

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
ACTUARIAL VALUATION REPORT FOR THE YEAR ENDING
DECEMBER 31, 2016

May 5, 2017

Board of Trustees
Policemen's Annuity and Benefit Fund
City of Chicago
221 North LaSalle Street, Suite 1626
Chicago, IL 60601-1404

Subject: Actuarial Valuation Report for the Year Ending December 31, 2016

Dear Members of the Board:

At your request, we have performed an actuarial valuation of the Policemen's Annuity and Benefit Fund of Chicago ("the Fund") as of December 31, 2016. This actuarial valuation has been performed to measure the funded status of the Fund as of December 31, 2016, based on the statutes in effect as of December 31, 2016. This report also provides the development of the plan year end 2017 Actuarially Determined Contribution ("ADC") as required by GASB Statement Nos. 67 and 68. Other information required under GASB Statement Nos. 67 and 68 is provided in a separate report. The actuarial assumptions and methods used were recommended by the actuary and approved by the Board.

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

- Summary of Actuarial Valuation Methods and Assumptions;
- Schedule of Active Member Data;
- Retirements and Beneficiaries Added to and Removed from Rolls;
- Prioritized Solvency (Termination) Test;
- Development of Actuarially Determined Contributions under GASB Statement Nos. 67 and 68;
- Development of Actuarial Gains and Losses; and
- Summary of Basic Actuarial Values.

We have also provided the following schedule in the financial section of the report:

- Development of the projected Statutory Contribution Requirements based on the statutes in effect as of December 31, 2016

This actuarial valuation is based upon:

Data relative to the members of the Fund – Data for active members and persons receiving benefits from the Fund was provided by the Fund's staff. We have tested this data for reasonableness.

Asset Values – Actuarial value of assets are used to develop actuarial results for the determination of statutory contribution requirements. In each future fiscal year, gains and losses will be phased in over a five-year period.

Actuarial Method – The actuarial method utilized by the Fund, as required by statute, is the Entry-Age Normal 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 financed. All actuarial gains and losses under this method are reflected in the UAAL.

Actuarial Assumptions – Beginning with this actuarial valuation, the investment return assumption was decreased from 7.50% to 7.25% and the inflation rate assumption was decreased from 3.00% to 2.75%. All other actuarial assumptions remain unchanged from the prior valuation and reflect the results of the experience study performed for the period of January 1, 2009, through December 31, 2013, approved by the Board on March 16, 2015. The assumptions used are set forth in Appendix 4: Actuarial Methods and Assumptions of the Valuation Report.

Plan Provisions – The actuarial valuation is based on plan provisions and statutes 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. Pursuant to Public Act (“P.A.”) 99-0506, effective May 30, 2016, the funding policy was amended and requires City contributions to be equal to \$420 million in payment year 2016, \$464 million in payment year 2017, \$500 million in payment year 2018, \$557 million in payment year 2019 and \$579 million in payment year 2020. For payment years after 2020, the City is required to make level percent of pay contributions for plan years 2020 through 2055 that along with member contributions and investment earnings are expected to generate a projected funded ratio of 90% by plan year end 2055. The projections are based on an open group, level percent of pay financing and the Entry-Age Normal cost method.

This is a severely underfunded plan. The funded ratio is only 22.3% (using market value of assets) and the unfunded liability is approximately \$10 billion as of December 31, 2016. The funded ratio is not projected to even reach 50% funded for another 27 years until 2043.

The funding policy defined in P.A. 99-0506 provides for fixed dollar City contributions for payment years 2016 to 2020, and level percent of pay contributions for years 2021 to 2055 that, along with member contributions and investment income, are projected to produce a funded ratio of 90% by 2055. This funding policy significantly defers contributions when compared to the provisions of the prior funding policy defined in P.A. 96-1495. The amount of annual contributions defined under P.A. 99-0506 does not even cover normal cost plus interest on the unfunded liability for the next 16 years. This means the unfunded liability is actually projected to increase to a high of \$12.2 billion in 2031, when contributions are finally sufficient to start reducing the unfunded liability.

We understand that P.A. 99-0506 defines the amount of City Contributions to the PABF. Nevertheless, we continue to recommend that the plan sponsor seriously consider making additional

contributions (in excess of the minimum statutory requirement) to ensure that there are sufficient assets available in the fund in all years to pay the promised benefits.

We also recommend that the Board perform projections which include pessimistic scenarios such as investment return lower than assumed, lower contributions received than expected, higher benefit payments than expected, etc. to more fully understand the impact of less than optimal future expectations.

This actuarial valuation assumes that the City will be able to make future contributions on a timely basis. We did not perform an analysis of the ability of the City to make future contributions. Such an analysis is not within the scope of our assignment or within our analytical skill set. Failure to receive City contributions on a timely basis could jeopardize the sustainability of the Fund.

