

**LABORERS' AND RETIREMENT BOARD EMPLOYEES'
ANNUITY AND BENEFIT FUND OF CHICAGO**
ACTUARIAL VALUATION REPORT
FOR THE YEAR ENDING DECEMBER 31, 2016
APRIL 2017

April 7, 2017

The Retirement Board of the
Laborers' and Retirement Board Employees'
Annuity and Benefit Fund of Chicago
321 North Clark Street, Suite 1300
Chicago, IL 60654

Subject: Actuarial Certification

Dear Members of the Board:

At your request, we have performed an actuarial valuation of the Laborers' and Retirement Board Employees' Annuity and Benefit Fund of Chicago ("the Fund") as of December 31, 2016. An actuarial valuation of the Fund is performed annually. The actuarial valuation has been performed to review the funded status of the Fund as of December 31, 2016, and develop the Actuarial Determined Contribution ("ADC") for fiscal year 2017 as defined in GASB Statements Nos. 67 and 68. The assumptions and methods used were recommended by the actuary and approved by the Board. Disclosure information required under GASB Statements Nos. 67 and 68 is provided in a separate report.

We have provided the supporting schedules for the actuarial section of the comprehensive annual financial report, including:

- Active Member Valuation Data;
- Retirees and Beneficiaries Added to and Removed from Rolls;
- Solvency (Termination) Test; and
- Analysis of Financial Experience.

We have also provided the following schedules for the financial sections of the report:

- Schedule of Funding Progress; and
- Schedule of Employer Contributions.

This valuation is based upon:

- a. **Data Relative to the Members of the Fund** – Data utilized for active members and persons receiving benefits from the Fund was provided by the Fund's staff. We have tested this data for reasonableness; however, we have not audited the data.

- b. Asset Values** – The values of assets of the Fund were provided by the Fund's staff. An actuarial value of assets was used in determining the Actuarial Determined Contribution ("ADC").
- c. Actuarial Method** – The actuarial method utilized by the Fund is the Entry-Age Normal Actuarial Cost Method. The objective of this method is to recognize the costs of Fund benefits over the entire career of each member as a level percentage of compensation. Any Unfunded Actuarial Accrued Liability ("UAAL") under this method is separately amortized. All actuarial gains and losses under this method are reflected in the UAAL.
- d. Actuarial Assumptions** – The same actuarial assumptions as last year were used for this actuarial valuation. The current actuarial assumptions were first adopted for use with the December 31, 2012, actuarial valuation report.
- e. Plan Provision** – The actuarial valuation is based on plan provisions in effect as of December 31, 2016.

The funding objective is to provide employer and employee contributions sufficient to provide the benefits of the Fund when due. The provision of State Law establishing the Fund provides for employer contributions to be 1.00 times the employee contribution level in the second prior fiscal year. Thus, with an administrative lag, the employer contribution is designed to match the employee contribution in a 1:1 relationship. Employer contributions for the plan year cease when all actuarial accrued liabilities of the Fund are fully funded.

The most recent actuarial valuation of the Fund on the State reporting basis indicates that a ratio of 8.14 (rather than 1.00) is needed to adequately finance the Fund in Fiscal Year 2017 on an actuarial basis under a policy of contributing normal cost plus 30-year level dollar amortization of the unfunded liability. It should be noted that the statutory employer contributions have been less than the Actuarial Determined Contribution for the past 11 years and are again expected to be less than the ADC for 2017.

Under the current funding policy, if all future assumptions are realized and the Fund does not receive any additional contributions beyond what is prescribed, the funding ratio is projected to deteriorate until fund assets are depleted in 2027, at which point, additional funds will be required in order to pay retiree benefits.

The current statutory funding policy does not comply with generally accepted actuarial standards for the funding of retirement systems. We recommend that an actuarially based funding policy be adopted as soon as possible. If the current funding policy is not strengthened to an appropriate level in the near future, the current long-term investment return assumption of 7.50 percent may not be supportable.

The actuarial valuation results set forth in this report are based on the data and actuarial techniques described above, and upon the provisions of the Fund as of the valuation date. Based on these items, we certify these results to be true and correct. Alex Rivera and Lance J. Weiss are Members

The Retirement Board of the
Laborers' and Retirement Board Employees'
Annuity and Benefit Fund of Chicago
April 7, 2017
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of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

This report may be provided to parties other than the Fund only in its entirety and only with the permission of the Fund. GRS is not responsible for unauthorized use of this report.

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 or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

This report should not be relied on for any purpose other than the purpose stated.

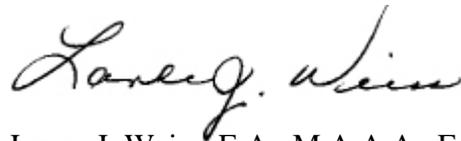
The signing actuaries are independent of the plan sponsor.

Respectfully submitted,

Gabriel, Roeder, Smith & Company



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AR/LW:rg

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SUMMARY OF ACTUARIAL VALUATION

	December 31, 2015	December 31, 2016	% Change
Actuarial Values			
Actuarial Liability	\$ 2,469,879,319	\$ 2,509,272,511	1.59 %
Assets - Actuarial Value	1,308,676,494	1,263,664,871	(3.44)%
Unfunded Liability (Surplus)	1,161,202,825	1,245,607,640	7.27 %
Funded Ratio	52.99%	50.36%	(4.96)%
Actuarial Determined Contribution (ADC) ¹	\$ 119,215,489	\$ 124,226,042	4.20 %
Market Values			
Actuarial Liability	\$ 2,469,879,319	\$ 2,509,272,511	1.59 %
Assets - Market Value	1,238,657,245	1,167,740,724	(5.73)%
Unfunded Liability	1,231,222,074	1,341,531,787	8.96 %
Funded Ratio	50.15%	46.54%	(7.20)%
Book Values			
Actuarial Liability	\$ 2,469,879,319	\$ 2,509,272,511	1.59 %
Assets - Book Value	1,131,664,961	1,068,986,041	(5.54)%
Unfunded Liability (Surplus)	1,338,214,358	1,440,286,470	7.63 %
Funded Ratio	45.82%	42.60%	(7.02)%

Actuarial Liability includes both pension and OPEB at fiscal year ending December 31, 2015, and pension liability only at fiscal year ending December 31, 2016. Pursuant to the provisions contained in P.A. 98-0043, the city terminated health insurance supplement payments to eligible annuitants as of December 31, 2016, resulting in no OPEB liability.

¹The ADC for fiscal year December 31, 2015 was determined based on a 30-year open level dollar amortization policy for pension benefits and includes the ARC under GASB Statement No. 43 for OPEB benefits, which was determined based on a one-year closed level dollar amortization policy.

SUMMARY OF ACTUARIAL VALUATION (CONT'D)

	<u>December 31, 2015</u>	<u>December 31, 2016</u>	<u>% Change</u>
Assets			
Market Value - Beginning of Year	\$1,388,092,890	\$1,238,657,245	(10.77)%
Income			
Investment Income	(22,318,476)	57,997,329	359.86 %
Employer Contributions & Misc.	14,566,544	14,443,495	(0.84)%
Employee Contributions	16,844,246	17,245,913	2.38 %
Subtotal	<u>9,092,314</u>	<u>89,686,737</u>	886.40 %
Outgo (Refunds, Benefits & Expenses)	<u>158,527,959</u>	<u>160,603,258</u>	1.31 %
Net Change	<u>(149,435,645)</u>	<u>(70,916,521)</u>	52.54 %
Market Value - End of Year	\$1,238,657,245	\$1,167,740,724	(5.73)%
Book Value - Beginning of Year	\$1,207,953,753	\$1,131,664,961	(6.32)%
Income			
Investment Income	50,828,377	66,234,930	30.31 %
Employer Contributions & Misc.	14,566,544	14,443,495	(0.84)%
Employee Contributions	16,844,246	17,245,913	2.38 %
Subtotal	<u>82,239,167</u>	<u>97,924,338</u>	19.07 %
Outgo (Refunds, Benefits & Expenses)	<u>158,527,959</u>	<u>160,603,258</u>	1.31 %
Net Change	<u>(76,288,793)</u>	<u>(62,678,920)</u>	17.84 %
Book Value - End of Year	\$1,131,664,961	\$1,068,986,041	(5.54)%
Actuarial Value - Beginning of Year	\$1,357,451,362	\$1,308,676,494	(3.59)%
Income			
Investment Income	78,342,301	83,902,227	7.10 %
Employer Contributions & Misc.	14,566,544	14,443,495	(0.84)%
Employee Contributions	16,844,246	17,245,913	2.38 %
Subtotal	<u>109,753,091</u>	<u>115,591,635</u>	5.32 %
Outgo (Refunds, Benefits & Expense)	<u>158,527,959</u>	<u>160,603,258</u>	1.31 %
Net Change	<u>(48,774,868)</u>	<u>(45,011,623)</u>	7.72 %
Actuarial Value - End of Year	\$1,308,676,494	\$1,263,664,871	(3.44)%

SUMMARY OF ACTUARIAL VALUATION (CONT'D)

	<u>December 31, 2015</u>	<u>December 31, 2016</u>	<u>% Change</u>
Members			
Actives ¹	2,816	2,822	0.21 %
Inactives	1,455	1,476	1.44 %
Retirees	2,665	2,633	(1.20)%
Survivors	1,122	1,073	(4.37)%
Reversionary Annuitants ²	27	27	0.00 %
Disabilities	239	245	2.51 %
Children	32	36	12.50 %
Payroll Data			
Valuation Payroll	\$ 204,772,903	\$ 208,154,918	1.65 %
Average Salary	\$ 72,718	\$ 73,761	1.43 %

¹Active participants include disabled employees.

²Includes 23 Reversionary Annuitants as of December 31, 2015, and 22 Reversionary Annuitants as of December 31, 2016, that are also Survivors.

DISCUSSION OF VALUATION RESULTS

This report sets forth the results of the actuarial valuation of the Laborers' and Retirement Board Employees' Annuity and Benefit Fund of Chicago as of December 31, 2016. The purposes of this actuarial valuation are:

1. To develop the Actuarial Determined Contribution for fiscal year 2017, under GASB Statements Nos. 67 and 68; and
2. To review the funding status of the Fund as of December 31, 2016.

The results of the Fund's actuarial valuation for GASB Statements Nos. 67 and 68 financial reporting purposes are provided in a separate report.

The funded status in basic terms is a comparison of the Fund's liabilities to assets expressed as either an unfunded liability or as a ratio of assets to liabilities. This comparison can be measured in various ways. Fund liabilities are dependent on the actuarial assumptions and actuarial cost method. Fund assets can be measured at market value, book value or some variation to smooth the fluctuations that invariably occur from year to year.

For Fund and City financial reports, the funding status is measured using liabilities under the Entry Age Normal funding method and the Actuarial Value of Assets. The Actuarial Value of Assets is determined by annually spreading the difference between expected and actual investment earnings over a five-year period.

Actuarial Obligations of the Fund

The value of all future pension payments, calculated using the actuarial assumptions contained in this report, is the sum of payments to two major groups of beneficiaries – the retired lives and the active lives.

1. Retired Lives:

For those currently receiving known benefits; i.e., current retirees, widows, widowers and children, the value is determined based on estimated future longevity with future benefit payments discounted to present time at the assumed investment earnings rate.

2. Active Lives:

The value of future payments for active employees who will receive benefits in the future is estimated, because the amount of pension is only known at the actual time of retirement. This estimate is made using various assumptions as to future salary increases; probable retirement age; and probability of death, withdrawal or disablement before retirement. For active employees, the goal is to have enough assets on hand at retirement to pay for all future benefits promised. To provide for an orderly accumulation of these required assets, an actuarial funding method is used. Using the "Entry Age Normal" funding method, assets are allocated as a level amount (expressed as a percentage of salary) over the employee's working lifetime. These allocated costs are called "normal costs" and are sufficient, if set aside each year, to fully fund his or her benefits when and if she or he retires. The actuarial reserve (amount of assets needed now) is the present value of future benefits less the present value of future normal costs to be paid.

DISCUSSION OF VALUATION RESULTS (CONT'D)

The difference between the sum of actuarial reserves for active and retired lives (“the Actuarial Accrued Liability”) and the Actuarial Value of Assets is called the “Unfunded Actuarial Accrued Liability.” If assets exceed the liability, there is a surplus. The unfunded liability depends upon the benefits, the characteristics of the covered group of employees and retirees, the actuarial assumptions and the actuarial funding method. The unfunded liability can be thought of as the amount of assets that will be needed in future years to provide for all future benefits payable when added to the future normal costs determined by the actuarial funding method, and current assets.

3. Actuarial Balance:

For the pension fund to be in balance (funded ratio of 100 percent), the present value of all benefits payable in the future must equal the sum of present assets plus the present value of all future contributions. If a plan is 100 percent funded, it does not mean that no contributions are ever needed again. It simply means that the plan is where it should be at a particular point in time. The assets of the plan are sufficient to provide for future benefits payable based on service to the date of valuation. **Future contributions are still needed** to fund the “normal costs” for service after the date of the valuation in order to have sufficient assets at retirement to provide the future payments of the total projected benefit.

Summary of Results

The term Annual Required Contribution (“ARC”) is no longer in the GASB Statements. However, under GASB Statements Nos. 67 and 68, the Actuarial Determined Contribution (“ADC”) is defined as:

A target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with the Actuarial Standards of Practice based on the most recent measurement date available when the contribution for the reporting period was adopted.

The ADC is presented in the financial statements as Required Supplementary Information and is compared to the actual contributions to the Fund that are calculated under the current statutory funding policy. The ADC under GASB Statements Nos. 67 and 68 for the year ending December 31, 2017, is \$124.23 million, which is for pension benefits only. This amount is net of estimated employee contributions of \$18.02 million and is based on a 30-year open amortization period.

GASB Statement No. 43 requires the calculation of a separate Annual Required Contribution (“ARC”) for Other Postemployment Benefits (“OPEB”) beginning with the Fund’s 2006 Fiscal Year. As a result of P. A. 98-0043, the city no longer provides health insurance supplement payments to eligible employee annuitants as of December 31, 2016. Therefore, the actuarial liability for OPEB benefits as of December 31, 2016, is \$0 and the determination of the GASB Statement No. 43 ARC for fiscal year ending December 31, 2017, is not needed.

Effective with Fiscal Year Ending December 31, 2014, GASB Statement No. 67 replaced GASB Statement No. 25 for pension plan financial reporting requirements. GASB Statement No. 68

DISCUSSION OF VALUATION RESULTS (CONT'D)

replaced GASB Statement No. 27 for employer financial reporting effective with fiscal year ending December 31, 2015. The significant provisions of GASB Statements Nos. 67 and 68 include:

1. Recognizing the entire Net Pension Liability (similar to the Unfunded Actuarial Liability) on the balance sheet. The Net Pension Liability is comparable to the Net Pension Obligation which was recognized under GASB Statement No. 27.
2. Use of a Single Equivalent Discount Rate based on 7.50 percent for the projected benefits for all current members that can be paid from current assets and projected investment return, future employee contributions from current members and future employer contributions attributable to current members, and a municipal bond rate for the portion of the projected benefits after assets are depleted. The applicable municipal bond rate for fiscal year end 2016 is 3.78 percent.
3. Use of Market Value of Assets to calculate Net Pension Liability.
4. Elimination of the Annual Pension Cost and replacing it with the Pension Expense, which is determined under a much shorter amortization period than 30 years.

Due to the single equivalent discount rate and shorter amortization periods required under GASB Statements Nos. 67 and 68, the unfunded liabilities and pension expense will be much higher and more volatile than under the prior standards. The measurements required under GASB Statements Nos. 67 and 68 are provided in a separate report.

The Unfunded Actuarial Accrued Liability based on the Actuarial Value of Assets increased from \$1,161.20 million to \$1,245.61 million during the year, resulting in a decrease in the funded ratio from 53.0 percent to 50.4 percent. The increase in the Unfunded Actuarial Accrued Liability is mainly attributable to unfavorable investment return on the actuarial value of assets due to the recognition of investments losses in 2014, 2015 and 2016, and contributions less than Normal Cost plus interest on the Unfunded Actuarial Accrued Liability. A more thorough examination of these and other factors can be found in the Reconciliation of Unfunded Actuarial Accrued Liability (gain/loss analysis) in Table 2 and the Reconciliation of Funded Ratio in Table 2A.

Based on the Market Value of Assets, the Unfunded Actuarial Accrued Liability increased from \$1,231.22 million to \$1,341.53 million, and the funded ratio decreased from 50.2 percent to 46.5 percent.

According to the 50-year projections provided in Table 4 of this report, the funded ratio is projected to decline from 50.4 percent in 2016 to 0.0 percent in 2027. An important and concerning fact to note is that the Fund is in a significant negative cash flow position. For example, in 2017, the sum of employee and employer contributions is projected at \$32,440,000 while benefit payments are projected at \$160,581,000. Given this negative cash flow situation and the funding policy, the ability to achieve higher returns over the long term is in jeopardy because assets may need to be liquidated in order to pay annual benefits. This could result in a change in the asset allocation to one comprised of a larger percentage of short term investments, and the Fund may no longer be able to support the current 7.50 percent investment return assumption.

DISCUSSION OF VALUATION RESULTS (CONT'D)

Plan Membership

The major characteristics of the data on the members of the Fund are summarized as follows:

	<u>December 31, 2015</u>	<u>December 31, 2016</u>
Active Members¹		
Number	2,816	2,822
Vested	2,081	2,019
Non-vested	735	803
Average Age	47.5	47.7
Average Service	15.6	15.7
Average Annual Salary	\$72,718	\$73,761
Inactive Members		
Number	1,455	1,476
Average Age	57.7	58.4
Average Service	2.2	2.3
Retirees		
Number	2,665	2,633
Average Age	69.9	70.3
Average Annual Benefit	\$47,474	\$49,062
Surviving Spouses		
Number	1,122	1,073
Average Age	77.6	77.6
Average Annual Benefit	\$14,618	\$15,129
Reversionary Annuitants²		
Number	27	27
Average Age	71.5	71.3
Average Annual Benefit	\$6,158	\$6,058
Children	32	36
Total Members	8,117	8,067

¹Active members include disabled employees.

²Includes 23 Reversionary Annuitants as of December 31, 2015, and 22 Reversionary Annuitants as of December 31, 2016, that are also Survivors.

Total participants receiving benefits under the Fund, including disability, surviving spouses, reversionary annuitants and children, decreased 1.74 percent during 2016, from 4,085 to 4,014, Total expenditures for benefits increased from \$152 million in 2015 to \$154 million during 2016, or 1.32 percent.

DISCUSSION OF VALUATION RESULTS (CONT'D)

Changes in Provisions of the Fund

The following Public Acts were passed in 2016 by the 99th General Assembly that made changes to the Fund Provisions.

