officers and judges.
- Early Retirement Incentive was created for withdrawals from December 31, 1992 to June 30, 1993.
  - Requires a total of 20 years of service (with at least 10 in this fund, 5 in a Reciprocal fund and up to 5 purchased under ERI).
  - Requires age 55 or older.
  - Requires an election form to be filed before June 1, 1993.
  - Retired under this Article.
  - Provides for elimination of the age discount for employees 55-60.

- Provides for 80% maximum final average salary compared to the present 75%.
- Provides for an optional purchase of up to five years of service credit for 4.25% of the November 1, 1992 salary.
- Provides for a 24-month option to pay for ERI service.
- Provides for a tax levy derived from ERI contributions.

1993 Session

- No legislative changes.

1994 Session

- No legislative changes.

1995 Session

SB 114

- Approved July 14, 1995.
- The amount of earnings that may be taken into account by any retirement system is limited to the maximum dollar limitation specified in Section 401(a)(17) of the Internal Revenue Code, except for persons who became Members before 1996.
- The Plan is authorized to make certain involuntary distributions required by Section 401(a)(9) of the Internal Revenue Code.

SB 424

- Approved July 7, 1995.
- The Pension Laws Commission was created as a legislative support services agency.

1996 Session

SBJPA

- On August 20, 1996, the Small Business Job Protection Act was signed by President Clinton.
- Treatment of governmental plans under Code Section 415:
  - Rule limiting annual benefit to 100 percent of the average of the highest three-year compensation no longer applies.
  - Excess benefit plans are permitted to provide Members with benefits in excess of the Code Section 415 limits.
  - Early retirement reduction does not apply to certain survivor and disability benefits.
  - The definition of compensation now includes elective deferrals.
  - Taxation of distributions:

- $5,000 death benefit exclusion was repealed for deaths after August 20, 1996.
- Five-year averaging for lump sum distributions was repealed effective January 1, 2000.
- Annuity payments will be taxed according to a simplified general rule, which uses investment and age as of annuity starting date for annuities, which start on or after November 19, 1996.

1997 Session

HB 15

- Approved June 27, 1997.
- For withdrawals from service occurring on or after July 1, 1990, an alternate method of calculating salary using the annual equivalent of average salary instead of the salary rate applicable for the greatest part of the year is allowed.
- Annuities effective on or after January 1, 1998, will be payable on the first day of the calendar month.
- The prudent person rule for investing is allowed.
- An eligible employee is allowed to contribute for all periods of temporary service while still in City service, for up to 90 days after withdrawal from City service, or while in reciprocal service.
- The Board is allowed to adopt rules prescribing the manner of repaying refunds and purchasing any optional credit including accepting rollovers for payments.
- The City is allowed to use deposits from any legal source (including borrowing) in lieu of all or part of the tax levy on or after June 27, 1997.

HB 313

- Approved June 27, 1997. For withdrawals from service occurring on or after June 27, 1997, an employee (or surviving spouse) age 50 or over with at least 30 years of service is eligible to receive an annuity based on the minimum annuity formula.
- For withdrawals from service occurring on or after June 27, 1997, an employee under age 60, with at least 25 years of service, is not subject to an age discount.
- The surviving spouse of a retiree dying on or after June 27, 1997, while receiving an annuity is eligible for one-half of the employee's annuity at death, discounted for spouse's age under 55 at the time of employee's death.
- Beginning June 27, 1997, employees already receiving annuity will receive a minimum annuity of $550 for life (reciprocal annuitants must have at least five years of Municipal service). Any future employee annuitant withdrawing from service after attainment of age 60 with 10 or more years of service would qualify for this minimum.
- Beginning June 27, 1997, widow(er)s already receiving annuity will receive a minimum annuity of $500 for life (reciprocal annuitants must have at least five years of Municipal service). For future spouses of retirees, 10 years of service is required. For spouses of employees dying in service in the future, five years of service is required.

- Beginning June 27, 1997, the child's annuity will be increased to $220 per month if the spouse of the deceased employee parent survives or $250 per month if no such spouse survives.
- Coverage in the City group health insurance is extended through June 30, 2002, with some modification in the plans offered. Pension plan supplement remains $45 and $75 for Medicare eligible and non-Medicare eligible annuitants respectively.
- Spouses of employees dying in service after age 50 on or after June 27, 1997, will be eligible to receive 50 percent of the annuity that the employee would have received. This annuity will be reduced by 0.25 percent per month for each month that the spouse is below the age of 55.
- Spouses of employees dying after retirement on or after June 27, 1997, will be eligible to receive 50 percent of the employee's annuity at death. This annuity will be reduced by 0.25 percent per month for each month that the spouse is below the age of 55.

HB 1641

- Approved August 22, 1997.
- Beginning August 22, 1997, for surviving spouses of employees who retired or died in service before January 23, 1987, the previous $300, $400, or $500 maximum spouse annuity limitation is removed. If an excess spouse refund was paid, it must be repaid with interest.
- Service paid under Section 8-230 can be counted for ordinary disability purposes for periods of disability on or after August 22, 1997.
- Early Retirement Incentive was created for withdrawals from December 31, 1997, to June 30, 1998.
  - Requires an election form to be filed before June 1, 1998.
  - Requires a member to be a current contributor on November 1, 1997, and have not previously retired under this Article.
  - Provides for elimination of the age discount for employees age 55 to 60.
  - Provides for 80 percent maximum final average salary compared to the present 75 percent.
  - Provides for an optional purchase of up to five years of service credit for 4.25 percent of the November 1, 1997, salary.
  - Provides for a 24-month option to pay for ERI service.
  - Provides for a tax levy derived from ERI contributions.

1998 Session

HB 3515

- Approved August 14, 1998.

- Beginning January 1, 1999, the automatic increase for employee annuitants changed to 3.00 percent compounded for all past, current, and future annuitants regardless of the effective date of the annuity. Term annuities are not eligible for the increase.
- Employees withdrawing after January 1, 1999, will be eligible for the minimum formula upon attainment of age 60 if they have at least 10 years of service.
- Beginning January 1, 1999, employees already receiving an annuity as of August 14, 1998, will receive a minimum annuity of $850 for life (reciprocal annuitants must have at least five years of Municipal service). Any future employee annuitant withdrawing from service after August 14, 1998, after attainment of age 60 with 10 or more years of service would qualify for this minimum.
- Beginning January 1, 1999, widow(er)s already receiving annuity as of August 14, 1998, will receive a minimum of $800 for life (reciprocal annuitants must have at least five years of Municipal service). For future spouses of retirees dying after August 14, 1998, 10 years of service is required. For spouses of employees dying in service after August 14, 1998, five years of service is required.
- The conditions of the reversionary option were changed as follows:
  - The nullification of reversionary payment due to employee dying was reduced to 365 days after written designation was filed with the board and now applies only to parents, children, and siblings (not spouses).
  - Employees may reduce their monthly annuity by as much as $400.
  - The increased annuity for spouse may now be as much as 100 percent of the reduced employee annuity.
- Spouses and widows that are eligible for the "50 percent employee amount" will no longer have this amount reduced for under age 55 if the employee dies on or after January 1, 1998, and withdrew from service on or after June 27, 1997, and the employee retired after age 55 with at least 25 years of service or after age 50 with at least 30 years of service. The age discount will only apply if the spouse is under age 50.
- The child of an annuitant who withdraws after January 1, 1998, having attained age 50 with at least 30 years of service is eligible for a child annuity upon the death of the annuitant.
- The required employer multiple has been set at 1.25 for 1999 and beyond.
- Money deposited under 5/8-173(f) may be used by the plan for any of the purposes for which the proceeds of the tax levied by the city under this section may be used.
- An employee or former employee may pay and receive credit for all periods of full-time employment by the Public Building Commission as long as they are not receiving credit for the same service from another retirement system. Employee must pay employee and employer contributions based on the salary received from the Public Building Commission for employment. Repayment must be made before annuity begins.

- Annuitants may authorize a portion of their annuity to be withheld for payment of dues to the labor organization by which they were represented. A minimum of 25 annuitants must choose an organization for it to be included in this plan.

HB 1612

- Effective July 1, 1999, Qualified Illinois Domestic Relations Orders were recognized.

1999 Session

- No Changes.

2000 Session

HB 1583

- Approved July 6, 2000.
- An employee or widow whose annuity would amount to less than $800 per month may elect to receive a refund in lieu of annuity. Formerly, only employees and widows whose annuity would be less than $300 per month could choose a refund.
- The reversionary annuity tables have been extended down to age 50 from age 55 to comply with the change in the law allowing retirement at age 50 with 30 years of service.
- The Board is allowed to pay an annuity (if the person qualifies) directly to a Medicare approved, State certified nursing home or to a publicly owned and operated nursing home, hospital, or mental institution. Each person must qualify under the provisions of this amendment.
- Annuities of widows who remarry on or after the date 60 days after the effective date of this amendment would not be terminated upon remarriage.
- For annuities effective before January 1, 1998, all annuity payments will be made on the first day of the calendar month, for the entire month without proration.

2001 Session

EGTRRA

- On June 7, 2001, the Economic Growth and Tax Relief Reconciliation Act of 2001 was signed by President Bush.
- Beginning January 1, 2002, payments for eligible optional service credits may be made with funds rolled over from a 457 deferred compensation plan or a 403(b) tax deferred annuity plan (if allowed by the 457 or 403(b) plan).

2002 Session

SB 314

- Effective July 1, 2002.

- The accrual rate for the minimum formula annuity is changed from 2.20 percent to 2.40 percent of final average salary and the maximum annuity is changed from 75 percent to 80 percent of final average salary for employees withdrawing from service on or after January 1, 2002.
- The 3.00 percent post-retirement automatic increase will now begin no later than three years after retirement for an eligible retiree (An eligible retiree is an employee annuitant, not a widow or widower annuitant, originally granted a lifetime annuity). For eligible retirees less than age 60 on the first anniversary of retirement, the 3.00 percent increase will begin at the earlier of age 60, and the latest of the following dates:
  - The third anniversary of retirement
  - The attainment of age 53; or
  - January 1, 2002

  For eligible retirees age 60 or older on the first anniversary of retirement, the 3.00 percent increase will begin on the first anniversary of retirement.

HB 5168

- Effective June 28, 2002.
- For the eligible spouse of an employee who dies in service on or after August 28, 2002, with at least 10 years of service, the annuity is no less than 50 percent of the minimum formula annuity the employee would have been entitled to based on service and salary to the date of death without regard to age eligibility requirements. This is equal to 2.40 percent of final average salary for each year of service. The employee and the spouse must have been married for ten years.
- For children of employees who die in service on or after June 28, 2002, there is no service requirement for eligibility for children’s annuity.
- The definition of “child” now includes any child adopted before employee withdraws from service and at least one year prior to the date any benefit for the child accrues. Previously the adoption also had to take place before the employee attained age 55.
- For ordinary disability benefits paid on or after January 1, 2001, the ordinary disability benefit is 50 percent of the employee’s salary at the date of disability with the amounts ordinarily contributed by the employee for annuity purposes contributed by the Plan. These contributions are not refundable.
- The pension plan subsidy for retiree health insurance was extended through June 30, 2003. For annuitants (older than child annuitants) taking the employer-provided plan, the subsidy is $75 per month if the annuitant is not eligible for Medicare, and $45 per month if the annuitant is eligible for Medicare.
- Current and former Chicago Housing Authority employees who have service in this Plan or who reinstate service in this Plan may elect to participate in this Plan with respect to their employment with the Chicago Housing Authority under certain conditions. Contributions can be made for past service as well as current service.