There were no significant Public Acts passed in 2016 that made changes to the Fund provisions. However, Senate Bill 2437, which included changes to the funding policy and created a new tier of benefits for member's hired on and after January 1, 2017, was passed by the Illinois House of Representatives on December 1, 2016, and the Illinois Senate on January 9, 2017. On March 24, 2017, the Governor vetoed Senate Bill 2437. This actuarial valuation does not reflect the provisions of Senate Bill 2437.

A detailed description of the provisions of the Public Acts passed in prior years can be found in the Historic Information section of this report.

Discussion of Actuarial Assumptions

Actuarial assumptions are used to project future demographic and economic expectations for purposes of valuing the liabilities of the plan. The assumptions should reflect current patterns; however, their primary orientation is the long-term outlook for each factor affecting the valuation. Thus, while actual experience will fluctuate over the short run, actuarial assumptions are chosen in an attempt to model the future long term experience.

There are two general types of actuarial assumptions:

1. **Demographic Assumptions** – reflect the flow of participants into and out of a retirement system; and
2. **Economic Assumptions** – reflect the effect of the economic climate on a retirement system.

Demographic assumptions can be readily studied over recent plan experience. Economic assumptions can be studied against recent experience; however, future experience is more likely to be a result of outside factors than of plan specifics. The most significant demographic assumptions are active turnover, retirement and post-retirement mortality. The most significant economic assumptions are pay increases, investment return and inflation. Other actuarial assumptions include disability incidence, active mortality and percent married.

The actuarial assumptions used for this report are based on the results of the experience study performed for the period January 1, 2004, through December 31, 2011. Before the next actuarial valuation as of December 31, 2017, we recommend performing an experience review based on the census data for the five-year period beginning on January 1, 2012, and ending on December 31, 2016. The purpose of this review is to compare economic and demographic experience against the actuarial assumptions used in the actuarial valuations. As part of this study, all economic and demographic assumptions, including the investment return and mortality assumptions, will be reviewed and updated.

DISCUSSION OF VALUATION RESULTS (CONT'D)

Experience Analysis

The Fund had an investment loss in 2016 of \$30.2 million relative to the 7.50 percent expected rate of return, on a market value of assets basis. The loss on an actuarial value of assets basis relative to the 7.50 percent expected rate of return was \$9.5 million.

Individual salary increases varied among plan participants, but the overall increase was lower than anticipated by the actuarial assumptions, resulting in an experience gain of \$11.8 million.

Combined City and employee contributions were less than Normal Cost plus interest on the Unfunded Actuarial Accrued Liability, which resulted in an increase in the Unfunded Actuarial Accrued Liability of \$95.6 million. Contributions lower than Normal Cost plus interest have increased the Unfunded Actuarial Accrued Liability for the past 13 years.

There was an additional gain of \$8.9 million from all other factors, including actual retirement, termination, disability, mortality experience and data changes. This is about 0.36 percent of the liabilities at December 31, 2016, which is a reasonable variation.

Tables 2 and 2A summarize the experience gains and losses for the year.

Funding Analysis

The charts beginning on page 11 summarize the various measures of benefit security (funded ratio) examined in this valuation and highlight the trends of the measures.

Conclusion

When measured using the Actuarial Value of Assets, which smooths gains and losses over a five-year period, the funded ratio decreased from 53.0 percent in 2015 to 50.4 percent in 2016. On a market value of assets basis the funded ratio decreased from 50.2 percent in 2015 to 46.5 percent in 2016. There are deferred asset gains and losses that will be recognized in the Actuarial Value of Assets in the next four years. Therefore, the funded ratio using the Actuarial Value of Assets is expected to decrease slightly toward the funded ratio using the Market Value of Assets. Contributions continue to be insufficient to adequately finance the plan, and will result in further decreases in the funding ratio. Under the current funding policy, if all future assumptions are realized, the funding ratio is projected to deteriorate until assets are depleted in fiscal year 2027. Stated another way, the funded ratio is projected to decrease each year from 50.4 percent as of 2016 to 0.0 percent as of 2027.

The current statutory funding policy and resulting negative cash flow impact the ability to achieve higher returns over the long term because assets may need to be liquidated in order to pay annual benefits. This could result in a change in the asset allocation in the future to more liquid assets with a lower return. We recommend that the funding policy and assumed investment return be reviewed every year. If the current funding policy is not strengthened to an appropriate level in the near future, the current long-term investment return assumption of 7.5 percent may not be supportable.

The statutory funding policy could be strengthened by changing to an Actuarial Determined Contribution based funding approach with an appropriate amortization policy.

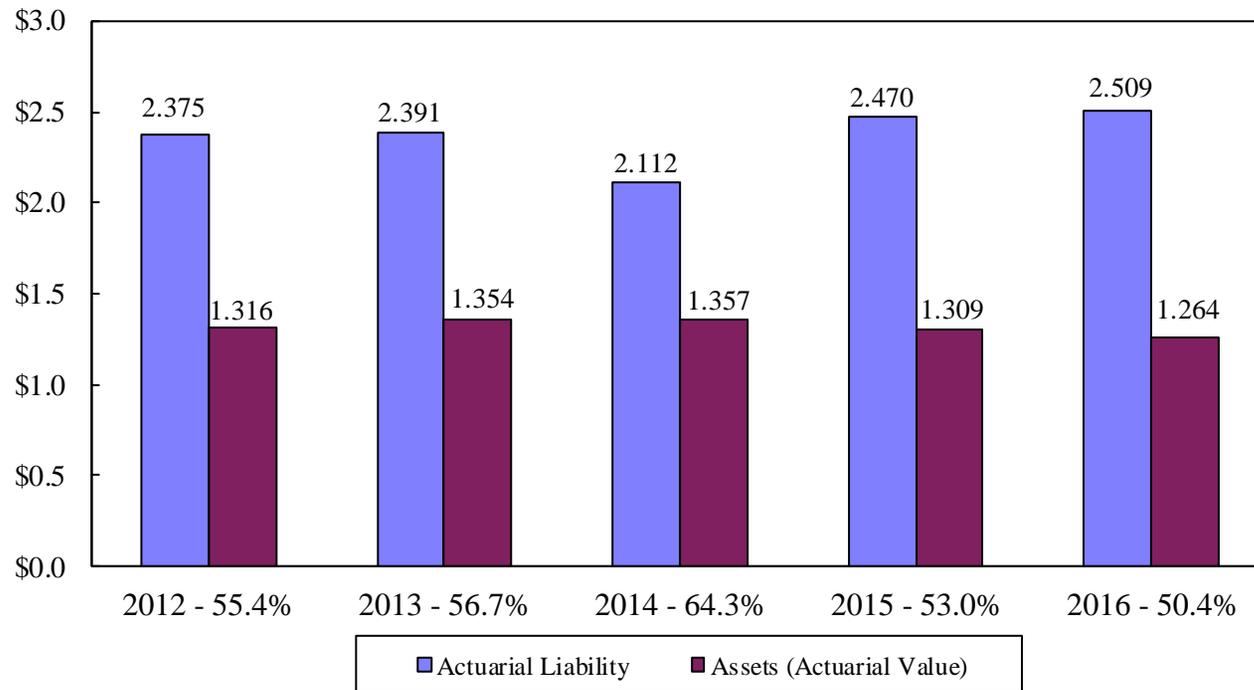
DISCUSSION OF VALUATION RESULTS (CONT'D)

In 2014, the Society of Actuaries Blue Ribbon Panel on Public Pension Plan Funding and Conference of Consulting Actuaries Public Plans Community both issued reports on public plan funding. Some of the common elements in those reports are to:

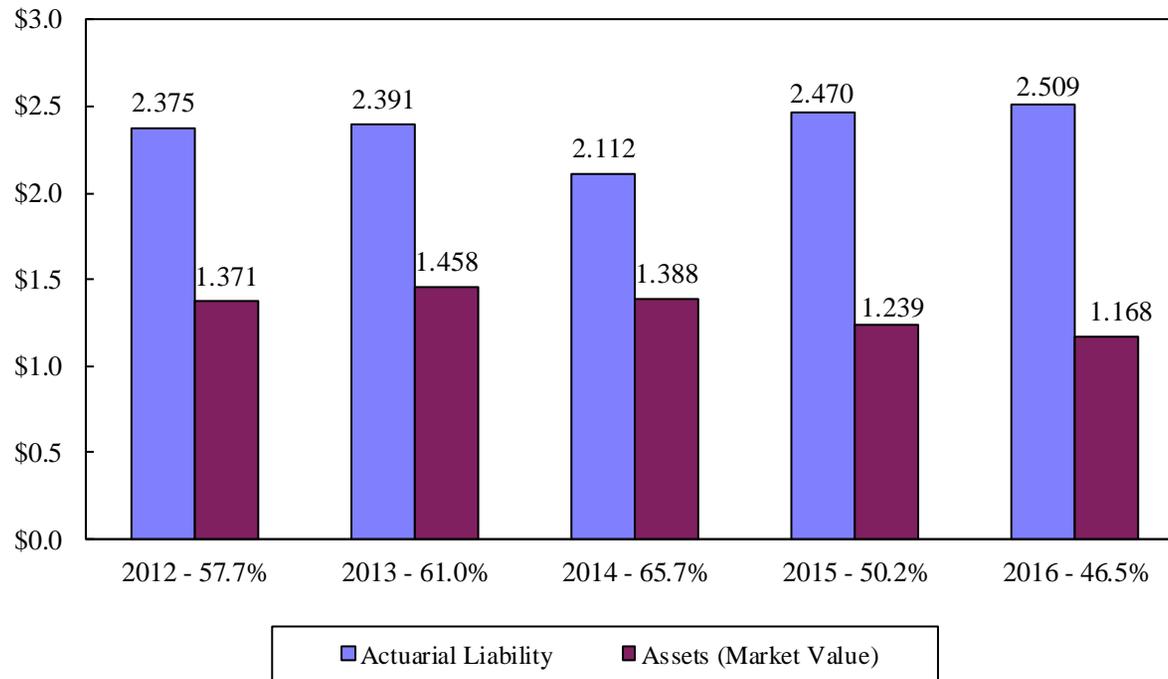
1. Establish a Funding Policy using Actuarial Determined Contributions;
2. Target 100 percent funded; and
3. Shorten the amortization period to 15 to 20 years to avoid negative amortization of the unfunded actuarial accrued liability.

Finally, we strongly recommend that stress testing be performed and we will work with the Fund on developing specific stress testing scenarios.

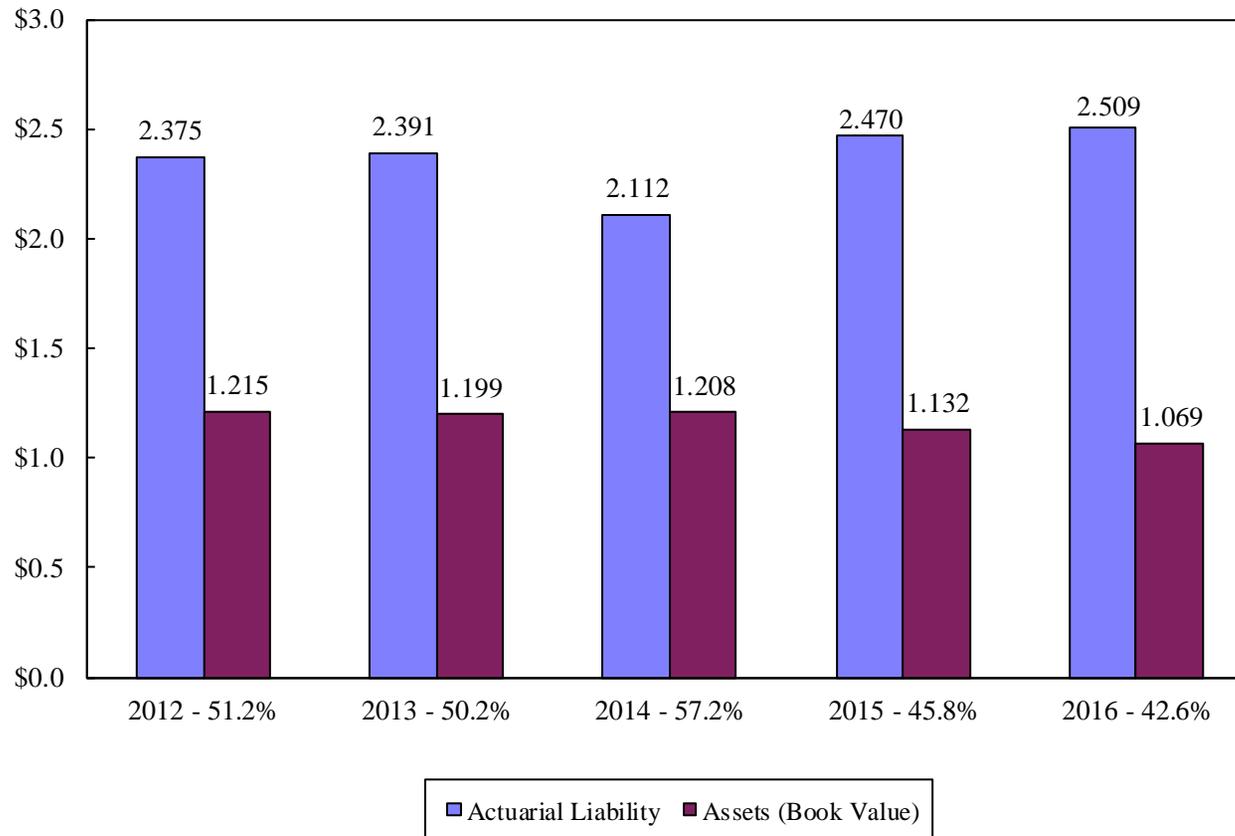
**COMPONENTS OF FUNDING RATIO
BASED ON ACTUARIAL VALUE
(\$ IN BILLIONS)**



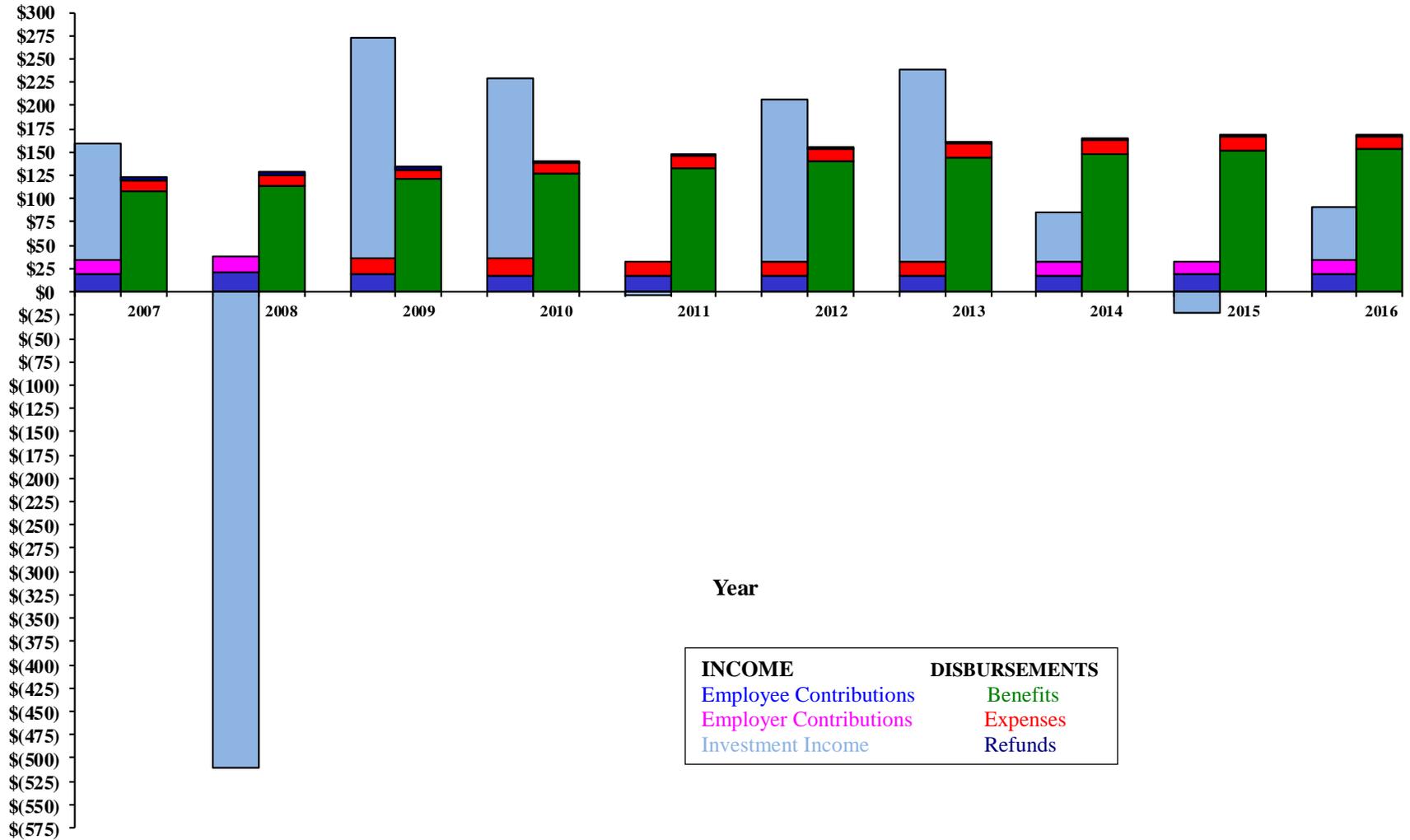
**COMPONENTS OF FUNDING RATIO
BASED ON MARKET VALUE
(\$ IN BILLIONS)**



**COMPONENTS OF FUNDING RATIO
BASED ON BOOK VALUE
(\$ IN BILLIONS)**



SUMMARY OF INCOME AND DISBURSEMENTS (\$ IN MILLIONS)



ACTUARIAL COMPUTATIONS

TABLE 1
DEVELOPMENT OF ACTUARIAL DETERMINED CONTRIBUTION
UNDER GASB STATEMENTS NOS. 67 AND 68 FOR 2017

	<u>2016</u>	<u>2017</u>
(1) Normal Cost	\$ 38,515,810	\$ 38,910,344
(2) Actuarial Accrued Liability (AAL)	2,467,746,239	2,509,272,511
(3) Unfunded AAL (UAAL)		
(a) Actuarial Value of Assets	1,308,676,494	1,263,664,871
(b) UAAL [2-3(a)]	1,159,069,745	1,245,607,640
(4) Covered Payroll	204,772,903	208,154,918
(5) Amortization (30-Year Level \$) Payable at BOY	91,292,900	98,108,966
(6) Minimum Actuarially Calculated Contribution		
(a) Interest Adjustment for Semi-monthly Payment	4,953,440	5,228,594
(b) Total Minimum Contribution [1+5+6(a); but not less than zero]	134,762,150	142,247,904
(c) Total Minimum Contribution (Percent of Pay)	65.81%	68.34%
(7) Estimated Member Contributions	17,729,050	18,021,862
(8) Actuarial Determined Contribution (ADC)		
(a) Actuarial Determined Contribution [6(b)-7]	\$ 117,033,100	\$ 124,226,042
(b) Actuarial Determined Contribution (Percent of Pay)	57.15%	59.68%
(9) Estimated City Contribution ^{1, 2}	12,305,327	14,647,392
(10) City Contribution Deficiency/(Excess)		
(a) in Dollars [(8(a)-9)]	104,727,773	109,578,650
(b) as a Percentage of Pay	51.14 %	52.64 %
(11) Combined City/Member Contributions Deficiency/(Excess)		
(a) in Dollars [6(b)-7-9]	\$ 104,727,773	\$ 109,578,650
(b) as a Percentage of Pay	51.14 %	52.64 %

¹ Total statutory required contribution less expected benefit payments of \$2,112,913 in 2016 and \$0 in 2017 for the health insurance supplement.

² Estimated City Contribution includes four percent tax levy loss.

TABLE 1A
DEVELOPMENT OF CITY CONTRIBUTION REQUIREMENTS

	<u>Fiscal Year 2017</u>	<u>Fiscal Year 2018</u>	<u>Projected Fiscal Year 2019</u>	<u>Projected Fiscal Year 2020</u>	<u>Projected Fiscal Year 2021</u>	<u>Projected Fiscal Year 2022</u>
Preliminary Determination of City Contribution						
Applicable Members' Contribution, Two Years Prior	\$ 15,257,665	\$ 15,607,938	\$ 16,652,200	\$ 16,934,736	\$ 17,338,606	\$ 17,788,434
Statutory Contribution Multiple	1.00	1.00	1.00	1.00	1.00	1.00
Statutory City Contribution ¹	15,257,700	15,607,900	16,652,200	16,934,700	17,338,600	17,788,400
GASB Statements Nos. 67 and 68 ADC	124,226,042	134,207,348	146,735,937	159,093,372	170,096,644	181,419,283
Actuarial Liability at Valuation Date	2,509,272,511	2,568,444,551	2,623,442,892	2,675,092,411	2,722,921,576	2,767,044,702
Actuarial Value of Assets at Valuation Date	1,263,664,871	1,195,175,981	1,093,255,774	990,210,664	899,712,833	802,218,279
Funded Ratio	50.36%	46.53%	41.67%	37.02%	33.04%	28.99%

¹ Before 4.00 percent tax levy loss.

TABLE 1B
ACTIVE ACCRUED LIABILITY AND NORMAL COST BY TIER

	<u>Tier 1 Members</u>	<u>Tier 2 Members</u> ¹	<u>Total</u>
(1) Count	2,198	624	2,822
(2) Payroll	\$ 170,787,919	\$ 37,366,999	\$ 208,154,918
(3) Average Payroll	\$ 77,702	\$ 59,883	\$ 73,761
(4) Actuarial Accrued Liability (AAL)	\$ 875,076,520	\$ 11,001,073	\$ 886,077,593
(5) Normal Cost	\$ 33,871,062	\$ 5,039,282	\$ 38,910,344
(6) Normal Cost as a Percent of Pay	19.8%	13.5%	18.7%
(7) Member Contributions as a Percent of Pay	8.5%	8.5%	8.5%
(8) Net Employer Normal Cost as a Percent of Pay	11.3%	5.0%	10.2%

¹ Members who began participating on or after January 1, 2011.

TABLE 2
RECONCILIATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
(GAIN/LOSS ANALYSIS)

	2012	2013	2014	2015	2016
Unfunded (Overfunded) Actuarial Accrued Liability (UAAL)					
Beginning of Year	\$768,767,413	\$1,058,929,034	\$1,036,312,597	\$754,252,757	\$1,161,202,825
(Gains) Losses During the Year Attributable to:					
Contributions Less Than (in Excess of) Normal Cost plus Interest	63,344,488	90,011,595	87,798,075	62,450,347	95,638,449
(Gain) Loss on Investment Return on the Actuarial Value of Assets	99,757,018	(64,848,168)	(29,122,655)	18,785,834	9,501,636
(Gain) Loss from Salary Changes	(11,246,150)	(12,859,999)	(10,377,473)	(9,689,519)	(11,787,874)
(Gain) Loss from Retirement, Termination, & Mortality	7,410,741	(4,749,315)	(12,446,485)	(34,916,630)	(9,311,863)
(Gain) Loss from Data Corrections and Unexpected Service Changes	505,176	182,938	(30,347)	239,035	364,467
Change in Methodology	-	-	-	-	-
Change in Assumptions	130,390,348	-	-	-	-
Plan Amendments	-	(30,353,488)	(317,880,955)	370,081,001	-
Net Increase (Decrease) in UAAL	290,161,621	(22,616,437)	(282,059,840)	406,950,068	84,404,815
Unfunded (Overfunded) Actuarial Accrued Liability (UAAL)					
End of Year	\$1,058,929,034	\$1,036,312,597	\$754,252,757	\$1,161,202,825	\$1,245,607,640

TABLE 2A
RECONCILIATION OF FUNDED RATIO (BASED ON ACTUARIAL VALUE OF ASSETS)

	2012	2013	2014	2015	2016
Funded Ratio Beginning of Year	64.92%	55.41%	56.65%	64.28%	52.99%
Expected Increase if All Assumptions Realized	0.88%	1.16%	1.09%	0.54%	1.11%
Expected Funded Ratio	65.80%	56.57%	57.74%	64.82%	54.10%
Gains (Losses) During the Year Attributable to:					
Contributions in Excess of (Less Than) Normal Cost plus Interest	-2.82%	-3.69%	-3.58%	-2.91%	-3.78%
Gain (Loss) on Investment Return on the Smoothed Value of Assets	-4.44%	2.66%	1.19%	-0.88%	-0.37%
Gain (Loss) from Salary Changes	0.30%	0.29%	0.24%	0.28%	0.23%
Gain (Loss) from Retirement, Termination, & Mortality	-0.20%	0.11%	0.28%	1.02%	0.19%
Gain (Loss) from Data Corrections	-0.01%	0.00%	0.00%	-0.01%	-0.01%
Change in Methodology	0.00%	0.00%	0.00%	0.00%	0.00%
Change in Assumptions	-3.22%	0.00%	0.00%	0.00%	0.00%
Plan Amendments	0.00%	0.71%	8.41%	-9.33%	0.00%
Total Gains (Losses) During the Year	-10.39%	0.08%	6.54%	-11.83%	-3.74%
Funded Ratio End of Year	55.41%	56.65%	64.28%	52.99%	50.36%

TABLE 3
SUMMARY OF BASIC ACTUARIAL VALUES

	APV of Projected Benefits	Actuarial Accrued Liability	2017 Normal Cost
(1) Values for Active and Inactive Members			
(a) Retirement	\$ 1,043,465,938	\$ 868,617,829	\$ 23,927,682
(b) Termination	46,353,541	7,887,046	5,052,957
(c) Death	14,766,539	9,572,718	672,440
(d) Inactive Vested and Non-Vested	27,973,776	27,973,776	-
(e) Disability	-	-	5,203,873
(f) Expenses of Administration	-	-	4,053,392
Total for Active and Inactive Members	\$ 1,132,559,794	\$ 914,051,369	\$ 38,910,344
(2) Values for Members in Payment Status	\$ 1,595,221,142	\$ 1,595,221,142	\$ -
(3) Grand Totals	\$ 2,727,780,936	\$ 2,509,272,511	\$ 38,910,344
Actuarial Present Value of Future Compensation			\$ 1,669,863,454

TABLE 4 50-YEAR PROJECTIONS

Laborers' and Retirement Board Employees' Annuity and Benefit Fund of Chicago Actuarial Valuation Projection Results as of December 31, 2016 Based on the Provisions in Effect as of December 31, 2016 (\$ in Thousands)																			
PYE 12/31	Present Value of Benefits	Actuarial Accrued Liability	Market Value of Assets	Actuarial Value of Assets	Unfunded Liability	Funded Ratio	Capped Payroll	Actuarial Determined Contribution	ADC as % of Pay ¹	Statutory Contribution (City Multiple) ²	Statutory Contribution (Additional)	Total Statutory Contribution ²	Statutory Contribution % of Pay ¹	Total Normal Cost	Total Employee Contribution	Applicable Employee Contribution	Administrative Benefits	Administrative Expenses	Contribution Multiple
2016	\$ 2,727,781	\$ 2,509,273	\$ 1,167,741	\$ 1,263,665	\$ 1,245,608	50.36%	\$ 208,155	\$ 119,215	57.27%	\$ 14,443	\$ -	\$ 14,443	6.94%	\$ 38,516	\$ 17,246	\$ 15,608	\$ 156,523	\$ 4,080	1.00
2017	2,787,859	2,568,445	1,118,104	1,195,176	1,373,269	46.53%	211,687	124,226	58.68%	14,418	-	14,418	6.81%	38,910	18,022	16,652	160,581	4,203	1.00
2018	2,843,200	2,623,443	1,056,845	1,093,256	1,530,187	41.67%	216,735	134,207	61.92%	14,647	-	14,647	6.76%	38,764	18,328	16,935	168,610	4,329	1.00
2019	2,895,934	2,675,092	984,180	990,211	1,684,881	37.02%	222,358	146,736	65.99%	14,984	-	14,984	6.74%	38,894	18,765	17,339	175,823	4,459	1.00
2020	2,945,580	2,722,922	899,713	899,713	1,823,209	33.04%	228,383	159,093	69.66%	15,986	-	15,986	7.00%	39,082	19,252	17,788	183,304	4,592	1.00
2021	2,991,677	2,767,045	802,218	802,218	1,964,827	28.99%	235,220	170,097	72.31%	16,257	-	16,257	6.91%	39,288	19,773	18,270	190,415	4,730	1.00
2022	3,034,222	2,807,560	691,164	691,164	2,116,396	24.62%	242,653	181,419	74.76%	16,645	-	16,645	6.86%	39,610	20,365	18,817	197,278	4,872	1.00
2023	3,073,665	2,844,231	565,577	565,577	2,278,654	19.89%	250,322	193,589	77.34%	17,077	-	17,077	6.82%	40,014	21,009	19,412	204,190	5,018	1.00
2024	3,109,140	2,876,593	424,276	424,276	2,452,317	14.75%	258,440	206,585	79.94%	17,540	-	17,540	6.79%	40,391	21,673	20,026	211,239	5,169	1.00
2025	3,140,238	2,904,278	266,085	266,085	2,638,193	9.16%	266,990	220,528	82.60%	18,065	-	18,065	6.77%	40,821	22,376	20,675	218,380	5,324	1.00
2026	3,166,631	2,926,838	89,677	89,677	2,837,161	3.06%	275,720	235,478	85.40%	18,636	-	18,636	6.76%	41,295	23,116	21,359	225,658	5,484	1.00
2027	3,189,085	2,945,071	-	-	2,945,071	0.00%	284,743	251,493	88.32%	19,225	101,372	120,597	42.35%	41,777	23,872	22,057	231,799	5,648	6.06
2028	3,206,673	2,958,196	-	-	2,958,196	0.00%	293,939	260,068	88.48%	19,848	199,723	219,571	74.70%	42,290	24,653	22,779	238,407	5,817	10.66
2029	3,219,473	2,966,129	-	-	2,966,129	0.00%	302,905	260,896	86.13%	20,505	204,778	225,283	74.37%	42,821	25,449	23,515	244,740	5,992	10.59
2030	3,226,859	2,968,819	-	-	2,968,819	0.00%	311,886	261,288	83.78%	21,175	209,481	230,656	73.96%	43,321	26,225	24,232	250,709	6,172	10.50
2031	3,229,343	2,966,844	-	-	2,966,844	0.00%	320,966	261,301	81.41%	21,868	213,273	235,141	73.26%	43,870	27,003	24,951	255,787	6,357	10.36
2032	3,227,595	2,960,699	-	-	2,960,699	0.00%	330,098	260,987	79.06%	22,574	216,294	238,868	72.36%	44,481	27,789	25,677	260,109	6,548	10.20
2033	3,221,976	2,950,874	-	-	2,950,874	0.00%	339,384	260,364	76.72%	23,263	218,588	241,851	71.26%	45,126	28,580	26,408	263,686	6,744	10.02
2034	3,213,043	2,938,285	-	-	2,938,285	0.00%	348,925	259,487	74.37%	23,953	219,779	243,732	69.85%	45,830	29,384	27,150	266,169	6,946	9.81
2035	3,201,922	2,923,658	-	-	2,923,658	0.00%	357,954	258,432	72.20%	24,650	220,110	244,760	68.38%	46,601	30,210	27,914	267,814	7,155	9.57
2036	3,189,085	2,907,570	-	-	2,907,570	0.00%	366,558	257,214	70.17%	25,351	219,737	245,088	66.86%	47,333	30,991	28,636	268,710	7,369	9.32
2037	3,175,311	2,890,704	-	-	2,890,704	0.00%	375,044	255,919	68.24%	26,064	218,630	244,694	65.24%	48,070	31,736	29,324	268,840	7,590	9.05
2038	3,161,343	2,873,517	-	-	2,873,517	0.00%	383,396	254,597	66.41%	26,797	217,043	243,840	63.60%	48,833	32,471	30,003	268,493	7,818	8.77
2039	3,147,321	2,856,511	-	-	2,856,511	0.00%	391,866	253,248	64.63%	27,491	214,987	242,478	61.88%	49,584	33,194	30,671	267,619	8,053	8.51
2040	3,134,202	2,840,571	-	-	2,840,571	0.00%	400,493	251,966	62.91%	28,151	212,175	240,326	60.01%	50,395	33,927	31,349	265,959	8,294	8.23

¹ Contribution rate is shown as a percentage of capped payroll.

² Actual employer contributions equal to the statutory contribution including a 4.00 percent loss on the tax levy.

TABLE 4 (CONT'D)

50-YEAR PROJECTIONS

Laborers' and Retirement Board Employees' Annuity and Benefit Fund of Chicago																						
Actuarial Valuation Projection Results as of December 31, 2016																						
Based on the Provisions in Effect as of December 31, 2016																						
(\$ in Thousands)																						
PYE 12/31	Present Value of Benefits	Actuarial Accrued Liability	Market Value of Assets	Actuarial Value of Assets	Unfunded Liability	Funded Ratio	Capped Payroll	Actuarial Determined Contribution	ADC as % of Pay ¹	Statutory Contribution (City Multiple) ²	Statutory Contribution (Additional)	Total Statutory Contribution ²	Statutory Contribution % of Pay ¹	Total Normal Cost	Total Employee Contribution	Applicable Employee Contribution	Administrative Benefits	Administrative Expenses	Active Members	Contribution Multiple		
2041	\$ 3,122,827	\$ 2,826,558	\$ -	\$ -	\$ 2,826,558	0.00%	\$ 409,260	\$ 250,818	61.29%	\$ 28,803	\$ 208,667	\$ 237,470	58.02%	\$ 51,264	\$ 34,674	\$ 32,039	\$ 263,601	\$ 8,543	2,822	7.95		
2042	3,114,020	2,815,126	-	-	2,815,126	0.00%	418,107	249,860	59.76%	29,444	204,709	234,153	56.00%	52,176	35,433	32,740	260,786	8,799	2,822	7.67		
2043	3,108,263	2,806,866	-	-	2,806,866	0.00%	427,089	249,137	58.33%	30,095	200,383	230,478	53.96%	53,118	36,199	33,448	257,614	9,063	2,822	7.39		
2044	3,106,284	2,802,371	-	-	2,802,371	0.00%	436,262	248,702	57.01%	30,758	195,729	226,487	51.92%	54,098	36,977	34,167	254,129	9,335	2,822	7.11		
2045	3,108,459	2,801,981	-	-	2,801,981	0.00%	445,524	248,593	55.80%	31,431	191,029	222,460	49.93%	55,113	37,771	34,901	250,616	9,615	2,822	6.83		
2046	3,115,051	2,806,034	-	-	2,806,034	0.00%	454,998	248,835	54.69%	32,110	186,309	218,419	48.00%	56,149	38,573	35,642	247,089	9,904	2,822	6.57		
2047	3,126,559	2,814,783	-	-	2,814,783	0.00%	464,628	249,468	53.69%	32,800	181,684	214,484	46.16%	57,229	39,393	36,399	243,676	10,201	2,822	6.32		
2048	3,142,999	2,828,414	-	-	2,828,414	0.00%	474,466	250,502	52.80%	33,505	177,220	210,725	44.41%	58,340	40,227	37,170	240,445	10,507	2,822	6.08		
2049	3,164,626	2,847,150	-	-	2,847,150	0.00%	484,531	251,957	52.00%	34,216	172,910	207,126	42.75%	59,488	41,079	37,957	237,382	10,822	2,822	5.85		
2050	3,191,715	2,870,905	-	-	2,870,905	0.00%	494,818	253,848	51.30%	34,943	169,056	203,999	41.23%	60,673	41,950	38,762	234,802	11,147	2,822	5.64		
2051	3,224,191	2,899,122	-	-	2,899,122	0.00%	505,266	256,176	50.70%	35,683	166,112	201,795	39.94%	61,902	42,841	39,585	233,155	11,481	2,822	5.47		
2052	3,260,668	2,931,348	-	-	2,931,348	0.00%	515,971	258,907	50.18%	36,439	163,954	200,393	38.84%	63,181	43,745	40,421	232,313	11,826	2,822	5.32		
2053	3,301,348	2,967,357	-	-	2,967,357	0.00%	526,809	261,973	49.73%	37,212	162,294	199,506	37.87%	64,490	44,672	41,277	231,997	12,180	2,822	5.19		
2054	3,345,547	3,006,987	-	-	3,006,987	0.00%	537,836	265,383	49.34%	38,002	161,079	199,081	37.02%	65,842	45,611	42,144	232,146	12,546	2,822	5.07		
2055	3,393,172	3,049,998	-	-	3,049,998	0.00%	548,867	269,086	49.03%	38,804	160,343	199,147	36.28%	67,207	46,565	43,026	232,790	12,922	2,822	4.97		
2056	3,443,668	3,096,469	-	-	3,096,469	0.00%	559,098	273,041	48.84%	39,626	159,733	199,359	35.66%	68,549	47,520	43,909	233,569	13,310	2,822	4.87		
2057	3,498,423	3,145,972	-	-	3,145,972	0.00%	568,821	277,279	48.75%	40,458	159,773	200,231	35.20%	69,824	48,406	44,727	234,928	13,709	2,822	4.79		
2058	3,555,328	3,197,620	-	-	3,197,620	0.00%	578,378	281,800	48.72%	41,305	160,909	202,214	34.96%	71,090	49,248	45,505	237,342	14,120	2,822	4.74		
2059	3,614,436	3,251,137	-	-	3,251,137	0.00%	587,908	286,508	48.73%	42,153	162,478	204,631	34.81%	72,354	50,075	46,270	240,162	14,544	2,822	4.70		
2060	3,675,363	3,306,192	-	-	3,306,192	0.00%	597,447	291,395	48.77%	42,938	164,591	207,529	34.74%	73,641	50,901	47,032	243,449	14,980	2,822	4.68		
2061	3,737,646	3,362,465	-	-	3,362,465	0.00%	607,054	296,431	48.83%	43,685	167,184	210,869	34.74%	74,952	51,726	47,795	247,166	15,430	2,822	4.67		
2062	3,801,044	3,419,755	-	-	3,419,755	0.00%	616,731	301,585	48.90%	44,419	170,090	214,509	34.78%	76,285	52,558	48,564	251,175	15,893	2,822	4.67		
2063	3,865,413	3,477,891	-	-	3,477,891	0.00%	626,457	306,842	48.98%	45,151	173,257	218,408	34.86%	77,644	53,396	49,338	255,435	16,369	2,822	4.68		
2064	3,930,496	3,536,663	-	-	3,536,663	0.00%	636,246	312,187	49.07%	45,883	176,706	222,589	34.98%	79,024	54,238	50,116	259,967	16,861	2,822	4.70		
2065	3,996,096	3,595,878	-	-	3,595,878	0.00%	646,116	317,604	49.16%	46,621	180,401	227,022	35.14%	80,429	55,086	50,899	264,741	17,366	2,822	4.71		

¹ Contribution rate is shown as a percentage of capped payroll.