- Current and former Public Building Commission employees who have service in this Plan or who reinstate service in this Plan may elect to participate in this Plan with respect to their employment with the Public Building Commission under certain conditions. Contributions can be made for past service as well as current service.
- An employee with 10 years of service in this Plan may establish service credit for up to seven years of full-time employment by the Illinois Housing Development Authority.
- The City Clerk and City Treasurer may elect to establish alternative credits in the Aldermanic Plan.
- Chicago aldermen may receive an annuity at age 55 with 10 years of service or age 60 with eight years of service.
- An alderman in service on June 1, 1995, can make payments for prior service up to 30 days after the effective date, even though he might be out of service or retired.
- A member of the Plan who has service in Police Fund may apply to Police to transfer his credits and service to Municipal under certain conditions. This must be done within 90 days of the effective date. Employee and employer contributions will be transferred.

2003 Session

SB 1701

- Effective July 1, 2003.
- The healthcare benefits were extended and increased to $85 per month for non-Medicare eligible participants and $55 per month for Medicare eligible participants for the period from July 1, 2003, through June 30, 2008. Thereafter, the benefits are extended and increased from $85 to $95 and $55 to $65 for the period July 1, 2008, to June 30, 2013.
- The healthcare benefits referred to above are not and shall not be construed to be pension or retirement benefits for the purposes of Section 5 of Article XIII of the Illinois Constitution of 1970.

2004 Session

HB 600

- Effective January 16, 2004.
- Early Retirement Incentive was created for withdrawals from January 31, 2004, to February 29, 2004 (or to May 31, 2004, for those deemed critical employees).
  - Requires an election form to be filed before January 31, 2004.
  - Requires a member to be a current contributor who has not previously retired under this Article and satisfy one of the following:
    - Active as of October 15, 2003
    - Returned to active from approved leave of absence prior to December 15, 2003
    - Receiving ordinary or duty disability benefits as of October 15, 2003

    - Restored to service by January 31, 2004, after having been involuntarily laid off
  - Requires that employees that re-enter service forfeit their right to receive benefits and will have their benefits recalculated at the time of retirement excluding the benefits provided under the ERI.
  - Requires that the participant is age 50 with ten years of creditable service in this Fund and have 70 combined years of age and service, with service in one or more systems under the Reciprocal Act (excluding service purchased under the ERI).
  - Provides for elimination of the age discount for employees younger than age 60.
  - Provides for an optional purchase of up to five years of service credit for 4.25 percent of the monthly salary rate in effect October 15, 2003.
  - Provides for a 24-month option to pay for ERI service.
  - Provides for the exclusion of ERI contributions from the base from which the tax levy is derived.
  - Allows Board members to continue until the end of their terms without forfeiting the benefits provided by the early retirement incentive.
  - Provides for a lump sum benefit option of 100 percent of salary at retirement and an actuarially reduced monthly annuity for those employees who were eligible for the maximum benefit (excluding purchased service under the ERI).
- Automatic increases in annuities will now take effect in the January of each year in which they are to be provided.
- An employee who previously withdrew contributions from the Fund, may have his rights under the Fund restored after repaying the withdrawn contributions with interest after completing the required amount of service after the date of refund. The required service is:
  - 90 days of service under this Fund or
  - Two years of service under any participating Fund under the Reciprocal Act.
- Municipality credits earned in this Fund shall be transferred to the Firemen’s Annuity and Benefit Fund of Chicago with 11.00 percent interest compounded annually to the date of the transfer for former paramedics who are now covered under the Firemen’s Annuity and Benefit Fund.
- Employees may elect to have their optional contributions “picked-up” by the employer, to be treated as employer contributions for tax purposes. The employee election is irrevocable.
- For the eligible spouse of an employee who died in service on or after January 1, 2002, and before August 28, 2002, with at least 10 years of service, the annuity is no less than 50 percent of the minimum formula annuity the employee would have been entitled to based on service and salary to date of death without regard to age eligibility requirements. This minimum formula annuity is equal to 2.40 percent of final average salary for each year of service. The employee and spouse must have been married for ten years.

2005 Session

SB 23

- Approved June 27, 2005.
- Prohibits the investment or deposit from the retirement system or pension fund to certain entities doing business in or with the government of the Republic of the Sudan. Fund managing companies must certify that under Section 1-110.5 of the pension code that they have not loaned to, invested in, or otherwise transferred any of the pension fund assets to a forbidden entity.

SB 253

- Approved August 4, 2005.
- Provides, that to qualify as an “emerging investment manager”, the maximum value of an investment portfolio that a manager manages is $2,000,000,000 (was $400,000,000).

SB 1446

- Approved August 22, 2005.
- Provides for various changes in provisions and procedures concerning Qualified Illinois Domestic Relations Orders. Allows for alternate payee’s benefit to be based on a percentage of employee’s benefit. Effective July 1, 2006.

HB 227

- Approved August 22, 2005.
- Provides a benefit to a spouse married to the employee after retirement under certain conditions.

2006 Session

- No Changes.

2007 Session

HB 49

- Approved August 17, 2007.
- Provides that, beginning on the effective date, legally adopted children shall be entitled to the same benefits as other children, and no child’s or survivor’s benefit shall be disallowed because the child is an adopted child.

SB 1169

- Approved August 28, 2007.
- Provides that, in order for an Illinois finance entity to be eligible for investment or deposit of retirement system or pension fund assets, the Illinois finance entity must annually certify that it complies with the requirements of the High Risk Home Loan Act and the rules adopted pursuant to that Act that are applicable to that Illinois finance entity.

Requires the retirement system or pension fund to divest its assets with the Illinois finance entity if the certification is not made. Provides that these certification requirements are severable. Makes changes in the severability provisions applicable to the amendatory Act.

SB 1380

- Approved August 28, 2007.
- Amends the Illinois Municipal Retirement Fund (IMRF) and Chicago Municipal Articles of the Illinois Pension Code. Allows a sheriff's law enforcement employee under the IMRF Article to transfer service credit under the Chicago Municipal Article to the IMRF.