² Actual employer contributions equal to the statutory contribution including a 4.00 percent loss on the tax levy.

TABLE 5
ACTUARIAL ACCRUED LIABILITY PRIORITIZED
SOLVENCY TEST

Valuation Date 12/31	(1)	(2)	(3)	Actuarial Value of Assets	Portion (%) of Present Value Covered By Assets		
	Active and Inactive Member Contributions	Retirees and Beneficiaries	Active and Inactive Members (ER Financed Portion)		(1)	(2)	(3)
2007	\$ 247,854,869	\$ 1,074,580,007	\$ 527,271,642	\$ 1,757,710,948	100.00%	100.00%	82.55%
2008	254,588,537	1,129,920,171	572,879,125	1,698,427,008	100.00%	100.00%	54.80%
2009	254,604,734	1,203,586,162	559,296,180	1,601,351,633	100.00%	100.00%	25.60%
2010	254,138,112	1,281,511,698	535,736,023	1,529,403,512	100.00%	99.51%	0.00%
2011 ²	251,243,991	1,403,258,511	536,679,260	1,422,414,349	100.00%	83.46%	0.00%
2012 ²	253,449,161	1,519,775,727	601,617,743	1,315,913,597	100.00%	69.91%	0.00%
2013 ¹	258,837,708	1,537,553,531	594,181,889	1,354,260,531	100.00%	71.24%	0.00%
2014 ¹	264,822,986	1,364,252,443	482,628,690	1,357,451,362	100.00%	80.09%	0.00%
2015 ¹	272,689,815	1,588,566,637	608,622,867	1,308,676,494	100.00%	65.22%	0.00%
2016	284,417,732	1,595,221,142	629,633,637	1,263,664,871	100.00%	61.39%	0.00%

¹ Change in benefits.

² Change in actuarial assumptions.

The prioritized solvency test is another means of checking a system's progress under its funding program, based on the Actuarial Accrued Liability. In this test, the plan's present assets (cash and investments) are compared with obligations in order of priority: (1) active and inactive member contributions on deposit; (2) the present value of future benefits to present retired lives; and (3) the employer financed portion for present active and inactive members. In a system that has been following the discipline of financing, the obligation for active and inactive member contributions on deposit (present value 1) and the present value of future benefits to present retired lives (present value 2) will be fully covered by present assets (except in rare circumstances). In addition, the Actuarial Accrued Liability for present active and inactive members (present value 3) is covered by the remainder of present assets. Generally, if the system has been following a system of amortizing the Unfunded Liability, the funded portion of present value (3) will increase over time.

Due to the inadequacy of funding, the current assets are only sufficient to cover active and inactive member contributions and 61 percent of retiree liabilities. The present value of employer financed benefits for active and inactive members is completely unfunded.

TABLE 6
STATUTORY RESERVES AS OF DECEMBER 31, 2016

	New in 2016			Continuing from 2015			Total		
	Annuity Payment Fund	Prior Service Fund	Total	Annuity Payment Fund	Prior Service Fund	Total	Annuity Payment Fund	Prior Service Fund	Total
Statutory Reserve ¹									
Retirees	\$ 15,556,338	\$ 31,820,999	\$ 47,377,337	\$ 286,332,195	\$ 1,147,332,689	\$ 1,433,664,884	\$ 301,888,533	\$ 1,179,153,688	\$ 1,481,042,221
Future Surviving Spouses	\$ 3,060,486	\$ 1,866,804	\$ 4,927,290	\$ 78,876,380	\$ 107,852,175	\$ 186,728,555	\$ 81,936,866	\$ 109,718,979	\$ 191,655,845
Spouses ²	\$ 4,581,559	\$ 2,873,116	\$ 7,454,675	\$ 57,022,736	\$ 44,628,715	\$ 101,651,451	\$ 61,604,295	\$ 47,501,831	\$ 109,106,126
Annual Benefits									
Retirees	\$ 1,453,407	\$ 1,766,001	\$ 3,219,408	\$ 31,630,261	\$ 94,330,355	\$ 125,960,616	\$ 33,083,668	\$ 96,096,356	\$ 129,180,024
Future Surviving Spouses	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Spouses ²	\$ 550,818	\$ 389,712	\$ 940,530	\$ 8,147,369	\$ 7,309,101	\$ 15,456,470	\$ 8,698,187	\$ 7,698,813	\$ 16,397,000

¹As required by State statutes, 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.

²Surviving spouses also include reversionary annuitants.

TABLE 7
STATE REPORTING DISCLOSURE

	<u>2015</u>	<u>2016</u>
APV of Credited Projected Benefits		
Payable to Retirees and Beneficiaries	\$ 1,588,566,637	\$ 1,595,221,142
Current Active and Inactive Employees:		
Accumulated Employee Contributions	272,689,815	284,417,732
Payable to Vested and Non-Vested Employees	416,898,052	438,637,312
Total APV	<u>\$ 2,278,154,504</u>	<u>\$ 2,318,276,186</u>
Net Assets Available for Benefits, Actuarial Value	<u>\$ 1,308,676,494</u>	<u>\$ 1,263,664,871</u>
Unfunded AAL (AAL in excess of assets)	\$ 969,478,010	\$ 1,054,611,315
Percent Funded	57.44 %	54.51 %
Unfunded AAL as Percent of Payroll	473.44%	506.65%
Payroll	\$ 204,772,903	\$ 208,154,918

The actuarial present value of credited projected benefits is based on the RP-2000 Combined Healthy Mortality Table, sex distinct, set forward one year for males and set back two years for females and a discount rate of 7.50 percent.

TABLE 8
ACTUARIAL RESERVE LIABILITIES
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2016

Accrued Liabilities for Active and Inactive Participants ¹	\$ 914,051,369
Reserves For:	
Service Retirement Pension	\$ 1,322,579,218
Future Widows of Current Retirees	147,508,674
Surviving Spouse Pension	124,829,022
Children Annuitants	<u>304,228</u>
Total Accrued Liabilities	\$ 2,509,272,511
Unfunded Actuarial Liabilities (Surplus)	\$ 1,245,607,640
Actuarial Net Assets	\$ 1,263,664,871

¹ *Accrued liabilities for active participants includes retirement liability for members in ordinary or duty disabled status. Liability for disability benefits is recognized as a one-year term cost of 2.50 percent of pay added to the normal cost.*

The actuarial present value of accrued liabilities is based on the RP-2000 Combined Healthy Mortality Table, sex distinct, set forward one year for males and set back two years for females and a discount rate of 7.50 percent.

ASSETS OF THE PLAN

ASSETS OF THE PLAN

The book value of plan assets, net of accounts payable, decreased from \$1.13 billion as of December 31, 2015, to \$1.07 billion as of December 31, 2016, and the market value of plan assets decreased from \$1.24 billion as of December 31, 2015, to \$1.17 billion as of December 31, 2016. Table 9 details the development of asset values during 2016 and Table 10 shows the development of the actuarial value of assets as of December 31, 2016.

TABLE 9
RECONCILIATION OF ASSET VALUES
AS OF DECEMBER 31, 2016

	<u>Market Value</u>	<u>Book Value</u>
(1) Value of Assets as of 12/31/2015	\$ 1,238,657,245	\$ 1,131,664,961
(2) Income for Plan Year:		
(a) Member Contributions	\$ 17,245,913	\$ 17,245,913
(b) City Contributions & Miscellaneous	14,443,495	14,443,495
(c) Investment Income Net of Expenses	57,737,802	65,975,403
(d) Income from Securities Lending	259,527	259,527
(e) Total Income	<u>\$ 89,686,737</u>	<u>\$ 97,924,338</u>
(3) Disbursements for Plan Year:		
(a) Benefit Payments - Pension	\$ 151,922,150	\$ 151,922,150
(b) Benefit Payments - Health Insurance Supplement	1,839,997	1,839,997
(c) Refunds and Rollovers	2,760,872	2,760,872
(d) Administration and OPEB Expenses	4,080,239	4,080,239
(e) Total Disbursements	<u>\$ 160,603,258</u>	<u>\$ 160,603,258</u>
(4) Value of Assets as of 12/31/2016	\$ 1,167,740,724	\$ 1,068,986,041
(5) Estimated Rate of Return in 2016:		
(a) Gross (Investment Expense of \$8,864,044)	5.69%	7.04%
(b) Net of Investment Expense	4.94%	6.21%

TABLE 10
DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS
AS OF DECEMBER 31, 2016

Laborers' and Retirement Board Employees' Annuity and Benefit Fund of Chicago
DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS

Year Ending December 31	2016	2017	2018	2019	2020
Beginning of Year:					
(1) Market Value of Assets	\$ 1,238,657,245				
(2) Actuarial Value of Assets	1,308,676,494				
End of Year:					
(3) Market Value of Assets	1,167,740,724				
(4) Contributions and Disbursements					
(4a) City Contributions & Misc.	14,443,495				
(4b) Member Contributions	17,245,913				
(4c) Benefit Payouts & Refunds	(156,523,019)				
(4d) Administrative and OPEB Expenses	(4,080,239)				
(4e) Net of Contributions and Disbursements	(128,913,850)				
(5) Total Investment Income					
=(3)-(1)-(4e)	57,997,329				
(6) Projected Rate of Return	7.50%				
(7) Projected Investment Income					
=(1)x(6)+([1+(6)] ^{.5-1})x(4e)	88,152,419				
(8) Investment Income in Excess of Projected Income	(30,155,090)				
(9) Excess Investment Income Recognized					
This Year (5-year recognition)					
(9a) From This Year	(6,031,018)				
(9b) From One Year Ago	(24,348,945)	\$ (6,031,018)			
(9c) From Two Years Ago	(10,280,760)	(24,348,945)	\$ (6,031,018)		
(9d) From Three Years Ago	21,808,279	(10,280,760)	(24,348,945)	\$ (6,031,018)	
(9e) From Four Years Ago	14,602,252	21,808,281	(10,280,760)	(24,348,946)	\$ (6,031,018)
(9f) Total Recognized Investment Gain	(4,250,192)	(18,852,442)	(40,660,723)	(30,379,964)	(6,031,018)
(10) Change in Actuarial Value of Assets					
=(4e)+(7)+(9f)	(45,011,623)				
End of Year:					
(3) Market Value of Assets	\$ 1,167,740,724				
(11) Actuarial Value of Assets					
=(2)+(10)	\$ 1,263,664,871				

PLAN MEMBER DATA

EXHIBIT A
SUMMARY OF CHANGES IN ACTIVE AND INACTIVE PARTICIPANTS
FOR THE YEAR ENDING DECEMBER 31, 2016

Active Participants ¹	Number at Beginning of Year	New	Inactive to Active	Total Increases	Decreases	Number at End of Year
Males	2,271	120	9	129	126	2,274
Females	545	30	2	32	29	548
Active Total	2,816	150	11	161	155	2,822
Inactive Participants	Number at Beginning of Year	New	Active to Inactive	Total Increases	Decreases	Number at End of Year
Males	1,297	10	49	59	43	1,313
Females	158	1	14	15	10	163
Inactive Total	1,455	11	63	74	53	1,476
Total - Actives and Inactives	4,271	161	74	235	208	4,298

¹All employees receiving ordinary and duty disability benefits are included in the active count.

EXHIBIT B
SUMMARY OF CHANGES IN ANNUITANTS AND BENEFICIARIES
FOR THE YEAR ENDING DECEMBER 31, 2016

Annuitants and Beneficiaries	Number at Beginning of Year	Additions During Year	Terminations During Year	Number at End of Year
Employee Annuitants	2,665	74	106	2,633
Surviving Spouse Annuitants	1,122	39	88	1,073
Reversionary Annuitants ¹	27	1	1	27
Child Annuitants	32	5	1	36
Annuitant Totals	3,846	119	196	3,769
Actives Receiving Disability				
Ordinary Disability Benefit	51	68	71	48
Duty Disability Benefit	188	220	211	197
Disability Totals	239	288	282	245
Totals	4,085	407	478	4,014

¹ Includes 23 Reversionary Annuitants as of December 31, 2015, and 22 Reversionary Annuitants as of December 31, 2016, that are also Survivors.

EXHIBIT C
PART I – TOTAL LIVES AND ANNUAL SALARIES OF ACTIVE MALE PARTICIPANTS CLASSIFIED BY
AGE AND YEARS OF SERVICE AS OF DECEMBER 31, 2016

Attained Age	Completed Years of Service									Total	
	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
Under 20	-	-	-	-	-	-	-	-	-	-	-
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
20-24	2	29	2	-	-	-	-	-	-	-	33
	\$ 90,730	\$ 1,590,815	\$ 167,232	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,848,777
25-29	11	97	22	2	-	-	-	-	-	-	132
	\$ 586,290	\$ 5,503,566	\$ 1,700,691	\$ 157,456	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,948,003
30-34	4	78	39	15	4	-	-	-	-	-	140
	\$ 195,640	\$ 4,323,464	\$ 3,016,758	\$ 1,142,648	\$ 314,912	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,993,422
35-39	6	65	34	45	73	7	-	-	-	-	230
	\$ 291,410	\$ 4,081,731	\$ 2,650,521	\$ 3,481,688	\$ 5,817,292	\$ 589,680	\$ -	\$ -	\$ -	\$ -	\$ 16,912,322
40-44	1	41	29	31	109	78	2	-	-	-	291
	\$ 58,531	\$ 2,474,585	\$ 2,328,644	\$ 2,264,102	\$ 8,314,372	\$ 6,426,674	\$ 169,104	\$ -	\$ -	\$ -	\$ 22,036,012
45-49	2	37	30	39	133	101	45	1	-	-	388
	\$ 81,120	\$ 2,151,024	\$ 2,328,914	\$ 2,972,843	\$ 10,428,593	\$ 8,463,046	\$ 3,778,990	\$ 75,150	\$ -	\$ -	\$ 30,279,680
50-54	5	25	16	30	105	106	82	30	10	-	409
	\$ 300,145	\$ 1,497,837	\$ 1,203,426	\$ 2,238,333	\$ 7,783,623	\$ 8,482,507	\$ 6,718,350	\$ 2,613,470	\$ 950,405	\$ -	\$ 31,788,096
55-59	-	19	16	33	96	81	57	35	32	-	369
	\$ -	\$ 1,166,028	\$ 1,270,656	\$ 2,383,098	\$ 7,417,128	\$ 6,455,563	\$ 4,713,782	\$ 2,941,416	\$ 2,871,347	\$ -	\$ 29,219,018
60-64	-	5	6	17	55	51	33	13	17	-	197
	\$ -	\$ 208,313	\$ 478,528	\$ 1,261,791	\$ 4,036,263	\$ 3,941,069	\$ 2,542,799	\$ 1,094,603	\$ 1,399,769	\$ -	\$ 14,963,135
65-69	1	2	1	6	15	13	4	4	13	-	59
	\$ 50,170	\$ 128,440	\$ 73,840	\$ 425,048	\$ 1,137,172	\$ 1,047,916	\$ 310,544	\$ 317,034	\$ 1,102,168	\$ -	\$ 4,592,332
70 & Over	-	-	-	2	9	6	2	1	6	-	26
	\$ -	\$ -	\$ -	\$ 157,664	\$ 578,732	\$ 471,142	\$ 147,888	\$ 74,048	\$ 526,540	\$ -	\$ 1,956,014
Total	32	398	195	220	599	443	225	84	78	2,274	
	\$ 1,654,036	\$ 23,125,803	\$ 15,219,210	\$ 16,484,671	\$ 45,828,087	\$ 35,877,597	\$ 18,381,457	\$ 7,115,721	\$ 6,850,229	\$ 170,536,811	

EXHIBIT C

PART II – TOTAL LIVES AND ANNUAL SALARIES OF ACTIVE FEMALE PARTICIPANTS CLASSIFIED BY AGE AND YEARS OF SERVICE AS OF DECEMBER 31, 2016

Attained Age	Completed Years of Service									Total
	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
Under 20	-	-	-	-	-	-	-	-	-	-
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
20-24	1	11	-	-	-	-	-	-	-	12
	\$ 40,560	\$ 502,820	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 543,380
25-29	2	26	5	-	-	-	-	-	-	33
	\$ 99,744	\$ 1,248,745	\$ 297,086	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,645,575
30-34	1	26	6	12	-	-	-	-	-	45
	\$ 59,184	\$ 1,361,193	\$ 408,518	\$ 891,988	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,720,883
35-39	1	15	9	19	20	1	-	-	-	65
	\$ 40,560	\$ 840,625	\$ 633,422	\$ 1,519,573	\$ 1,464,348	\$ 73,840	\$ -	\$ -	\$ -	\$ 4,572,368
40-44	-	12	11	15	29	19	1	-	-	87
	\$ -	\$ 750,815	\$ 759,678	\$ 1,067,799	\$ 2,158,542	\$ 1,390,001	\$ 70,000	\$ -	\$ -	\$ 6,196,835
45-49	1	14	5	15	25	20	8	1	-	89
	\$ 50,170	\$ 655,723	\$ 449,998	\$ 1,026,754	\$ 1,867,851	\$ 1,475,755	\$ 650,634	\$ 96,216	\$ -	\$ 6,273,101
50-54	-	13	9	16	28	11	16	4	-	97
	\$ -	\$ 613,987	\$ 582,656	\$ 1,164,244	\$ 2,023,569	\$ 899,096	\$ 1,243,597	\$ 349,632	\$ -	\$ 6,876,781
55-59	-	5	3	12	28	16	8	3	1	76
	\$ -	\$ 223,787	\$ 229,812	\$ 866,986	\$ 1,928,683	\$ 1,270,798	\$ 627,709	\$ 282,460	\$ 81,825	\$ 5,512,060
60-64	-	-	2	6	9	5	5	4	-	31
	\$ -	\$ -	\$ 167,232	\$ 451,360	\$ 653,100	\$ 390,208	\$ 373,691	\$ 281,714	\$ -	\$ 2,317,305
65-69	-	-	-	1	4	2	2	-	-	9
	\$ -	\$ -	\$ -	\$ 73,840	\$ 292,920	\$ 146,224	\$ 177,852	\$ -	\$ -	\$ 690,836
70 & Over	-	-	-	-	2	1	1	-	-	4
	\$ -	\$ -	\$ -	\$ -	\$ 144,872	\$ 55,423	\$ 68,688	\$ -	\$ -	\$ 268,983
Total	6	122	50	96	145	75	41	12	1	548
	\$ 290,218	\$ 6,197,695	\$ 3,528,402	\$ 7,062,544	\$ 10,533,885	\$ 5,701,345	\$ 3,212,171	\$ 1,010,022	\$ 81,825	\$ 37,618,107

EXHIBIT C
PART III – TOTAL LIVES AND ANNUAL SALARIES OF ALL ACTIVE PARTICIPANTS CLASSIFIED BY
AGE AND YEARS OF SERVICE AS OF DECEMBER 31, 2016

Attained Age	Completed Years of Service									Total	
	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
Under 20	-	-	-	-	-	-	-	-	-	-	-
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
20-24	3	40	2	-	-	-	-	-	-	-	45
	\$ 131,290	\$ 2,093,635	\$ 167,232	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,392,157
25-29	13	123	27	2	-	-	-	-	-	-	165
	\$ 686,034	\$ 6,752,311	\$ 1,997,777	\$ 157,456	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 9,593,578
30-34	5	104	45	27	4	-	-	-	-	-	185
	\$ 254,824	\$ 5,684,657	\$ 3,425,276	\$ 2,034,636	\$ 314,912	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 11,714,305
35-39	7	80	43	64	93	8	-	-	-	-	295
	\$ 331,970	\$ 4,922,356	\$ 3,283,943	\$ 5,001,261	\$ 7,281,640	\$ 663,520	\$ -	\$ -	\$ -	\$ -	\$ 21,484,690
40-44	1	53	40	46	138	97	3	-	-	-	378
	\$ 58,531	\$ 3,225,400	\$ 3,088,322	\$ 3,331,901	\$ 10,472,914	\$ 7,816,675	\$ 239,104	\$ -	\$ -	\$ -	\$ 28,232,847
45-49	3	51	35	54	158	121	53	2	-	-	477
	\$ 131,290	\$ 2,806,747	\$ 2,778,912	\$ 3,999,597	\$ 12,296,444	\$ 9,938,801	\$ 4,429,624	\$ 171,366	\$ -	\$ -	\$ 36,552,781
50-54	5	38	25	46	133	117	98	34	10	-	506
	\$ 300,145	\$ 2,111,824	\$ 1,786,082	\$ 3,402,577	\$ 9,807,192	\$ 9,381,603	\$ 7,961,947	\$ 2,963,102	\$ 950,405	\$ -	\$ 38,664,877
55-59	-	24	19	45	124	97	65	38	33	-	445
	\$ -	\$ 1,389,815	\$ 1,500,468	\$ 3,250,084	\$ 9,345,811	\$ 7,726,361	\$ 5,341,491	\$ 3,223,876	\$ 2,953,172	\$ -	\$ 34,731,078
60-64	-	5	8	23	64	56	38	17	17	-	228
	\$ -	\$ 208,313	\$ 645,760	\$ 1,713,151	\$ 4,689,363	\$ 4,331,277	\$ 2,916,490	\$ 1,376,317	\$ 1,399,769	\$ -	\$ 17,280,440
65-69	1	2	1	7	19	15	6	4	13	-	68
	\$ 50,170	\$ 128,440	\$ 73,840	\$ 498,888	\$ 1,430,092	\$ 1,194,140	\$ 488,396	\$ 317,034	\$ 1,102,168	\$ -	\$ 5,283,168
70 & Over	-	-	-	2	11	7	3	1	6	-	30
	\$ -	\$ -	\$ -	\$ 157,664	\$ 723,604	\$ 526,565	\$ 216,576	\$ 74,048	\$ 526,540	\$ -	\$ 2,224,997
Total	38	520	245	316	744	518	266	96	79	-	2,822
	\$ 1,944,254	\$ 29,323,498	\$ 18,747,612	\$ 23,547,215	\$ 56,361,972	\$ 41,578,942	\$ 21,593,628	\$ 8,125,743	\$ 6,932,054	\$ -	\$ 208,154,918

EXHIBIT D
PART I – AGE AND SERVICE DISTRIBUTION FOR INACTIVES – MALES
AS OF DECEMBER 31, 2016

(Males Only)

Attained Age	Years of Service									Total
	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
Under 20	-	-	-	-	-	-	-	-	-	0
20-24	3	3	-	-	-	-	-	-	-	6
25-29	7	7	-	-	-	-	-	-	-	14
30-34	15	17	-	1	-	-	-	-	-	33
35-39	21	17	5	6	3	-	-	-	-	52
40-44	35	28	6	5	2	1	-	-	-	77
45-49	43	23	11	5	9	1	-	-	-	92
50-54	117	27	6	7	3	6	4	-	-	170
55-59	239	52	4	3	11	-	3	-	-	312
60-64	139	57	7	3	4	4	1	-	-	215
65-69	79	34	7	3	-	-	-	-	-	123
70 & Over	112	73	9	7	7	2	5	2	-	217
w/o DOB	1	1	-	-	-	-	-	-	-	2
Total	811	339	55	40	39	14	13	2	0	1,313
Average Age										59.22
Average Service										2.27

For inactives without a birthdate on record, we assumed an average age of 58.38.

EXHIBIT D
PART II – AGE AND SERVICE DISTRIBUTION FOR INACTIVES – FEMALES
AS OF DECEMBER 31, 2016

(Females Only)

Attained Age	Years of Service									Total
	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
Under 20	-	-	-	-	-	-	-	-	-	0
20-24	-	-	-	-	-	-	-	-	-	0
25-29	2	1	-	-	-	-	-	-	-	3
30-34	5	3	-	-	-	-	-	-	-	8
35-39	2	-	1	-	-	-	-	-	-	3
40-44	9	16	-	-	-	-	-	-	-	25
45-49	17	17	-	-	-	-	-	-	-	34
50-54	4	7	1	1	-	1	-	-	-	14
55-59	9	5	1	1	2	-	-	-	-	18
60-64	14	2	2	5	1	1	-	-	-	25
65-69	9	2	-	1	-	-	-	-	-	12
70 & Over	1	2	-	1	-	-	-	-	-	4
w/o DOB	5	3	5	2	1	-	1	-	-	17
Total	77	58	10	11	4	2	1	0	0	163
Average Age										51.64
Average Service										2.83

For inactives without a birthdate on record, we assumed an average age of 58.38.

EXHIBIT D
PART III – AGE AND SERVICE DISTRIBUTION FOR INACTIVES – TOTAL
AS OF DECEMBER 31, 2016

(Males and Females Combined)

Attained Age	Years of Service									Total
	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
Under 20	-	-	-	-	-	-	-	-	-	0
20-24	3	3	-	-	-	-	-	-	-	6
25-29	9	8	-	-	-	-	-	-	-	17
30-34	20	20	-	1	-	-	-	-	-	41
35-39	23	17	6	6	3	-	-	-	-	55
40-44	44	44	6	5	2	1	-	-	-	102
45-49	60	40	11	5	9	1	-	-	-	126
50-54	121	34	7	8	3	7	4	-	-	184
55-59	248	57	5	4	13	-	3	-	-	330
60-64	153	59	9	8	5	5	1	-	-	240
65-69	88	36	7	4	-	-	-	-	-	135
70 & Over	113	75	9	8	7	2	5	2	-	221
w/o DOB	6	4	5	2	1	-	1	-	-	19
Total	888	397	65	51	43	16	14	2	0	1,476
Average Age										58.38
Average Service										2.33

For inactives without a birthdate on record, we assumed an average age of 58.38.

EXHIBIT E
STATISTICS ON EMPLOYEE ANNUITIES
CLASSIFIED BY AGE AS OF DECEMBER 31, 2016

Age	Male		Female	
	No.	Annual Payments	No.	Annual Payments
Under 50	2	\$ 7,476	-	\$ -
50-54	41	2,569,620	2	109,764
55-59	305	17,650,920	20	880,488
60-64	526	29,137,764	34	1,229,916
65-69	491	25,506,756	31	1,166,364
70-74	371	18,096,036	24	563,040
75-79	308	14,914,704	18	568,896
80-84	200	8,209,260	18	531,780
85-89	103	4,103,952	26	645,792
90-94	57	2,134,584	24	441,384
95-99	10	336,684	13	240,060
100 & over	1	17,364	8	117,420
Totals	2,415	\$ 122,685,120	218	\$ 6,494,904
Average Age	69.71		76.59	

EXHIBIT F
PART I – STATISTICS ON SURVIVING SPOUSE ANNUITIES
CLASSIFIED BY AGE AS OF DECEMBER 31, 2016

Age	Male		Female	
	No.	Annual Payments	No.	Annual Payments
Under 30	-	\$ -	-	\$ -
30-34	-	-	-	-
35-39	-	-	1	9,600
40-44	-	-	5	63,948
45-49	1	14,232	7	122,460
50-54	-	-	27	396,504
55-59	4	37,884	56	991,380
60-64	3	22,536	80	1,422,780
65-69	-	-	84	1,469,904
70-74	1	10,068	143	2,410,572
75-79	2	32,280	153	2,372,556
80-84	-	-	184	2,871,384
85-89	-	-	155	2,108,664
90-94	7	78,288	113	1,299,276
95-99	2	20,076	39	421,452
100 & over	-	-	6	57,600
Totals	20	\$ 215,364	1,053	\$ 16,018,080
Average Age	75.89		77.64	

EXHIBIT F
PART II – STATISTICS ON REVERSIONARY ANNUITIES
CLASSIFIED BY AGE AS OF DECEMBER 31, 2016

Age	Male		Female	
	No.	Annual Payments	No.	Annual Payments
Under 30	-	\$ -	-	\$ -
30-34	-	-	-	-
35-39	1	774	-	-
40-44	-	-	-	-
45-49	-	-	-	-
50-54	1	601	1	2,010
55-59	1	1,500	-	-
60-64	-	-	4	42,923
65-69	-	-	3	11,940
70-74	1	8,976	7	55,002
75-79	-	-	1	5,184
80-84	-	-	3	16,464
85 & Over	-	-	4	18,182
Totals	4	\$ 11,851	23	\$ 151,705
Average Age	54.65		74.11	

EXHIBIT F
PART III – STATISTICS ON CHILDREN ANNUITIES
CLASSIFIED BY AGE AS OF DECEMBER 31, 2016

Age	Male		Female	
	No.	Annual Payments	No.	Annual Payments
Under 6	-	\$ -	1	\$ 3,000
6	1	3,000	-	-
7	1	2,640	-	-
8	1	3,000	-	-
9	-	-	1	3,000
10	1	3,000	-	-
11	1	2,640	-	-
12	3	8,280	-	-
13	2	6,000	1	2,640
14	3	8,280	2	5,280
15	1	3,000	1	3,000
16	3	8,280	5	13,560
17	6	16,560	2	6,000
Totals	23	\$ 64,680	13	\$ 36,480
Average Age	14.01		14.70	

EXHIBIT G
PART I – NUMBER OF REFUND PAYMENTS MADE DURING 2016
TO MALE EMPLOYEES

Age at Date of Valuation	Length of Service at Date of Refund						Total
	Under 1 Year	Between 1 and 2	Between 2 and 3	Between 3 and 4	Between 4 and 5	5 and Over	
Under 20	-	-	-	-	-	-	-
20 to 24	-	-	-	1	-	-	1
25 to 29	-	-	1	1	2	-	4
30 to 34	-	1	-	1	1	1	4
35 to 39	1	-	1	1	1	1	5
40 to 44	-	-	-	-	-	1	1
45 to 49	-	-	-	-	1	1	2
50 to 54	-	1	-	-	-	1	2
55 to 59	-	3	-	-	-	2	5
60 & Over	4	-	-	-	1	-	5
Totals	5	5	2	4	6	7	29

PART II – NUMBER OF REFUND PAYMENTS MADE DURING 2016
TO FEMALE EMPLOYEES

Age at Date of Valuation	Length of Service at Date of Refund						Total
	Under 1 Year	Between 1 and 2	Between 2 and 3	Between 3 and 4	Between 4 and 5	5 and Over	
Under 20	-	-	-	-	-	-	-
20 to 24	-	-	1	-	1	-	2
25 to 29	-	-	-	1	-	-	1
30 to 34	-	-	-	-	-	1	1
35 to 39	-	-	-	-	-	-	-
40 to 44	-	-	-	1	-	-	1
45 to 49	-	-	-	-	1	2	3
50 to 54	1	-	-	-	-	1	2
55 to 59	-	-	-	-	-	-	-
60 & Over	-	-	-	-	-	-	-
Totals	1	-	1	2	2	4	10

Includes those who took a refund from both active and inactive status.

EXHIBIT H
HEALTH INSURANCE COVERAGE
CLASSIFIED BY AGE AS OF DECEMBER 31, 2016

<u>Age</u>	<u>Single Coverage</u>	<u>Family Coverage</u>	<u>Total Covered</u>	<u>Total Not Covered</u>	<u>Total Annuitants</u>	<u>% Covered Annuitants</u>
Employee Annuitants						
30-39	-	-	-	-	-	0.00%
40-49	-	-	-	2	2	0.00%
50-59	95	43	138	230	368	37.50%
60-69	346	222	568	514	1,082	52.50%
70-79	244	259	503	218	721	69.76%
80-89	153	90	243	104	347	70.03%
90 & Over	57	14	71	42	113	62.83%
Total	895	628	1,523	1,110	2,633	57.84%
Spouse Annuitants						
30-39	-	-	-	1	1	0.00%
40-49	1	1	2	11	13	15.38%
50-59	9	3	12	75	87	13.79%
60-69	44	1	45	122	167	26.95%
70-79	157	1	158	141	299	52.84%
80-89	214	3	217	122	339	64.01%
90 & Over	97	-	97	70	167	58.08%
Total	522	9	531	542	1,073	49.49%

EXHIBIT I
PART I – MALE PARTICIPANTS RECEIVING DUTY DISABILITY
CLASSIFIED BY AGE AND LENGTH OF SERVICE AS OF DECEMBER 31, 2016

Service:	Under 1 Year		1 to 4		5 to 9		10 to 14		15 to 19		20 & Over		Total	
Attained Age	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments
Under 30	-	\$ -	-	\$ -	-	\$ -	1	\$ 44,117	-	\$ -	-	\$ -	1	\$ 44,117
30 to 34	-	-	-	-	2	96,689	5	253,531	3	191,724	-	-	10	541,944
35 to 39	-	-	-	-	1	68,406	8	387,300	3	154,643	-	-	12	610,349
40 to 44	-	-	1	28,720	2	92,274	13	595,545	10	491,306	1	44,117	27	1,251,962
45 to 49	-	-	-	-	2	100,682	10	467,688	10	501,742	17	874,458	39	1,944,570
50 to 54	-	-	1	33,509	4	175,578	5	233,111	3	147,576	14	737,147	27	1,326,921
55 to 59	-	-	-	-	2	102,554	5	239,226	2	122,070	5	207,231	14	671,081
60 & Over	-	-	-	-	-	-	3	161,538	4	197,870	7	322,482	14	681,890
Totals	-	\$ -	2	\$ 62,229	13	\$ 636,183	50	\$ 2,382,056	35	\$ 1,806,931	44	\$ 2,185,435	144	\$ 7,072,834

PART II – FEMALE PARTICIPANTS RECEIVING DUTY DISABILITY
CLASSIFIED BY AGE AND LENGTH OF SERVICE AS OF DECEMBER 31, 2016

Service:	Under 1 Year		1 to 4		5 to 9		10 to 14		15 to 19		20 & Over		Total	
Attained Age	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments
Under 30	-	\$ -	-	\$ -	2	\$ 94,099	-	\$ -	-	\$ -	-	\$ -	2	\$ 94,099
30 to 34	-	-	1	30,420	-	-	-	-	-	-	-	-	1	30,420
35 to 39	-	-	-	-	1	61,152	2	108,607	1	53,227	-	-	4	222,986
40 to 44	-	-	-	-	3	127,483	4	201,848	2	107,094	1	54,288	10	490,713
45 to 49	-	-	1	30,420	1	57,720	4	214,952	4	213,002	2	112,304	12	628,398
50 to 54	-	-	1	32,401	1	41,730	1	52,182	4	221,504	2	107,209	9	455,026
55 to 59	-	-	-	-	-	-	3	138,294	4	221,192	4	216,684	11	576,170
60 & Over	-	-	-	-	-	-	1	55,380	3	164,034	3	156,187	7	375,601
Totals	-	\$ -	3	\$ 93,241	8	\$ 382,184	15	\$ 771,263	18	\$ 980,053	12	\$ 646,672	56	\$ 2,873,413

Benefit payments are annual amount before Workers' Compensation offset.