2008 Session

- No Changes.

2009 Session

SB 2520

- Approved February 17, 2009.
- Provides that, before any action is taken by the Board on an application for a duty disability benefit or a widow's compensation or supplemental benefit, the employee or widow shall file a claim with the employer to establish that the disability or death occurred while the employee was acting within the scope of and in the course of his or her duties. Provides an offset of disability benefits for any amounts provided to the employee or surviving spouse as temporary total disability payments, permanent disability payments, a lump sum settlement award, or other payment under the Workers' Compensation Act or the Workers' Occupational Diseases Act. Makes other changes concerning disability benefits.

HB 2557

- Approved August 25, 2009.
- Provides that it is the public policy of the State to encourage pension funds to promote the economy of Illinois through the use of economic opportunity investments within the bounds of financial and fiduciary prudence. Provides that the pension funds submit a report to the Governor and General Assembly by September 1 of each year identifying the economic opportunity investments made by the Fund, the primary location of the business or project, the percentage of the Fund's assets in economic opportunity investments, and the actions the Fund has taken to increase the use of economic opportunity investments.
- Requires the Fund to instruct the investment advisors to utilize investment strategies designed to ensure that all securities transactions are executed in such a manner that the total explicit and implicit costs and the total proceeds in every transaction are the most favorable under the circumstances.

SB 364

- Approved April 3, 2009.
- Requires Board members to file a verified written statement of economic interest annually with the office of the Clerk of Cook County.
- Requires the Board to adopt a policy that sets quantifiable utilization goals for the management of assets in specific asset classes for emerging investment managers. Goals shall be separated by minority ownership, female ownership, and person with a disability ownership.
- Requires that if at least one emerging firm(s) meet criteria of search process, at least one shall be invited to present to the Board for final consideration.
- Requires the Board to adopt a policy that sets forth goals for increasing the racial, ethnic and gender diversity of its fiduciaries, including its consultants and senior staff.
- Requires the Board to adopt a policy that sets forth goals for utilization of WMDBE firms for all contracts and services, based on the percentage of total dollar amount of all contracts let.
- Requires the Board to adopt a policy that sets forth goals for increasing the utilization of minority broker-dealers.
- Requires an annual report to the Governor and General Assembly on the utilization of “emerging firms” as defined by Article 1 of the Pension Code.
- Requires the Board to award all contracts for investment services using a competitive process that is substantially similar to the process required for the procurement of professional services under Article 35 of the Illinois Procurement Code. Requires the Board to adopt a procurement policy which will be posted on the Fund’s website and filed with the Illinois Procurement Policy Board.
- Provides that a person may not act as a consultant or investment adviser unless that person is registered as an investment adviser or bank under the federal Investment Advisers Act of 1940.
- Requires investment contracts between the Retirement Board and investment service providers to include certain required information.
- Provides consultant contracts cannot exceed five years in duration; however, incumbent consultant may compete for new contract.
- Requires investment consultants and advisers to disclose all direct and indirect fees, commissions, penalties, and other compensation paid by or on behalf of the investment consultant or adviser in connection with the services provided.
- Requires that a description of every contract let for investment services be posted on the website, including name of entity awarded the contract, amount of contract, total fees paid, and disclosure describing the factors that contributed to the selection.

- Requires the Fund to maintain a website that shall include standard investment reporting, a copy of relevant Board policies, a listing of investment consultants and managers, a notification of any requests for investment services, and the names and e-mail addresses of Board members, Fund directors, and senior staff.
- Requires Board members to attend at least eight hours of ethics training per year and requires each Board to annually certify its member's compliance and submit an annual certification to the Division of Insurance of the Department of Financial and Professional Regulation.
- Prohibits any Fund trustee or employee or their spouses or immediate family living with them to intentionally solicit or accept any gift from any prohibited source as prescribed in Article 10 of the State Officials and Employees Ethics Act, including educational materials and missions and travel expenses for discussing Fund business.
- Provides that any person who knowingly makes any false statement or falsifies or permits falsifying any record of the pension fund in an attempt to defraud is guilty of a Class 3 felony.
- Provides that no person or entity shall retain a person or entity to influence the outcome of an investment decision or the procurement of investment advice to a pension fund for compensation, contingent upon the decision of the Board.
- Requires approval for travel or education mission expense of a Trustee by a majority of the Board prior to mission.

SB 1440

- Approved August 18, 2009.
- Provides that the Fund may, and to the extent required by federal law shall, allow an employee to roll over a refund, lump-sum benefit, or other non-periodic distribution (including the non-taxable portion) directly to any entity that is designated in writing by the person, is qualified under federal law to accept the distribution, and has agreed to accept the distribution.

SB 1705

- Approved August 25, 2009.
- Provides the Municipal fund will send city contributions to the Fire fund for a fireman who was employed by the Chicago Fire Department and participated in the Municipal fund, terminated that service, and received a refund, if the employee establishes the service under the Fire fund.

2010 Session

Public Act 96-0889 (SB 1946)

- Approved April 14, 2010.
- Establishes a new tier of benefits for participants that first become members on or after the effective date of January 1, 2011.