EXHIBIT I (CONT'D)
PART III – MALE PARTICIPANTS RECEIVING ORDINARY DISABILITY
CLASSIFIED BY AGE AND LENGTH OF SERVICE AS OF DECEMBER 31, 2016

Service:	Under 1 Year		1 to 4		5 to 9		10 to 14		15 to 19		20 & Over		Total	
Attained	Annual		Annual		Annual		Annual		Annual		Annual		Annual	
Age	No.	Payments	No.	Payments	No.	Payments	No.	Payments	No.	Payments	No.	Payments	No.	Payments
Under 30	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -
30 to 34	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35 to 39	-	-	-	-	-	-	2	71,677	1	39,520	-	-	3	111,197
40 to 44	-	-	-	-	-	-	-	-	-	-	1	47,910	1	47,910
45 to 49	-	-	1	22,287	-	-	1	52,756	1	40,768	3	121,056	6	236,867
50 to 54	-	-	-	-	-	-	-	-	2	71,677	4	147,233	6	218,910
55 to 59	-	-	-	-	-	-	-	-	4	149,698	4	155,511	8	305,209
60 & Over	-	-	-	-	-	-	-	-	6	237,952	5	193,784	11	431,736
Totals	-	\$ -	1	\$ 22,287	-	\$ -	3	\$ 124,433	14	\$ 539,615	17	\$ 665,494	35	\$ 1,351,829

PART IV – FEMALE PARTICIPANTS RECEIVING ORDINARY DISABILITY
CLASSIFIED BY AGE AND LENGTH OF SERVICE AS OF DECEMBER 31, 2016

Service:	Under 1 Year		1 to 4		5 to 9		10 to 14		15 to 19		20 & Over		Total	
Attained	Annual		Annual		Annual		Annual		Annual		Annual		Annual	
Age	No.	Payments	No.	Payments	No.	Payments	No.	Payments	No.	Payments	No.	Payments	No.	Payments
Under 30	-	\$ -	1	\$ 20,925	-	\$ -	-	\$ -	-	\$ -	-	\$ -	1	\$ 20,925
30 to 34	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35 to 39	-	-	-	-	1	36,920	-	-	-	-	-	-	1	36,920
40 to 44	-	-	-	-	-	-	2	76,960	-	-	-	-	2	76,960
45 to 49	-	-	-	-	-	-	2	72,093	-	-	-	-	2	72,093
50 to 54	-	-	-	-	-	-	-	-	-	-	2	73,965	2	73,965
55 to 59	-	-	-	-	-	-	-	-	2	60,455	-	-	2	60,455
60 & Over	-	-	-	-	-	-	1	36,192	2	71,677	-	-	3	107,869
Totals	-	\$ -	1	\$ 20,925	1	\$ 36,920	5	\$ 185,245	4	\$ 132,132	2	\$ 73,965	13	\$ 449,187

EXHIBIT J
HISTORY OF AVERAGE ANNUAL SALARIES

Year Ended	Members in Service	Percent Increase	Annual Salaries	Percent Increase	Average Salary	Percent Increase	Actuarial Salary Assumption	CPI Chicago ¹
2007	3,138	(2.40)%	\$ 192,847,482	(0.17)%	\$ 61,456	2.28 %	4.50 %	4.73 %
2008	3,325	5.96 %	216,744,211	12.39 %	65,186	6.07 %	4.50 %	(0.58)%
2009	3,124	(6.05)%	208,626,493	(3.75)%	66,782	2.45 %	4.50 %	2.54 %
2010	2,956	(5.38)%	199,863,410	(4.20)%	67,613	1.24 %	4.50 %	1.23 %
2011	2,852	(3.52)%	195,238,332	(2.31)%	68,457	1.25 %	4.50 %	2.06 %
2012	2,865	0.46 %	198,789,741	1.82 %	69,386	1.36 %	4.50 %	1.68 %
2013	2,844	(0.73)%	200,351,820	0.79 %	70,447	1.53 %	3.75 %	0.51 %
2014	2,837	(0.25)%	202,673,014	1.16 %	71,439	1.41 %	3.75 %	1.48 %
2015	2,816	(0.74)%	204,772,903	1.04 %	72,718	1.79 %	3.75 %	0.00 %
2016	2,822	0.21 %	208,154,918	1.65 %	73,761	1.44 %	3.75 %	1.86 %
Average Increase (Decrease) for the								
Last Five Years		(0.21)%		1.29 %		1.50 %	3.90 %	1.10 %

¹ CPI-Chicago as of the valuation date.

EXHIBIT K
PART I – NEW ANNUITIES GRANTED DURING 2016

	Male Annuitants	Female Annuitants	Spouse of Deceased Employees	Spouse of Deceased Annuitants
Number Retired/Deceased	65	9	3	36
Average Age Attained	62.7	62.1	50.9	73.9
Average Length of Service	26.8	22.9	19.5	N/A
Total Annual Final Salary	\$ 5,300,325	\$ 712,844	\$ 216,694	N/A
Average Annual Final Salary	\$ 81,543	\$ 79,205	\$ 72,231	N/A
Total Annual Annuity	\$ 2,853,492	\$ 365,916	\$ 49,524	\$ 888,996
Average Annual Annuity	\$ 43,900	\$ 40,657	\$ 16,508	\$ 24,694
Total Actuarial Liability	\$ 37,932,370	\$ 5,355,767	\$ 600,395	\$ 7,333,057
Average Actuarial Liability	\$ 583,575	\$ 595,085	\$ 200,132	\$ 203,696
Total Contributed by EE ¹	\$ 5,832,264	\$ 769,519	\$ 223,697	N/A
Average Contribution	\$ 89,727	\$ 85,502	\$ 74,566	N/A
Liability/Contributions	6.50	6.96	2.68	N/A
Liability/Final Pay	7.16	7.51	2.77	N/A
Expected Future Lifetime (yrs.)	19.03	24.39	34.62	15.64
Payback Period (yrs.)	2.0439	2.1030	4.5170	N/A
Replacement Ratio ²	53.84 %	51.33 %	22.85 %	N/A

¹ Includes "Pickup."

² Ratio of average annual annuity to average annual final salary.

EXHIBIT K
PART II – INITIAL YEAR OF RETIREMENT ANALYSIS

	Years of Credited Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+		
2011										
Avg Monthly Annuity	\$ 355	\$ -	\$ 1,701	\$ 1,941	\$ 2,790	\$ 3,665	\$ 5,013	\$ 5,411	\$ 4,107	
Avg Monthly FAS	\$ 7,085	\$ -	\$ 5,923	\$ 5,048	\$ 5,397	\$ 5,734	\$ 6,609	\$ 6,772	\$ 6,326	
Number of Retirees	8	-	12	6	13	22	86	16	163	
2012										
Avg Monthly Annuity	\$ 258	\$ 636	\$ 1,256	\$ 2,512	\$ 2,705	\$ 3,833	\$ 5,013	\$ 5,730	\$ 3,824	
Avg Monthly FAS	\$ 4,613	\$ 5,519	\$ 4,895	\$ 5,716	\$ 5,258	\$ 6,004	\$ 6,580	\$ 7,162	\$ 6,085	
Number of Retirees	4	6	9	9	22	17	54	15	136	
2013										
Avg Monthly Annuity	\$ 364	\$ 745	\$ 1,653	\$ 2,517	\$ 2,710	\$ 3,726	\$ 4,853	\$ 4,566	\$ 3,575	
Avg Monthly FAS	\$ 7,849	\$ 6,176	\$ 5,380	\$ 5,962	\$ 5,312	\$ 5,701	\$ 6,339	\$ 5,711	\$ 5,895	
Number of Retirees	3	3	9	9	19	20	34	15	112	
2014										
Avg Monthly Annuity	\$ 314	\$ 635	\$ 1,067	\$ 2,557	\$ 3,065	\$ 3,612	\$ 5,469	\$ 5,568	\$ 3,991	
Avg Monthly FAS	\$ 5,938	\$ 5,293	\$ 3,384	\$ 6,374	\$ 5,876	\$ 5,545	\$ 7,051	\$ 6,866	\$ 6,313	
Number of Retirees	5	1	2	9	21	19	38	7	102	
2015										
Avg Monthly Annuity	\$ 324	\$ 1,003	\$ 1,041	\$ 2,204	\$ 2,859	\$ 3,895	\$ 5,363	\$ 4,471	\$ 3,830	
Avg Monthly FAS	\$ 7,853	\$ 6,679	\$ 3,770	\$ 5,643	\$ 5,699	\$ 6,033	\$ 6,841	\$ 6,227	\$ 5,838	
Number of Retirees	2	5	1	9	15	21	30	9	92	
2016										
Avg Monthly Annuity	\$ 412	\$ 572	\$ 2,596	\$ 2,588	\$ 3,035	\$ 3,887	\$ 5,386	\$ 5,277	\$ 3,625	
Avg Monthly FAS	\$ 10,379	\$ 3,289	\$ 8,013	\$ 6,176	\$ 5,813	\$ 6,215	\$ 7,053	\$ 6,611	\$ 6,653	
Number of Retirees	6	1	1	10	17	16	15	8	74	

EXHIBIT L
NEW RECIPROCAL ANNUITIES GRANTED DURING 2016

	Reciprocal	
	Male Annuitants	Female Annuitants
Number Retired	11	0
Average Age Attained	64.1	N/A
Number with Spouses	9	N/A
Average Spouse Age	58.5	N/A
Percentage with Spouse	81.82%	N/A
Total Annual Annuity	\$ 232,692	\$ N/A
Average Annual Annuity	\$ 21,154	\$ N/A
Total Liability (7.5% RP 2000)	\$ 3,090,547	\$ N/A
Average Liability	\$ 280,959	\$ N/A

EXHIBIT M
HISTORY OF RETIREES AND BENEFICIARIES BY TYPE OF BENEFIT

Years	Annuitants				Disability		Compensation	Reciprocal	
	Employee	Spouse	Child	Reversionary ³	Ordinary	Duty	Annuitants ²	Employee	Spouse
2007 ¹	2,388	1,254	45		58	118	1	256	62
2008 ¹	2,380	1,236	47		61	145	1	266	62
2009	2,413	1,210	41		62	188	1	270	62
2010	2,429	1,197	39		44	184	1	273	58
2011 ¹	2,438	1,158	38		54	190	1	283	63
2012	2,448	1,122	35	22	60	195	1	289	60
2013	2,433	1,102	38	24	50	174	1	294	63
2014	2,394	1,092	30	26	53	163	1	296	64
2015	2,362	1,059	32	27	51	188	1	303	63
2016	2,324	1,016	36	27	48	197	1	309	57

¹ Includes one Reversionary Annuitant included as a Spouse Annuitant that is not a Spouse Annuitant.

² Compensation Annuitant is also included as a Spouse Annuitant.

³ Prior to December 31, 2012, Reversionary Annuitants were included with Spouse Annuitants.

EXHIBIT N
HISTORY OF AVERAGE EMPLOYEE RETIREMENT BENEFITS PAYABLE

Year Ended	Average Annual Benefit	Average Current Age of Retirees	Average Annual Benefit at Retirement Current Year	Average Age at Retirement Current Year	Average Years Service at Retirement Current Year
2007	\$33,242	70.9	\$42,234	57.0	29.82
2008	35,037	70.7	44,496	56.3	30.11
2009	36,868	70.3	44,581	57.8	29.29
2010	38,962	70.0	48,489	58.2	29.09
2011	41,056	69.6	49,135	58.0	29.54
2012	42,688	69.6	46,231	58.6	28.16
2013	44,264	69.8	42,895	60.5	27.94
2014	45,968	69.8	47,940	60.5	27.89
2015	47,474	69.9	46,460	60.6	28.09
2016	49,062	70.3	43,506	62.6	26.29

EXHIBIT O
SURVIVING SPOUSES RECEIVING BENEFITS AS OF DECEMBER 31, 2016
BY AGE AND YEARS IN PAY STATUS

Attained Age	Number of Years in Pay Status						Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 & Over	
Under 30	-	-	-	-	-	-	-
30 to 34	-	-	-	-	-	-	-
35 to 39	-	1	1	-	-	-	2
40 to 44	-	3	-	1	1	-	5
45 to 49	1	3	2	1	-	1	8
50 to 54	1	8	10	8	-	2	29
55 to 59	4	16	15	13	7	6	61
60 to 64	3	21	20	28	7	8	87
65 to 69	2	23	17	17	16	12	87
70 to 74	4	39	27	37	16	29	152
75 to 79	4	17	41	27	25	42	156
80 to 84	5	27	43	33	21	58	187
85 & Over	5	32	44	48	47	150	326
Totals	29	190	220	213	140	308	1,100

Includes 22 Reversionary Annuitants that are also Spouse Annuitants and 5 Reversionary Annuitants that are not Spouse Annuitants.

EXHIBIT P
HISTORY OF ANNUITIES 2007 – 2016

Employee Annuitants (Male and Female)			
Year Ended	Number of Annuitants	Total Annuities	Average Annuities
2007	2,644	\$ 87,891,144	\$ 33,242
2008	2,646	92,708,484	35,037
2009	2,683	98,915,980	36,868
2010	2,702	105,275,352	38,962
2011	2,721	111,712,416	41,056
2012	2,737	116,835,786	42,688
2013	2,727	120,707,652	44,264
2014	2,690	123,652,788	45,968
2015	2,665	126,518,076	47,474
2016	2,633	129,180,024	49,062
Surviving Spouse and Reversionary Annuitants			
Year Ended	Number of Annuitants	Total Annuities	Average Annuities
2007 ¹	1,316	\$ 15,164,628	\$ 11,523
2008 ¹	1,298	15,281,964	11,773
2009	1,272	15,375,816	12,088
2010	1,255	15,605,676	12,435
2011 ¹	1,221	15,583,920	12,763
2012 ²	1,204	15,579,660	12,940
2013 ³	1,189	15,757,533	13,253
2014 ⁴	1,182	16,357,413	13,839
2015 ⁴	1,149	16,567,370	14,419
2016 ⁵	1,100	16,397,000	14,906

¹Includes one Reversionary Annuitant.

²Includes 20 Reversionary Annuitants that are also Spouse Annuitants.

³Includes 21 Reversionary Annuitants that are also Spouse Annuitants.

⁴Includes 23 Reversionary Annuitants that are also Spouse Annuitants.

⁵Includes 22 Reversionary Annuitants that are also Spouse Annuitants.

EXHIBIT Q
SCHEDULE OF RETIRED MEMBERS
BY AMOUNT AND TYPE OF BENEFIT AS OF DECEMBER 31, 2016

Amount of Monthly Benefit	Number of Employee Annuitants	Number of Spouse Annuitants	Number of Reversionary Annuitants ¹	Number of Child Annuitants	Total Number of Annuitants
\$ 1 - 250	35	15	8	36	94
251 - 500	37	4	9	-	50
501 - 750	36	9	5	-	50
751 - 1,000	29	526	1	-	556
1,001 - 1,250	29	111	3	-	143
1,251 - 1,500	122	104	-	-	226
1,501 - 1,750	47	76	-	-	123
1,751 - 2,000	65	80	1	-	146
2,001 - 2,250	67	53	-	-	120
2,251 - 2,500	76	39	-	-	115
2,501 - 2,750	75	21	-	-	96
2,751 - 3,000	89	12	-	-	101
3,001 - 3,250	80	12	-	-	92
3,251 - 3,500	85	4	-	-	89
3,501 - 3,750	109	4	-	-	113
3,751 - 4,000	126	1	-	-	127
4,001 - 4,250	158	1	-	-	159
4,251 - 4,500	198	-	-	-	198
4,501 - 4,750	205	-	-	-	205
4,751 - 5,000	209	-	-	-	209
5,001 - 5,250	168	1	-	-	169
5,251 - 5,500	121	-	-	-	121
5,501 - 5,750	65	-	-	-	65
5,751 - 6,000	71	-	-	-	71
6,001 - 6,250	66	-	-	-	66
6,251 - 6,500	64	-	-	-	64
6,501 - 6,750	38	-	-	-	38
6,751 - 7,000	39	-	-	-	39
7,001 - 7,250	24	-	-	-	24
7,251 - 7,500	27	-	-	-	27
Over \$7,500	73	-	-	-	73
Totals	2,633	1,073	27	36	3,769

¹Includes 22 reversionary annuitants that are also spouse annuitants.

**ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2016**

ACTUARIAL METHODS AND ASSUMPTIONS

AS OF DECEMBER 31, 2016

ACTUARIAL COST METHOD

An Actuarial Cost Method is a set of techniques used by the actuary to develop contribution levels under a retirement plan. The principal Actuarial Cost Method used in this valuation is the Entry Age Normal Actuarial Cost Method. Under this Method, a Normal Cost is developed by spreading the actuarial value of benefits expected to be received by each active participant over the total working lifetime of that participant, from date of hire to termination, as a level percentage of pay.

To the extent that current assets and future Normal Costs do not support participants' expected future benefits, an Unfunded Actuarial Accrued Liability ("UAAL") develops. The UAAL is generally amortized over a defined period of time (e.g., 30 years). The total contribution developed under this method is typically the sum of the Normal Cost and the payment toward the UAAL.

Estimated annual administrative expenses are usually added to the normal cost. This method is used for LABF.

CURRENT ACTUARIAL ASSUMPTIONS

(Adopted as of December 31, 2012, unless otherwise stated)

Demographic Assumptions

Post Retirement Mortality: RP-2000 Combined Healthy mortality table, sex distinct, set forward one year for males and setback two years for females. No adjustment is made for post-disabled mortality. The mortality table used is a static table and provides an estimated margin of 18 percent for future mortality improvements.

Pre-Retirement Mortality: 80 percent of post-retirement mortality.

Mortality assumptions first adopted for the December 31, 2011, valuation.

Disability: Disability cost valued as a term cost of 2.50 percent of payroll.

**ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2016 (CONT'D)**

RATE OF RETIREMENT:

Tier 1 Age-and-Service-Based Rates of Retirement

Attained Age	<u>Years of Service</u>								
	10	11-14	15-19	20-24	25-29	30-32	33-34	35-39	40+
50-54	-	-	-	-	-	24 %	40 %	35 %	100 %
55-59	-	-	-	16 %	24 %	24	40	35	100
60-64	16 %	10 %	10 %	16	24	24	40	35	100
65-69	16	16	24	24	24	24	40	35	100
70-79	24	24	24	24	24	24	40	40	100
80+	100	100	100	100	100	100	100	100	100

Tier 2 Age-and-Service-Based Rates of Retirement

Attained Age	<u>Years of Service</u>	
	10-39	40+
62-66	24 %	100 %
67-69	40	100
70-79	40	100
80+	100	100

**ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2016 (CONT'D)**

RATE OF TERMINATION:

<u>Service¹</u>	<u>Rate</u>
0	8.00%
1	7.00%
2-3	5.00%
4-9	4.00%
10-15	3.00%
16-19	2.00%
20-29	1.50%
30+	1.00%

¹Based on service at beginning of valuation year.

Economic Assumptions

Investment Return Rate and Discount Rate: 7.50 percent per annum (net of investment expense). The 7.50 percent assumption is composed of a 3.00 percent inflation assumption and a 4.50 percent real rate of return assumption.

Future Salary Increases: The assumed base rate of individual salary increase is 3.75 percent per year, plus a service-based increase in the first 15 years.

Completed Years of Service¹	Additional Increase	Total Increase
1	6.25 %	10.00 %
2	4.75	8.50
3	3.75	7.50
4	3.25	7.00
5	2.25	6.00
6	1.25	5.00
7 – 15	0.25	4.00
16 – 30+	0.00	3.75

¹Based on projected service at end of valuation year.

Asset Value: The Actuarial Value of Assets is smoothed by using a five-year phase-in of each year's unexpected investment gains and losses.

Expenses: Administrative expenses included in the normal cost are based on the previous years' administrative expenses increased by 3.0 percent and discounted to the beginning of the year. Future administrative expenses are assumed to increase at the assumed inflation assumption of 3.0 percent.

**ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2016 (CONT'D)**

Projection Assumptions

Population: The active population is assumed to remain stable at the December 31, 2016, level.

New Entrant Profile: New entrants in the projection are assumed to have the following characteristics:

	Before Pay Cap	After Pay Cap
Average Age:	34.38	34.38
Average Salary:	\$ 58,235	\$ 58,212
Minimum Salary:	\$ 11,427	\$ 11,427
Maximum Salary:	\$131,842	\$112,408

New entrant characteristics are based upon current members that have been hired in the last 10 years. Approximately 74 percent of new entrants are assumed to be male.

Individual member new entrant uncapped pay at hire date is assumed to increase by 3.75 percent over the individual member new entrant pay during the prior period.

New entrant pay is calculated explicitly each year for each individual new entrant and is tested against the pensionable pay cap in the applicable year.

Individual new entrant pay once hired is assumed to increase in accordance with the salary increase assumptions used in the actuarial valuation until the pensionable pay cap is reached. Thereafter, pay increases at the same rate as the pay cap.

P.A. 96-0889 and P.A. 96-1490 Assumptions: Capped (pensionable pay) was \$112,408.42 for fiscal year 2017 and increases at ½ CPI thereafter.

Employee and employer contributions and benefits are based on capped pay.

The annual increase in the Consumer Price Index-U is assumed to be 3.0 percent for all years.

Disability Payments in Lieu are assumed to reduce the applicable members' contributions used in the determination of the City's contribution by 7.6 percent.

Other Assumptions

Marital Status: It is assumed that 85 percent of active members have an eligible spouse. The male spouse is assumed to be four years older than the female spouse. No assumption is made about other dependents.

**ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2016 (CONT'D)**

Disability:	Liability for disability benefits is recognized as a one-year term cost of 2.50 percent of pay added to the normal cost.
Reciprocal Service:	No assumption for reciprocal service.
Benefit Service:	Exact fractional years of service are used to determine the amount of benefit payable.
Decrement Timing:	All decrements are assumed to occur mid-year.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation:	Turnover decrements do not operate after member reaches retirement eligibility for a minimum annuity formula benefit.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service on the date the decrement is assumed to occur.
Pay Increase Timing:	Middle of (fiscal) year.
Group Health Insurance:	Due to P.A. 98-0043 effective June 28, 2013, it is assumed for valuation purposes that the health insurance supplement in effect prior to June 30, 2013, has ended on December 31, 2016, for all employee annuitants (and their future surviving spouses) and is not valued beginning with the December 31, 2016, actuarial valuation. Prior to December 31, 2016, the amount of the Fund paid health insurance from July 1, 2008, until December 31, 2016, was \$95.00 per month for each annuitant (employees and surviving spouses) not qualified to receive Medicare benefits, and \$65.00 if qualified. It was assumed that all annuitants age 65 and older would be eligible for Medicare and all annuitants less than age 65 would not be eligible for Medicare. Future surviving spouses of retirees, age 65 and older, were assumed to be eligible for Medicare, as well as surviving spouse annuitants who were currently receiving a health insurance supplement. It was assumed that 75 percent of future retirees would elect to receive the health insurance supplement at retirement, first adopted for the valuation as of December 31, 2011.
Loss in Tax Levy:	4.00 percent loss on tax levy is assumed.

**ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2016 (CONT'D)**

THREE METHODS OF FINANCING UNFUNDED LIABILITY

Normal Cost

Plus Interest Method: This is the method that was used in actuarial valuations prior to 1997. It is intended to continue the current provisions of the Article governing the Plan in full force and effect on a permanent basis and in the amount required each year to keep the unfunded liability from increasing if all assumptions are realized.

The normal cost plus interest only method of funding is that recommended by the former Illinois Public Employees' Pension Laws Commission. It was also the minimum required for private pension plans for IRS qualification before ERISA.

Normal Cost Plus

Amortization

Method:

We have calculated the cost of amortizing the existing unfunded liability under a 30-year open amortization period.

Both of these cost methods, the normal cost plus interest method and the normal cost plus amortization method, express the past service costs as a level annual dollar amount. It assumes that there will be a stable membership with a growing payroll. Consequently, as the total payroll increases in the future, the level annual dollar amount becomes a decreasing percent of the total payroll.

Under both methods, level dollar amounts represent a greater percent of payroll initially and a decreasing percent of payroll as future payrolls increase.

**ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2016 (CONT'D)**

THREE METHODS OF FINANCING UNFUNDED LIABILITY (CONT'D)

Level Annual Percent
of Payroll Method:

An alternative method for funding that is commonly used for public employee pension plans is a method that sets the funding standard cost objective as a level annual percent of payroll rather than as a level annual dollar amount. This method will result in increasingly greater dollar amounts each year as payrolls increase.

For the Retirement Board's guidance, we have estimated the financial effects of these different amortization methods. The costs under these funding methods are contingent upon all actuarial assumptions being met and continued active membership at the same level. These three methods meet the requirements set forth in Illinois Compiled Statutes, Chapter 40, and Section 5/1A-102.

Actuarial Assets with Various Amortization Methods	Required 2017 Tax Levy	Required Multiple Employer Contribution	Unfunded Liability Will	Employer Contribution Portion Applicable to Unfunded Liability
1. Normal Cost Plus Interest Only	N/A	7.38	Remain Constant	\$86,902,859
2. Normal Cost Plus 30-Year Level Dollar Amortization	N/A	8.14	Decrease	\$98,108,966
3. Normal Cost Plus 30-Year Level % of Payroll	N/A	5.84	Increase	\$66,303,510
4. Present Law	\$15,257,700	1.00		

When evaluating and selecting a funding policy, it is important to consider the projected improvement of the funded ratio over time. In addition, the current and projected future funded status can change significantly downward or upward due to unfavorable or favorable experience on investment returns, salary increases, retirement patterns, longevity and changing plan membership.

**SUMMARY OF PROVISIONS OF THE FUND
AS OF DECEMBER 31, 2016**

**SUMMARY OF
PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016**

PLAN DESCRIPTION

Any employee of the City of Chicago or the Board of Education employed under the provisions of the municipal personnel ordinance as labor service or any person employed by a retirement board of any annuity and benefit fund in the city is covered by the Laborers' and Retirement Board Employees' Annuity and Benefit Fund of Chicago (Laborers' Plan) which is a defined benefit single employer pension plan with a money purchase minimum. Although this is a single employer plan, the defined benefits, as well as the employer and employee contribution levels, are mandated in Illinois Compiled Statutes (Chapter 40, Pensions, Article 5/11) and may be amended only by the Illinois legislature. The City of Chicago accounts for the plan as a pension trust fund. The City of Chicago payroll for employees covered by the Laborers' Plan for the year ended December 31, 2016, was \$208,154,918. At December 31, 2016, the Laborers' Plan membership consisted of:

Retiree, surviving spouse, reversionary annuitant and child annuitants currently receiving benefits	3,769
Terminated inactive employees entitled to benefits or a refund of contributions but not yet receiving them	1,476
Current employees (includes 245 disabilities)	2,822

The Laborers' Fund provides retirement benefits as well as death and disability benefits. Employees age 55 or more with at least 10 years of service are entitled to receive a money purchase annuity with partial city contributions if under age 60 with less than 20 years of service. Employees age 55 or more with at least 20 years of service or age 50 or more with at least 30 years of service are entitled to receive a minimum formula annuity of 2.4 percent per year of service times the final average salary (highest average annual salary for any 4 consecutive years within the last 10 years of service immediately preceding the date of retirement). If the employee retires prior to age 60, the annuity shall be reduced by $\frac{1}{4}$ of 1.00 percent for each month the employee is under age 60, unless the employee is 50 or over with at least 30 years of service or 55 or over with at least 25 years of service. The original annuity is limited to 80 percent of the highest average annual salary. Beginning January 1, 1999, there is a 10-year deferred vested benefit payable at age 60. Employees who retire at age 60 or over with at least 10 years of service are entitled to a minimum of \$850 per month.

The monthly annuity is increased by 3.00 percent in January of the year of the first payment date following the later of age 60 or the first anniversary of retirement, and by 3.00 percent annually thereafter; except that for an employee retiring prior to age 60 the first increase will occur no later than January of the year of the first payment date following the later of (1) the third anniversary of retirement or (2) the attainment of age 53.

Participants that first became members on or after January 1, 2011, are subject to different retirement eligibility conditions and benefit provisions as described on the following pages.

**SUMMARY OF
PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016 (CONT'D)**

PLAN DESCRIPTION (CONT'D)

Covered employees are required to contribute 8.50 percent of their salary to the Laborers' Plan. If an employee leaves covered employment without qualifying for an annuity, accumulated contributions are refunded with 3.00 percent interest.

The City of Chicago is required by state statutes to contribute the remaining amounts necessary to finance the requirements of the Fund. It is required to levy a tax at a rate not more than an amount equal to the total amount of contributions by the employees to the Fund made in the calendar year two years prior to the year for which the annual applicable tax is levied, multiplied by 1.00 annually. The total amount of contributions by the employees for purposes of establishing the tax levy amount shall not include contributions for service credit purchases under the Early Retirement Incentive provided for in Section 11-133.3 of the Illinois Pension Code.

Participants that first became members on or after January 1, 2011, are subject to a cap on pensionable salary upon which contributions are made as described on the following pages.

DEFINITIONS

These terms are defined in Article 1A of the Illinois Pension Code *Regulation of Public Pensions*.

“Accrued liability” means the actuarial present value of future benefit payments and appropriate administrative expenses under a plan, reduced by the actuarial present value of all future normal costs (including any participant contributions) with respect to the participant included in the actuarial valuation of the plan.

“Actuarial present value” means the single amount, as of a given valuation date, that results from applying actuarial assumptions to an amount or series of amounts payable or receivable at various times.

“Actuarial value of assets” means the value assigned by the actuary to the assets of a plan for the purposes of an actuarial valuation.

“Beneficiary” means a person eligible for or receiving benefits from the pension fund.

“Credited projected benefit” means that portion of a participant's projected benefit based on an allocation taking into account service to date determined in accordance with the terms of the plan based on anticipated future compensation.

“Current value” means the fair market value when available; otherwise, the fair value as determined in good faith by a trustee, assuming an orderly liquidation at the time of the determination.

“Normal cost” means that part of the actuarial present value of all future benefit payments and appropriate administrative expenses assigned to the current year under the actuarial valuation method used by the plan (excluding any amortization of the unfunded accrued liability).

**SUMMARY OF
PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016 (CONT'D)**

“Participant” means a participating member or deferred pensioner or annuitant of the pension fund, or a beneficiary thereof.

“Pension Fund” or “Fund” means the Laborers’ and Retirement Board Employees’ Annuity and Benefit Fund of Chicago established under Article 11 of the Illinois Pension Code.

“Plan year” means the calendar year for which the records of a given plan are kept.

“Projected benefits” means benefit amounts which are expected to be paid at various future times under a particular set of actuarial assumptions, taking into account, as applicable, the effect of advancement in age and past and anticipated future compensation and service credits.

“Supplemental annual cost” means that a portion of the unfunded accrued liability is assigned to the current year under one of the following bases:

1. Interest only on the unfunded accrued liability;
2. The level annual amount required to amortize the unfunded accrued liability over a period not exceeding 30 years (40 years for pension unfunded accrued liability prior to 2007); and
3. The amount required for the current year to amortize the unfunded accrued liability over a period not exceeding 30 years as a level percentage of payroll (40 years for pension unfunded accrued liability prior to 2007).

“Total annual cost” means the sum of the normal cost plus the supplemental annual cost.

“Unfunded accrued liability” means the excess of the accrued liability over the actuarial value of the assets of a plan.

“Vested pension benefit” means an interest obtained by a participant or beneficiary in that part of an immediate or deferred benefit under a plan which arises from the participant’s service and is not conditional upon the participant’s continued service for an employer any of whose employees are covered under the plan, and which has been forfeited under the terms of the plan.

PARTICIPANTS

Any person employed by the City or the Board of Education in a position classified as labor service of the employer, any person employed by the Board and any person employed by the Retirement Board of any other Annuity and Benefit Fund which is in operation for the employer.

SERVICE

For minimum annuity, one half-year credit is given for one complete month of service and a full year credit is given for one complete month of service plus service in at least five other months. For money purchase annuity, 700 hours of service in any calendar year constitutes one year of service credit. For Ordinary Disability credit, the exact number of days, months and years is used.

**SUMMARY OF
PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016 (CONT'D)**

RETIREMENT ANNUITY

Money Purchase Formula

Maximum is 60 percent of highest salary. Applies in cases where an employee is age 55 or older and has a minimum of 10 years of service. If employee is age 55 to 60 with service less than 20 years, the annuity is based on all employee deductions plus 1/10th of the City contributions for each year over 10. In the case of withdrawal before age 55 and application after age 55, the annuity is based on employee deductions plus 1/10th of the City contributions for each year over 10, with interest to date of application or age 55, whichever is later. The age factor for age 55 is used.

The annuity is based on all employee deductions and City contributions in cases where the employee is (a) age 55 to 60 with 20 or more years of service; (b) age 60 or older; or (c) resigning at the time of disability credit expiration.

Minimum Annuity Formula

Maximum is 80 percent of final average salary.

An employee age 60 or older with at least 10 years of service, or an employee age 55 or older, with at least 20 years of service, or an employee age 50 or older with at least 30 years of service, is entitled to an annuity equal to 2.40 percent, for each year of service of the final average salary during the four highest consecutive years within the last 10 years of service prior to retirement. If the employee withdraws from service before age 60 with less than 20 years of service, he can begin to receive an annuity no earlier than age 60. For an employee who is eligible to begin receiving an annuity before age 60, the annuity is discounted 0.25 percent for each month the employee is younger than age 60, unless he has at least 30 years of service and is age 50 or over, or has at least 25 years of service and is age 55 or over.

The employee will receive a minimum annuity of \$850 per month if the employee withdraws from service at age 60 or older with at least 10 years of service.

Participants that first became members on or after January 1, 2011, are first eligible for an unreduced annuity benefit upon attainment of age 65 with 10 years of service. Members are first eligible to begin receiving a reduced annuity benefit upon attainment of age 60 with 10 years of service. The annuity is discounted 0.50 percent for each full month the employee is younger than age 65. Final average salary is calculated using salary from the eight highest 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 percent and one-half of the annual unadjusted percentage increase in the Consumer Price Index-U (but not less than zero) as measured in the preceding 12-month period ending with the September preceding the November 1, which is the date that the new amount will be calculated and made available to the pension funds.

**SUMMARY OF
PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016 (CONT'D)**

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 cannot exceed 100 percent of the employee's reduced annuity. If the employee resigns after June 30, 1983, the 3.00 percent automatic annual increase in the annuity will be computed on the original, not the reduced, annuity; if the beneficiary dies before the employee annuitant, the full annuity is restored for annuities granted after June 30, 1983. 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 starting date of the employee's annuity.

Automatic Increase in Annuity

An employee annuitant is entitled to receive an increase of 3.00 percent of the currently 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 and age 53; and
- 2.) The later of the first anniversary of retirement and age 60.

Increases apply only to life annuities.

An employee annuitant that first became a member on or after January 1, 2011, that is eligible to receive an increase in annuity benefit, shall receive an annual increase equal to the lesser of 3 percent and one-half of the annual unadjusted percentage increase in the Consumer Price Index-U (but not less than zero) as measured in the preceding 12-month period ending with the September preceding the increase. The increase is based on the amount of the originally granted benefit (simple). This increase begins on January 1 of the year of the first payment date following the later of:

- 1.) *Attainment of age 67; and*
- 2.) *The first anniversary of the annuity start date.*

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 deductions and City contributions made for spouses' annuity purposes and a joint life age factor. (If the employee is a female, these are deductions accumulated since October 1974.)

**SUMMARY OF
PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016 (CONT'D)**

If the employee dies in service, the spouse's annuity is based on all sums accumulated to their credit.

For 3.00 percent 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.

Spouses' 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 annuity the employee was entitled to receive at the time of retirement or death in service. This annuity must then be discounted 0.25 percent 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 discounted for his/her age under 55 at the time of the employee's death, unless the employee had at least 25 years of service and withdrew from service on or after June 27, 1997, in which case the spouse annuity would be discounted for spouse age under 50 at the time of the employee's death.

If the employee dies in service on or after January 1, 2002, 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. For the purposes of this benefit, the minimum formula annuity earned and accrued to the credit of the employee is equal to 2.40 percent for each year of service of the highest average annual salary for any four consecutive years within the last 10 years of service immediately preceding the date of death, up to a maximum of 80 percent of the highest average annual salary. 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 10 full years or more.

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 participants that first became members on or after January 1, 2011, the annuity payable to the surviving spouse is equal to 66 2/3 percent of the participant's earned retirement annuity at the date of death without a reduction due to age.

Automatic Increase in Annuity

The widow or survivor of a participant that first became a member on or after January 1, 2011, shall receive an annual increase equal to the lesser of 3 percent and one-half of the annual unadjusted percentage increase in the Consumer Price Index-U (but not less than zero) as measured in the preceding 12-month period ending with the September preceding the date of the increase. The increase is based on the amount of the originally granted survivor's benefit (simple). This annual increase begins on January 1 following the commencement of the widow's or survivor's annuity if the deceased member died while receiving an annuity benefit and on January 1 following the first anniversary of the commencement of the annuity otherwise.

**SUMMARY OF
PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016 (CONT'D)**

Child's Annuity

A child's annuity is provided for unmarried children of a deceased employee who are under the age of 18, if the child was conceived or 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.

Family Maximum

Non-Duty Death: 60 percent of final monthly salary.

Duty Death: 70 percent of final monthly salary.

DISABILITIES

Duty Disability Benefits

Any employee who becomes disabled as the result of an injury incurred in the performance of any act of duty shall have a right to receive a duty disability benefit in the amount of 75 percent of salary at date of injury, plus \$10 a month for each unmarried child (the issue of the employee) less than age 18. Child's duty disability benefit is limited to 15 percent 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 percent 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 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 percent 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, 1983, while the employee is receiving duty disability benefits, are not refundable to the employee and will be used for annuity purposes only.

Ordinary Disability Benefit

This benefit is granted for disability incurred other than in performance of an act of duty and is 50 percent of salary as of the last day worked. The first payment shall be made one month after the disablement occurs. Disability is payable until age 65 and limited to a maximum of 25 percent of the employee's total service or five years, whichever occurs first.

For ordinary disability benefits paid on or after January 1, 2001, the Fund credits amounts equal to the amounts ordinarily contributed by an employee for annuity purposes for any period during which the employee receives ordinary disability. These amounts are used for annuity purposes but are not credited for refund purposes.

**SUMMARY OF
PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016 (CONT'D)**

GROUP HEALTH HOSPITAL AND SURGICAL INSURANCE PREMIUMS

The pension fund shall provide payments in the amount of \$95 per month for non-Medicare eligible city annuitants (defined in section 160.1 of Article 11 of the Illinois Pension Code as persons receiving an age and service annuity, a widow's annuity, a child's annuity, or a minimum annuity as a direct result of previous employment by the City of Chicago) and \$65 per month for Medicare eligible city annuitants 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.