- Final average compensation is based on the average of the highest consecutive eight years within the last ten years of service.
- Establishes a cap on final average salary of $106,800, as automatically increased by the lesser of 3 percent or one-half of the annual increase in the Consumer Price Index-U during the preceding 12-months.
- Increases eligibility for a retirement annuity:
  - Age 67 with 10 years of service for an unreduced benefit.
  - Age 62 with 10 years of service for a reduced benefit. Reduction is one-half percent for each full month that retirement precedes age 67.
- Changes provisions for automatic increases in annuity:
  - Increases begin in the year following the later of the first anniversary of the annuity start date and attainment of age 67.
  - Increases are equal to the lesser of 3 percent or one-half of the annual increase in the Consumer Price Index-U during the preceding 12-months.
  - Increases are based on the amount of the originally granted benefit (not compounded).
- Changes benefits provided to surviving spouses:
  - Surviving spouse annuity is equal to 66 2/3 percent of the participant’s earned retirement annuity at the date of death.
  - Provides an automatic increase in annuity:
    - Increases begin on January 1 in the year following the commencement of the survivor’s annuity if the deceased member died while receiving a retirement annuity and January 1 following the first anniversary of commencement otherwise.
    - Increases are equal to the lesser of 3 percent or one-half of the annual increase in the Consumer Price Index-U during the preceding 12-months.
    - Increases are based on the amount of the originally granted benefit (not compounded)
- Establishes that members that are receiving a retirement annuity and accept a full-time position under the same Article or another Article established under the Illinois Compiled Statutes would have their benefits suspended during employment. Their benefits would be recalculated, if applicable, upon termination of employment.

Public Act 96-1490 (SB 550)

- Approved December 30, 2010.
- Amends certain provisions established in SB1946 that apply to participants that first become members on or after January 1, 2011:

- Establishes the period for calculating the annual unadjusted percentage increase in the Consumer Price Index-U as the 12-month period ending with September for purposes of capping salary and calculating the automatic increase in annuity percentage.
- Establishes that the salary cap of $106,800 applies for all purposes under the Code, including the calculation of benefits and employee contributions.
- Establishes that the survivor's annuity is calculated with no reduction due to age.
- Establishes that members who withdraw before age 62, or with less than 10 years of service, regardless of age, are entitled to all salary deductions for retirement annuity and spouse annuity accumulated with interest to date of resignation, plus the 0.50 percent deducted for annuity increase purposes without interest.
- Establishes that increases in annuity for employee annuitants commence on January 1.

2011 Session

Public Act 97-0530 (SB 1672)

- Approved August 23, 2011.
- Requires all pension funds and retirement systems subject to the Code to comply with the federal Heroes Earnings Assistance and Relief Tax Act of 2008.

Public Act 97-0609 (SB 1831)

- Approved August 26, 2011.
- Applies to those members hired on or after January 1, 2012.
  - Provides that if a new hire is receiving a retirement annuity or pension and accepts a contractual position to provide services to a governmental entity from which he or she has retired, then that person's annuity or pension will be suspended during that contractual service.
  - Makes it a Class A misdemeanor for a pensioner who is seeking contractual employment to fail to notify certain persons about his or her retirement status before accepting an employment contract.

Public Act 97-0504 (HB 1670)

- Approved August 23, 2011.
- Amends the Open Meetings Act.
  - Requires each elected or appointed member of a public body subject to this Act who is such a member on the effective date of the amendatory Act to successfully complete the electronic training curriculum developed and administered by the Public Access Counselor.
  - Requires those members to complete the training not later than one year after the effective date of the amendatory Act.

- Requires each elected or appointed member of a public body subject to the Act who becomes such a member after the effective date of the amendatory Act to successfully complete the electronic training curriculum developed and administered by the Public Access Counselor.
- Requires those members to complete the training not later than the 90th day after the date the member either (i) takes the oath of office, if the member is required to take an oath of office to assume the person's duties as a member of the public body or (ii) otherwise assumes responsibilities as a member of the public body, if the member is not required to take an oath of office to assume the person's duties as a member of the governmental body.
- Requires each member who successfully completes the curriculum to file a copy of the certificate of completion with the public body.
- Provides that the failure of one or more members of a public body to complete the training required by this Section does not affect the validity of an action taken by the public body.
- Provides that an elected or appointed member of a public body subject to this Act who has successfully completed the required training and filed a copy of the certificate of completion with the public body is not required to subsequently complete that training.

2012 Session

Public Act 97-0651 (HB 3813)

- Approved and effective January 5, 2012.
- Requires any reasonable suspicion of fraud against the Fund to be reported to the State’s Attorney for investigation.
- Changes provisions for Union Leaves of Absence as follows:
  - Service credit can be accrued only for union leaves that begin before the effective date of this amendatory Act.
  - “Any pension plan established by the local labor organization” is defined as any pension plan in which the member can receive credit as a result of his membership in the local labor organization. This is a declaration of existing law.
  - Salary used for calculation of final average salary must be a salary paid by an employer, not by the union. This is a declaration of existing law.
  - Minimum annuity section 11-134 is changed to add to the final average salary the product of (1) final average salary, (2) the average percentage increase in the CPI during the leave of absence, and (3) the number of years of leave of absence. This does not seem to deal with a situation where the employee may have been on leave within the last 10 years but is last with Municipal. It also only amends paragraph (f-1) which applies to those members who go on annuity on or after the attainment of age 60.
  - Does not change that contributions are based on current salary with the union.

Public Act 97-0967 (HB 3969)

- Approved and effective August 16, 2012.
- Applies if the member retired after the effective date with less than 2 years of service in a participating system under the Reciprocal Act after General Assembly service.
- Requires that if the final average salary in a participating system is used to calculate the annuity, the employer must pay the General Assembly Retirement System for any increased cost of the General Assembly annuity that is attributable to the higher salary under the participating system.

2013 Session

Public Act 98-0043 (HB 1584)

- Approved and effective June 28, 2013
- Changes the duration of health insurance supplement payments to eligible employee annuitants to “Beginning July 1,2008, and until such time as the city no longer provides a health care plan for such annuitants or December 31, 2016, whichever comes first.”

Public Act 98-0433 (HB 2620)

- Approved and effective August 16, 2013
- Allows for an additional exception to the RFP process for obtaining investment services for “contracts for follow-on funds with the same fund sponsor through close-end funds”

2014 Session

Public Act 98-0641 (SB 1922)

- Approved and effective June 9, 2014
- Implements a funding policy designed to achieve 90% funded ratio by 2055
- Provides for incrementally increased employer contribution multiple, which eventually converts to actuarial-based funding.
- Caps the current pension levy at the full required city contribution amount.
- Creates payment obligation to the fund; provides enforcement.
- Provides for incrementally increased employee contributions.
- Tier 1: Ties annual increase in retirement annuity to inflation, subject to 3% cap, delays initial annual increase by one year, and eliminates annual increases in 2017, 2019 and 2025 for most annuitants.

- Tier 2: Reduces minimum retirement age by 2 years, delays the initial annual increase by one year for some retirees, and eliminates the annual increases in 2025.

Public Act 98-1022 (SB 452)

- Approved and effective August 22, 2014
- Requires investment managers and consultants entering into a contract to disclose information on use of vendors owned by minorities, females, and persons with disabilities.
- Requires minority consideration to be "within the bounds of financial and fiduciary prudence."
- Defines "minority investment managers" and requires funds to adopt a policy to increase goals for utilization. Requires annual review.
- Declares it is the public policy of the State to encourage use of minority investment managers.

2015 Session

Public Act 99-0462 (SB 1334)

- Approved August 25, 2015
- Sets aspirational goals that, beginning January 1, 2016, at least 20% of the total funds under management be managed by emerging investment managers and that at least 20% of the investment advisors be minorities, females, and persons with disabilities.
- Sets the aspirational goal that, beginning January 1, 2016, at least 20% of contracts for "information technology services", "accounting services", "insurance brokers", "architectural and engineering services", and "legal services" be awarded to businesses owned by minorities, females, and persons with disabilities.

Jones et al. v. Municipal Employees' Annuity and Benefit Fund of Chicago, et al.
Johnson et al. v. Municipal Employees' Annuity and Benefit Fund of Chicago, et al.

- Public Act 98-0641 was ruled unconstitutional by the circuit court on July 24, 2015. On March 24, 2016, the Illinois Supreme Court affirmed the circuit court's decision.
- Restores full automatic annual increase, the date of initial increase and eliminates increase holidays
- For Tier 2, changes retirement age for unreduced benefits back to age 67 and for reduced benefits to age 62
- Eliminates new funding policy

EXHIBIT 1

Net Pension Liability

The components of the net pension liability at December 31, 2015, were as follows:

Total pension liability	$23,358,869,625
Plan fiduciary net position	4,741,427,557
Net pension liability	18,617,442,068
Plan fiduciary net position as a percentage of the total pension liability	20.30%

Actuarial assumptions. The total pension liability was determined by an actuarial valuation as of December 31, 2015, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3.00%
Salary increases	4.50% to 8.25%, varying by years of service
Investment rate of return	7.50%, net of investment expense
Municipal bond rate	3.57%, based on the Bond Buyer 20-Bond Index of general obligation municipal bonds as of December 31, 2015
Cost of living adjustments	Tier 1: 3% compound Tier 2: the lesser of 3% or one-half of the change in CPI, simple

Post-retirement mortality rates were based on the RP-2000 Healthy Mortality Tables with mortality improvements projected to 2010 using Scale AA. Pre-retirement mortality rates were based on the post-retirement mortality assumption, multiplied by 85% for males and 70% for females.

The actuarial assumptions used in the December 31, 2015, valuation were based on the results of an experience study for the period January 1, 2005, through December 31, 2009.

Discount rate: The discount rate used to measure the total pension liability was 3.73%. The projection of cash flows used to determine the discount rate assumed member contributions will be made at the current contribution rate and that employer contributions will be made at the 1.25 multiple of member contributions from two years prior. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions and contributions from future plan members that are intended to fund the service costs of future plan members and their beneficiaries are not included. Based on those assumptions, the pension plan's fiduciary net position was not projected to be available to make all projected future benefit payments of current plan members. The projected benefit payments through 2023 were discounted at the expected long-term rate of return. Starting in 2024, the projected benefit payments were discounted at the municipal bond rate. Therefore, a single equivalent, blended discount rate of 3.73% was calculated using the long-term expected rate of return and the municipal bond index.

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability as of December 31, 2015, calculated using the discount rate of 3.73%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (2.73%) or 1-percentage-point higher (4.73%) than the current rate:

	1% Decrease (2.73%)	**Current Discount (3.73%)**	**1% Increase (4.73%)**
Net pension liability as of December 31, 2015	$22,207,242,150	$18,617,442,068	$15,675,668,794

EXHIBIT 2

Schedules of Changes in Net Pension Liability

	2015	2014
Total pension liability		
Service cost	$226,816,035	$247,243,416
Interest	909,066,895	1,025,763,903
Change of benefit terms	2,140,009,339	(1,990,706,362)
Differences between expected and actual experience	(109,835,037)	(5,504,116)
Changes of assumptions	8,711,754,654	0
Benefit payments, including refunds of employee contributions	(826,036,323)	(798,622,811)
Net change in total pension liability	$11,051,775,563	($1,521,825,970)
Total pension liability – beginning	12,307,094,062	13,828,920,032
Total pension liability – ending (a)	$23,358,869,625	$12,307,094,062
Plan fiduciary net position		
Contributions – employer	$149,225,191	$149,746,748
Contributions – employee	131,428,103	129,971,981
Net investment income	114,025,290	283,281,925
Benefit payments, including refunds of employee contributions	(826,036,323)	(798,622,811)
Administrative expense	(6,701,000)	(6,567,842)
Other	0	0
Net change in plan fiduciary net position	($438,058,739)	($242,189,999)
Plan fiduciary net position – beginning	5,179,486,296	5,421,676,295
Plan fiduciary net position – ending (b)	$4,741,427,557	$5,179,486,296
Fund's net pension liability – ending (a) – (b)	$18,617,442,068	$7,127,607,766
Plan fiduciary net position as a percentage of the total pension liability	20.30%	42.09%
Covered employee payroll	$1,643,480,973	$1,602,977,593
Fund's net pension liability as percentage of covered employee payroll	1,132.81%	444.65%

Changes in the net pension liability from the beginning of the year to the end of the year arise from the net difference between changes in the total pension liability and plan fiduciary net position that occurred during the year. Changes in net pension liability will be recognized immediately as pension expense, or reported as deferred outflows of resources related to pensions or deferred inflows of resources related to pensions, depending on the nature of the change.