The city health care plans referred to above and the pension fund's payments to the city for such plans 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.

Should the Board of Education continue to sponsor a retiree health plan, the pension fund is authorized to provide payments to the Board of Education, on behalf of each eligible annuitant who chooses to participate in the Board of Education retiree health benefit plan, in the amount of \$95 per month for non-Medicare eligible participants and \$65 per month for Medicare eligible participants 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.

The Board of Education health benefit plan referred to above and the pension fund's payments to the Board of Education for such plan 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.

REFUNDS

To Employees

An employee who resigns before age 55, or before age 60 with less than 10 years of service, is 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.

If the annuity of an employee is less than \$800 a month, the employee may elect to receive a refund, as above, in lieu of an annuity.

Spouse's annuity deductions are payable to the employee if not married when he retires.

For participants that first became members on or after January 1, 2011, an employee who resigns before age 62 without regard to length of service or with less than 10 years of service regardless of age is 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.

To Spouses

The spouse may choose a refund in lieu of annuity if the annuity would be less than \$800 per month.

**SUMMARY OF
PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016 (CONT'D)**

Remaining Amounts

Amounts contributed by the employee excluding 0.50 percent deductions for annuity increases, and which have not yet been paid out as annuity, are refundable to his estate with interest to his retirement or death if the employee died in service.

DEDUCTIONS AND CONTRIBUTIONS

Members are required to contribute 8.50 percent of their salary to the pension fund.

For participants that first became members on or after January 1, 2011, pensionable salary, upon which member contributions are made, is limited to \$106,800 in 2011, increased by the lesser of 3 percent and one-half of the annual unadjusted percentage increase in the Consumer Price Index-U (but not less than zero) as measured in the preceding 12-month period ending with the September preceding the November 1, which is the date that the new amount will be calculated and made available to the pension funds.

The City shall annually levy a tax which, when added to the amounts deducted from the salaries of the employees, or otherwise contributed by them, will be sufficient for the requirements of the Fund. The tax will produce an amount that does not exceed the amount of contributions by the employees to the Fund made in the calendar year two years prior to the year for which the annual applicable tax is levied, multiplied by 1.00 for the year 1999 and each year thereafter. The total amount of contributions by the employees shall not include contributions for service credit purchases under Section 11-133.3 for purposes of establishing the tax levy amount.

When the balance of the prior service reserve equals its liabilities (including in addition to all other liabilities, the present value of all annuities, present or prospective, according to the applicable mortality tables and rates of interest), the City shall cease to contribute the amounts to provide prior service annuities and other annuities and benefits. All liabilities attributable to the cost of the Early Retirement Incentive created by Public Act 93-0654 are to be excluded from the determination of a required City contribution.

TAX SHELTER OF EMPLOYEE SALARY DEDUCTIONS

Beginning January 1, 1982, the City employee salary deductions were designated for income tax purposes to be made by the employer. The W-2 salary is therefore reduced by the amount of contributions. For pension purposes the salary remains unchanged. Income tax will be paid when a refund or annuity is granted. For the purposes of benefits, refunds or financing, these contributions are treated as employee contributions.

Beginning September 1, 1981, the Board of Education paid contributions in the amount of 7.00 percent of the employee's salary. The 1985 amendments contained a provision whereby the amount of pick-up, if any, is included in the pensionable salary for contributions and benefits. Such provision was retroactive to September 1, 1981. Beginning May 28, 2000, the remainder of contributions due for Board of Education employee salary deductions was designated for income tax purposes to be made by the employer and treated in the same manner as City employee salary deductions.

**SUMMARY OF
PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016 (CONT'D)**

SALARY AND COLA DEVELOPMENT FOR MEMBERS HIRED ON OR AFTER JANUARY 1, 2011

Calendar Year	CPI-U	1/2 CPI-U	COLA	Maximum Annual Pensionable Earnings
2011				\$106,800.00
2012	3.90%	1.95%	1.95%	\$108,882.60
2013	2.00%	1.00%	1.00%	\$109,971.43
2014	1.20%	0.60%	0.60%	\$110,631.26
2015	1.70%	0.85%	0.85%	\$111,571.63
2016	0.00%	0.00%	0.00%	\$111,571.63
2017	1.50%	0.75%	0.75%	\$112,408.42

HISTORICAL INFORMATION

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016

1984 Session

- Direct deposit.
- Illinois Public Employees' Pension Laws Commission abolished.

1985 Session

HB 398

- 1.80, 2.00, 2.20, 2.40 percent benefit accrual rate for those born before January 1, 1936, and retiring after August 16, 1985.
- Reduction in age discount factor (employee and widow) from 0.50 percent to 0.25 percent for employees born before January 1, 1936, and retiring or dying in service after August 16, 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.

1986 Session

HB 2630

- Cap removed on spouse maximum annuity.
- Automatic post-retirement increase to begin on first anniversary of retirement following attainment at age 60.

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

1987 Session

HB 2715

- 1.80, 2.00, 2.20, 2.40 percent benefit accrual rate for those born on or after January 1, 1936, and retiring on or after January 1, 1988.
- Reduction in age discount factor (employee and widow) from 0.50 percent to 0.25 percent 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 annuity of \$200 under certain conditions.
- Change amount of children's benefits to \$120 or \$150 effective January 1, 1988.
- Provide for certain "Good Government" initiatives.
- Remove chronic alcoholism restriction for ordinary disability.

1988 Session

- No 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 percent 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.

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

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.
- Eliminated the \$300, \$400 or \$500 maximum spouse annuity limitation for spouses of employees who retired before January 23, 1987, but die after January 23, 1987.
- Allow for local labor officials on a leave of absence from the Fund to contribute for their current 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.
- 2.20 percent 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 employees' annuity discounted 0.25 percent 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.

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

- Refund in lieu of \$300 annuity.
- Disability benefit retroactive one year from application; duty disability deductions in lieu for heart attack or stroke; 10 percent increase in duty disability benefit January 1 of the sixth year.
- 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

- No changes.

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, and up to five purchased under ERI).
 - Requires age 55 or older.
 - Requires an election form to be filed before June 1, 1993.
 - Requires a member to be a current contributor on November 1, 1992, and have not previously retired under this Article.
 - Provides for elimination of the age discount for employees 55-60.
 - 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, 1992, salary.
 - Provides for a 24-month option to pay for ERI service.
 - Provides for a tax levy derived from ERI contributions.

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

1993 Session

- No changes.

1994 Session

- No 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 participants before 1996.
- The Fund 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 participants 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.

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

- 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.
- The requirement that any person employed by a retirement board of any other annuity and benefit fund in the City apply for participation in the Fund is eliminated.
- Payment is allowed for service as a police officer, firefighter or public school teacher in the City.

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

HB 313

- Approved June 27, 1997.
- For withdrawals from service occurring on or after June 27, 1997, an employee (and 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 spouse of an employee 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 the spouse's age under 55 at the time of employee's death. Excess spouse refund, if any, must be repaid.
- 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 Laborers' 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 Laborers' 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 fund supplement remains \$45 and \$75 for Medicare eligible and non-Medicare eligible annuitants respectively.
- Beginning June 27, 1997, spouses of employees dying in service after age 50, with at least 30 years of service or after age 55 with 25 years of service, 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.

HB 1641

- Approved August 22, 1997.
- Beginning August 22, 1997, for 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.

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

- Service paid under Section 11-221 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 a total of 20 years of service (with at least 10 in this fund, up to five in a Reciprocal fund, and up to five purchased under ERI) and age 55 or older.
 - Requires a total of 30 years of service (with at least 10 years of that service in this fund and without including any service purchased under the ERI provisions) and age 50 or older.
 - 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 Laborers' 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.

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

- 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 Laborers' 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 1.00 for 1999 and beyond.
- Money deposited under 5/11-169(f) may be used by the Fund for any of the purposes for which the proceeds of the tax levied by the City under this section may be used.
- The number of board members is changed from five to eight. The makeup of the board is two ex-officio members, three appointed persons, two employees and one annuitant.

HB 1612

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

1999 Session

- No Change.

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

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.

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

- 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 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 Fund. These contributions are not refundable.
- The pension fund supplement for retiree health insurance was extended through June 30, 2003. For annuitants (other than child annuitants) taking the employer-provided plan, the supplement is \$75 per month if the annuitant is not eligible for Medicare and \$45 per month if the annuitant is eligible for Medicare.

2003 Session

SB 1701

- Effective July 1, 2003.

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

- The healthcare benefits were 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 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 reenter 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 10 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.
 - Provides for the exclusion of the liabilities arising from the ERI for the purpose of determining if a contribution by the city is required.

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

- 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).
- Allows Board members to continue until the end of their terms without forfeiting the benefits provided by the early retirement incentive.
- 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.
- 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).

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

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.

2006 Session

- No Change.

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.

2008 Session

- No Change.

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

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

award or other payment under the Workers' Compensation Act or the Workers' Occupational Diseases Act. Makes other changes concerning disability benefits.

HB 2257

- 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.

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

- 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 that 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 members' 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.

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

- Requires approval for travel or education mission expense of a Trustee by a majority of the Board prior to the 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.

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

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

- 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.

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

- 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.

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

- “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 Laborers. 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 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 two 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 (SB 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

EXHIBIT R

LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

- 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, and eliminates the annual increases in 2025.

Public Act 98-1022 (HB 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.

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.

EXHIBIT R
LEGISLATIVE CHANGES 1984 THROUGH 2016 (CONT'D)

- 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.

2016 Session

- No Change.

EXHIBIT S

HISTORY OF RECOMMENDED EMPLOYER MULTIPLES AND TAXES LEVIED

Year of Report	Statutory Multiple	Normal Cost Plus Interest	Normal Cost Plus 30-Year Amortization ¹²	Normal Cost Plus 30-Year % of Salary Amortization ¹²	Tax Levy Year	Normal Cost Plus 30-Year % of Salary Amortization ¹²		Total Tax Levy
						City	Park	
1984	1.37	1.58	2.04	1.30	1984	\$15,606,000	\$32,000	\$15,638,000
1985 ²	1.37	1.60	2.08	1.33	1985	15,618,000	29,000	15,647,000
1986 ¹	1.37	0.99	1.84	0.94	1986	15,373,000	25,000	15,398,000
1987 ¹	1.37	1.13	1.90	1.03	1987	15,260,000	21,000	15,281,000
1988	1.37	1.03	1.87	0.98	1988	15,380,000	20,000	15,400,000
1989 ^{1,2}	1.37	0.56	1.49	0.56	1989	15,442,000	14,000	15,456,000
1990 ^{1,2}	1.37	1.01	1.80	0.93	1990	15,261,000	12,000	15,273,000
1991	1.37	0.93	1.70	0.90	1991	16,382,000	10,000	16,392,000
1992 ²	1.37	0.80	1.75	0.80	1992	16,835,000	11,000	16,846,000
1993 ²	1.37	0.83	1.96	0.83	1993	18,036,000	11,000	18,047,000
1994 ^{1,2}	1.37	0.64	1.84	0.64	1994	17,069,000	12,000	17,081,000
1995 ²	1.37	0.75	1.87	0.75	1995	18,726,000	9,500	18,735,500
1996	1.37	0.66	1.75	0.66	1996	20,037,300	6,900	20,044,200
1997 ^{1,2,3,4}	1.37	N/A	N/A	N/A	1997	19,645,400	4,300	19,649,700
1998 ^{1,2,4}	1.37	N/A	N/A	N/A	1998	19,757,000	4,600	19,761,600
1999 ^{1,4,5}	1.00	N/A	N/A	N/A	1999	14,676,000	1,898	14,677,898
2000 ⁴	1.00	N/A	N/A	N/A	2000 ⁶	0	0	0
2001 ⁴	1.00	N/A	N/A	N/A	2001 ⁷	0	0	0
2002 ^{2,4}	1.00	N/A	N/A	N/A	2002 ⁸	0	0	0
2003 ²	1.00	0.44	0.43	0.53	2003 ⁹	0	0	0
2004 ^{1,2}	1.00	0.67	0.67	0.63	2004 ¹⁰	0	0	0
2005 ¹	1.00	1.18	1.23	0.63	2005 ¹¹	0	0	0
2006	1.00	1.54	1.64	1.30	2006 ¹³	0	0	0
2007	1.00	1.12	1.19	0.99	2007	15,460,000	0	15,460,000
2008	1.00	1.98	2.12	1.60	2008	17,891,000	0	17,891,000
2009	1.00	2.54	2.76	1.97	2009	17,545,800	0	17,545,800
2010	1.00	3.57	3.89	2.71	2010	18,239,700	0	18,239,700
2011 ¹	1.00	4.95	5.41	3.67	2011 ¹	15,635,700	0	15,635,700
2012 ¹	1.00	6.78	7.48	5.44	2012 ¹	14,898,700	0	14,898,700
2013 ²	1.00	6.42	7.20	5.26	2013 ²	14,616,300	0	14,616,300
2014 ²	1.00	4.87	5.48	4.05	2014 ²	15,074,500	0	15,074,500
2015 ²	1.00	7.08	7.94	5.75	2015 ²	15,011,900	0	15,011,900
2016 ¹⁴	1.00	7.38	8.14	5.84	2016 ¹⁴	15,019,000	0	15,019,000

¹ Change in actuarial assumptions

² Change in benefits

³ Change in asset valuation method to GASB

⁴ No contribution is required under these valuation methods

⁵ Change in actuary

⁶ Tax levy based on the statutory multiple would be \$16,726,700

⁷ Tax levy based on the statutory multiple would be \$16,504,660

⁸ Tax levy based on the statutory multiple would be \$16,892,000

⁹ Tax levy based on the statutory multiple would be \$19,430,000

¹⁰ Tax levy based on the statutory multiple would be \$19,570,600

¹¹ Tax levy based on the statutory multiple would be \$18,970,900

¹² 40-year amortization for years prior to 2006; 30-year amortization for 2006 and after.

¹³ Tax levy based on the statutory multiple would be \$17,193,400

¹⁴ Statutory multiple applicable in tax levy year 2016

EXHIBIT T
ACTUARIAL DETERMINED CONTRIBUTIONS OF EMPLOYER
AND TREND INFORMATION

Year	Actuarial Determined Contribution (ADC) of the Employer¹	Required Statutory Basis²	Actual³	Percent of ADC Contributed
2006 ⁴	\$ 21,142,739	\$ 16,505,724	\$ 106,270	0.50%
2007	25,293,490	14,840,698	15,458,982	61.12%
2008	21,216,989	17,175,360	17,580,428	82.86%
2009	37,199,049	16,843,872	17,189,811	46.21%
2010	50,274,041	17,510,112	17,938,810	35.68%
2011	60,801,575	15,010,272	15,358,602	25.26%
2012	80,636,419	14,302,752	14,414,835	17.88%
2013	109,290,128	14,031,648	14,100,639	12.90%
2014	108,538,602	14,471,520	14,520,515	13.38%
2015	82,252,473	14,411,424	14,566,544	17.71%
2016	119,215,489	14,418,240	14,443,495	12.12%

¹Under Normal Cost plus Level-Dollar Amortization. Amortization period of 30 years beginning in 2007 and 40 years prior to 2007. Negative ADC values are set to zero, as no contribution is then required.

²Tax levy after 4.00 percent overall loss.

³Net tax levy plus miscellaneous. Includes prior year adjustments for taxes beginning in 1991.

⁴The City of Chicago did not levy a tax for the Fund this year.

Year	Assets¹ Available for Benefits as a % of Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability (Surplus) as a % of Covered Payroll End of Year	Employer Contribution as a % of Covered Payroll Beginning of Year
2006	91.98%	75.15 %	0.06%
2007	95.03%	47.70 %	8.02%
2008	86.77%	119.48 %	8.11%
2009	79.37%	199.46 %	8.24%
2010	73.83%	271.18 %	8.98%
2011	64.92%	393.76 %	7.87%
2012	55.41%	532.69 %	7.25%
2013	56.65%	517.25 %	7.04%
2014	64.28%	372.15 %	7.16%
2015	52.99%	567.07 %	7.11%
2016	50.36%	598.40 %	6.94%

¹Actuarial value of assets.

Actuarial accrued liabilities and contributions include pension and OPEB.

EXHIBIT U
HISTORY OF RETIREES AND BENEFICIARIES
ADDED TO PAYROLLS 2007-2016

Year	Added to Payroll		Removed from Payroll		Payroll End of Year		Average	Increase in	
	No. ¹	Ann. Benefits ²	No. ¹	Ann. Benefits	No.	Ann. Benefits	Annual Benefit	Average Benefit	
Employee Annuitants (Male and Female)									
2007	95	\$ 6,301,188	134	\$ 3,363,972	2,644	\$ 87,891,144	\$ 33,242	4.98%	
2008	120	7,756,776	118	2,939,436	2,646	92,708,484	35,037	5.40%	
2009	169	9,882,832	132	3,675,336	2,683	98,915,980	36,868	5.22%	
2010	163	10,367,852	144	4,008,480	2,702	105,275,352	38,962	5.68%	
2011	163	10,624,236	144	4,187,172	2,721	111,712,416	41,056	5.37%	
2012	136	9,154,278	120	4,030,908	2,737	116,835,786	42,688	3.97%	
2013	112	7,904,208	122	4,032,342	2,727	120,707,652	44,264	3.69%	
2014	102	8,125,860	139	5,180,724	2,690	123,652,788	45,968	3.85%	
2015	92	7,652,892	117	4,787,604	2,665	126,518,076	47,474	3.28%	
2016	74	6,753,900	106	4,091,952	2,633	129,180,024	49,062	3.34%	
Surviving Spouse and Reversionary Annuitants									
2007	68	\$ 1,007,856	87	\$ 846,660	1,316	\$ 15,164,628	\$ 11,523	2.53%	
2008	64	972,408	82	855,072	1,298	15,281,964	11,773	2.17%	
2009	49	866,592	75	772,740	1,272	15,375,816	12,088	2.67%	
2010	57	1,000,668	74	770,808	1,255	15,605,676	12,435	2.87%	
2011	57	1,000,152	91	1,021,908	1,221	15,583,920	12,763	2.64%	
2012	74	1,028,112	91	1,032,372	1,204	15,579,660	12,940	1.39%	
2013	51	908,433	66	730,560	1,189	15,757,533	13,253	2.42%	
2014	62	1,333,056	69	733,176	1,182	16,357,413	13,839	4.42%	
2015	45	1,093,704	78	883,747	1,149	16,567,370	14,419	4.19%	
2016	40	940,530	89	1,110,900	1,100	16,397,000	14,906	3.38%	

¹ Numbers added and removed from payroll may include Reversionary Annuitants that are also Surviving Spouses.

² Annual benefits added to payroll include post-retirement increase amounts.