Differences between actual and expected investment-related experience are recognized over a closed five-year period. Differences between actual and expected non-investment-related experience and changes of assumptions are recognized over the average of the expected remaining service lives of all members who are provided with pensions through the pension plan (active employees and inactive employees). The amounts below that are not included in pension expense for the current year are included in deferred outflows of resources or deferred inflows of resources related to pensions.

EXHIBIT 3

Reconciliation of Net Pension Liability

	Increase/(Decrease) For Fiscal Year Ending December 31, 2015		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
Balances at beginning of year	$ 12,307,094,062	$ 5,179,486,296	$ 7,127,607,766
Changes for the year			
Service cost	226,816,035		226,816,035
Interest	909,066,895		909,066,895
Differences between expected and actual experience	(109,835,037)		(109,835,037)
Contributions – employer		149,225,191	(149,225,191)
Contributions – member		131,428,103	(131,428,103)
Net investment income		114,025,290	(114,025,290)
Benefit payments, including refunds of employee contributions	(826,036,323)	(826,036,323)	0
Administrative expense		(6,701,000)	6,701,000
Change of assumptions	8,711,754,654		8,711,754,654
Changes of benefit terms	2,140,009,339	0	2,140,009,339
Net changes	11,051,775,563	(438,058,739)	11,489,834,302
Balances at end of year	$ 23,358,869,625	$ 4,741,427,557	$ 18,617,442,068

EXHIBIT 4

Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

	Year Established	Original Balance	Original Amortization Period	Amortization Amount	Outstanding Balance at December 31,2015
Outflows					
Investment	2015	$248,137,086	5	$49,627,417	$198,509,669
Assumption	2015	8,711,754,654	5*	1,742,350,931	6,969,403,723
Total outflows				**$1,791,978,348**	**$7,167,913,392**
Inflows					
Demographic	2015	$109,835,037	5*	$21,967,007	$87,868,030
Total inflows				**$21,967,007**	**$87,868,030**

* The average expected remaining service lives of all members is 5 years, determined as of January 1, 2015. This amount is equal to the total expected remaining service of 337,656 years, divided by total employees that are provided with pensions through the plan of 70,510 (as shown in the table below), rounded to the nearest integer year.

	Expected Remaining Service	Counts	Average of the Expected Remaining Service
Actives Members	337,656	30,160	11.20
Inactive Members	-	15,495	-
Retirees and Beneficiaries	-	24,855	-
Total Employees	337,656	70,510	4.79

EXHIBIT 4 (continued)

Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

At December 31, 2015, deferred outflows of resources and deferred inflows of resources related to pensions are:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	-	$87,868,030
Changes of assumptions	$6,969,403,723	-
Net differences between projected and actual earnings on pension plan investments	198,509,669	-
Total	$7,167,913,392	$87,868,030

Deferred outflows of resources and deferred inflows of resources related to pensions will be recognized as follows:

Year ended December 31:	
2016	$1,770,011,341
2017	1,770,011,341
2018	1,770,011,341
2019	1,770,011,339
2020	-
Thereafter	-

EXHIBIT 5

Pension Expense

	Fiscal Year Ending December 31, 2015
Components of pension expense	
Service cost	$226,816,035
Interest on the total pension liability	909,066,895
Projected earnings on plan investments	(362,162,376)
Contributions – member	(131,428,103)
Administrative expense	6,701,000
Current year recognition of:	
Changes of assumptions	1,742,350,931
Difference between expected and actual experience	(21,967,007)
Difference between projected and actual earnings on pension plan investment	49,627,417
Change of benefit terms	2,140,009,339
Total pension expense	$ 4,559,014,131

EXHIBIT 6

Schedule of Employer Contribution

Year Ended December 31	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Actual Employee Payroll	Contributions as a Percentage of Covered Employee Payroll
2014	$839,038,303	$149,746,748	$689,291,555	$1,602,977,593	9.34%
2015	$677,200,246	$149,225,191	$527,975,055	$1,643,480,973	9.08%

Notes to EXHIBIT 6

Valuation date	Actuarially determined contribution amount is determined as of December 31, with appropriate interest to the middle of the year.
Methods and assumptions used to establish "actuarially determined contribution" rates:	
Actuarial cost method	Entry Age Actuarial cost method
Amortization method	30-year open, level dollar amortization
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment rate of return	7.50%, net of investment expense
Projected salary increases	4.50% to 8.25%, varying by years of service
Mortality	Post-retirement mortality rates were based on the RP-2000 Healthy Mortality Tables with mortality improvements projected to 2010 using Scale AA. Pre-retirement mortality rates were based on the post-retirement mortality assumption, multiplied by 85% for males and 70% for females.
Cost of living adjustments	Tier 1: 3% compound
	Tier 2: The lesser of 3% or one-half of the change in CPI, simple
Other assumptions:	Same as those used in the December 31, 2015, actuarial funding valuations.

EXHIBIT 7

Summary of Required Supplementary Information

Valuation date	December 31, 2015
Actuarial cost method	Entry Age Normal
Amortization method	Level dollar, closed (30-year open prior to January 1, 2014)
Remaining amortization period	1 year as of December 31, 2015
Asset valuation method	N/A (Pay-as-you-go)
Actuarial assumptions:	
Investment rate of return	4.50%
Inflation rate	3.00%
Payroll growth	4.00%
Medical cost trend rate	N/A (Fixed subsidy benefit)

Actuarial Accrued Liability (AAL) and Unfunded AAL (UAAL)

	December 31, 2014	December 31, 2015
Participant Category		
Current retirees, beneficiaries, and dependents	$15,723,728	$7,433,820
Current active members and terminated members entitled but not yet eligible	1,771,213	712,926
Total	$17,494,941	$8,146,746
Actuarial value of assets	0	0
Unfunded actuarial accrued liability	$17,494,941	$8,146,746
Percent Funded	0.00%	0.00%
Unfunded AAL as a Percent of Payroll	1.09%	0.50%
Payroll	$1,602,977,593	$1,643,480,973

EXHIBIT 8-1

Required Supplementary Information – Schedule of Employer Contributions

	2009	2010	2011	2012	2013	2014	2015
1. Payroll (beginning of year)	$1,543,976,553	$1,551,973,348	$1,541,388,065	$1,605,993,339	$1,590,793,702	$1,580,288,709	$1,602,977,593
2. Current Year Normal Cost	9,365,607	9,266,349	9,154,612	4,711,272	4,529,064	5,749	26,940
3. Normal Cost as a Percent of Covered Payroll	0.61%	0.60%	0.59%	0.29%	0.28%	0.00%	0.00%
4. Level Dollar Amortization of the Unfunded Liability*	13,082,628	13,169,704	13,133,926	9,590,117	9,522,039	9,598,511	8,939,958
5. Level Dollar Amortization as a Percent of Covered Payroll*	0.85%	0.85%	0.85%	0.60%	0.60%	0.61%	0.56%
6. Interest Adjustment for Semi-Monthly Payment	518,730	518,448	515,039	330,474	324,690	221,933	207,205
7. Actuarially Determined Contribution (ADC) (NC + amortization* + interest adjustment)	22,966,965	22,954,501	22,803,577	14,631,863	14,375,793	9,826,193	9,174,103
8. ADC as a Percent of Covered Payroll	1.49%	1.48%	1.48%	0.91%	0.90%	0.62%	0.57%
9. Annual Required Contribution (ARC) (ADC - estimated employee contributions)	22,966,965	22,954,501	22,803,577	14,631,863	14,375,793	9,826,193	9,174,103
10. ARC as a Percent of Covered Payroll	1.49%	1.48%	1.48%	0.91%	0.90%	0.62%	0.57%
11. City of Chicago Contribution	9,651,118	9,549,684	9,516,053	9,522,054	9,508,087	9,050,883	8,491,284
12. City of Chicago Contribution as a Percent of Covered Payroll	0.63%	0.62%	0.62%	0.59%	0.60%	0.57%	0.53%
13. Percentage of ARC Contributed	42.02%	41.60%	41.73%	65.08%	66.14%	92.11%	92.56%

* For fiscal years prior to 2014, the amortization period is 30 years. For the 2014 fiscal year, the amortization period is three years. For the 2015 fiscal year, the amortization period is two years.

EXHIBIT 8-2

Required Supplementary Information – Schedule of Employer Contributions

Fiscal Year Ending December 31,	Annual OPEB Cost	Actual Contributions	Percentage Contributed
2007	$23,287,106	8,530,910	36.6%
2008	23,579,794	9,029,362	38.3%
2009	22,564,061	9,651,118	42.8%
2010	22,374,071	9,549,684	42.7%
2011	22,046,839	9,516,053	43.2%
2012	13,702,853	9,522,054	69.5%
2013	13,389,305	9,508,087	71.0%
2014	(13,099,951)*	9,050,883	--
2015	(15,750,459)*	8,491,284	--

*The negative costs are primarily due to the insurance subsidy ending in 2016.

EXHIBIT 9

Required Supplementary Information – Schedule of Funding Progress

Fiscal Year Ending December 31,	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b)-(a)	Funded Ratio (a)/(b)	Covered Payroll (c)	UAAL as % of Payroll [(b)-(a) / (c)]
2006	$0	$216,201,037	$216,201,037	0.0%	$1,475,877,378	14.65%
2007	0	217,868,343	217,868,343	0.0%	1,564,458,835	13.93%
2008	0	222,691,036	222,691,036	0.0%	1,543,976,553	14.42%
2009	0	224,173,231	224,173,231	0.0%	1,551,973,348	14.44%
2010	0	223,564,218	223,564,218	0.0%	1,541,388,065	14.50%
2011	0	163,241,898	163,241,898	0.0%	1,605,993,339	10.16%
2012	0	162,083,083	162,083,083	0.0%	1,590,793,702	10.19%
2013	0	27,573,334	27,573,334	0.0%	1,580,288,709	1.74%
2014	0	17,494,941	17,494,941	0.0%	1,602,977,593	1.09%
2015	0	8,146,746	8,146,746	0.0%	1,643,480,973	0.50%

EXHIBIT 10

Required Supplementary Information – Net OPEB Obligation (NOO)

Fiscal Year Ending December 31,	Annual Required Contribution (a)	Interest on Existing NOO (b)	ARC Adjustment (c)	Annual OPEB Cost (a) + (b) + (c) (d)	Actual Contribution Amount (e)	Net Increases in NOO (d) - (e) (f)	NOO as of End of Year (g)
2007	$23,287,106	$0	$0	$23,287,106	$8,530,910	$14,756,196	$14,756,196
2008	23,782,660	664,029	(866,895)	23,579,794	9,029,362	14,550,432	29,306,628
2009	22,966,965	1,318,798	(1,721,702)	22,564,061	9,651,118	12,912,943	42,219,571
2010	22,954,501	1,899,881	(2,480,311)	22,374,071	9,549,684	12,824,387	55,043,958
2011	22,803,577	2,476,978	(3,233,716)	22,046,839	9,516,053	12,530,786	67,574,744
2012	14,631,863	3,040,863	(3,969,873)	13,702,853	9,522,054	4,180,799	71,755,543
2013	14,375,793	3,228,999	(4,215,487)	13,389,305	9,508,087	3,881,218	75,636,761
2014	9,826,193	3,403,654	(26,329,798)	(13,099,951)	9,050,883	(22,150,834)	53,485,927
2015	9,174,103	2,406,867	(27,331,439)	(15,750,459)	8,491,284	(24,241,753)	29,244,174

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