The funding actuarial valuation results contained in this report were prepared based on the statutes in effect as of December 31, 2016. The projected contributions contained in this report will be used to develop the blended discount rate under GASB Statement Nos. 67 and 68.

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 actuarial valuation date. To the best of our knowledge, this actuarial statement is complete and accurate based on the statutes in effect as of December 31, 2016, and fairly presents the actuarial position of the Fund as of December 31, 2016. Based on these items, we certify these results to be true and correct.

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.

Actuarial valuations do not affect the ultimate cost of the Plan, only the timing of contributions into the Plan. Plan funding occurs over time. Contribution shortfalls (the difference between the actual contributions and the annual required contributions) remain the responsibility of the Plan sponsor. If the contribution levels over a period of years are lower or higher than necessary, it is normal and expected practice for adjustments to be made to future contribution levels to take account of this variance, with a view to funding the plan over time.

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

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.

Alex Rivera and Lance J. Weiss are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

The signing actuaries are independent of the plan sponsor.

Respectfully yours,



Alex Rivera, FSA, EA, MAAA, FCA
Senior Consultant



Lance J. Weiss, EA, MAAA, FCA
Senior Consultant

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POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

SUMMARY OF VALUATION RESULTS

This report sets forth the results of the actuarial valuation of the Policemen's Annuity and Benefit Fund of the City of Chicago ("Fund") as of December 31, 2016. This actuarial valuation is based on the provisions of P.A. 99-0506 and P.A. 99-0905. The purposes of this actuarial valuation are:

1. To estimate the projected statutory contributions for plan years after 2020 based on the provisions of Public Act 99-0506.
2. To estimate the projected statutory contributions, after plan year 2020, based on the provisions of Public Act 99-0506, for purposes of developing the blended discount rate under GASB Statement Nos. 67 and 68.
3. To develop the actuarially determined contributions (ADC) under GASB Statement Nos. 67 and 68.
4. To review the funded status of the Fund, based on the statutes in effect as of December 31, 2016.

The funded status, in basic terms, is a comparison of Fund liabilities to Fund assets expressed as either 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.

Funded status is measured differently for statutory funding and for Fund and City financial reports. The following chart shows how funded status is determined for each purpose.

PURPOSE	ACTUARIAL METHOD	ASSET VALUE
Statutory Funding	Entry-Age Normal	Actuarial (Market-Related) Value of Assets
Fund reporting after 2014 (GASB #67 for pension benefits)	Entry-Age Normal	Market Value of Assets
City reporting after 2015 (GASB #68 for pension benefits)	Entry-Age Normal	Market Value of Assets

Under the Entry Age Normal Cost Method, each participant's projected benefit is allocated on a level percent of pay basis from entry age to assumed exit age. The Actuarial Accrued Liability is the portion of the present value associated with pay prior to the actuarial valuation date. The Normal Cost is the portion of the present value associated with pay during the current plan year.

The actuarial (market-related) value of assets is determined from market value with investment gains and losses smoothed over a five-year period. The actuarial assumptions used to determine the liabilities are the same in all three measures.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

SUMMARY OF VALUATION RESULTS (CONT'D)

Comments on Results

P.A. 99-0506, effective as of May 30, 2016, changed the City's contribution policy to \$420 million in payment year 2016, \$464 million in payment year 2017, \$500 million in payment year 2018, \$557 million in payment year 2019, and \$579 million in payment year 2020. For payment years after 2020, the City is required to make level percent of pay contributions for plan years through 2055 that, along with member contributions and investment earnings, are expected to generate a projected funded ratio of 90% by plan year end 2055. In addition, the actuarial funding method was changed from the Projected Unit Credit cost method to the Entry Age Normal cost method. Under P.A. 99-00506, the minimum benefit for certain annuitants cannot be less than 125% of the Federal poverty level.

P.A. 99-0905, effective November 29, 2016, extended the 3.00% annual COLA increases to participants born after December 31, 1954, but before January 1, 1966, first payable at the later of age 55 or one year from retirement date. In addition, under P.A. 99-0905, the minimum benefit for widows cannot be less than 125% of the Federal poverty level. Other changes made under P.A. 99-0506 and P.A. 99-0905 had minimal effect on funding and contributions.

The actuarial valuation as of December 31, 2016, includes two actuarial assumption changes. First, the investment return assumption was reduced from 7.50% to 7.25%. Secondly, the general inflation assumption was reduced from 3.00% to 2.75%.

The actuarial accrued liability as of December 31, 2016, increased by \$312 million due to the method change, \$307 million due to the assumption changes, and \$609 million due to benefit improvements under P.A. 99-0506 and P.A. 99-0905.

The change in funding policy decreased City contributions paid in 2016 from \$585 million to \$420 million. The change in funded policy significantly decreases City contributions in payment years 2016 through 2020 and delays the year that PABF reaches 90% funding from 2040 to 2055. The increase in actuarial accrued liability is financed after payment year 2020 as part of the City's statutory contribution.

Under the current statutory funding policy the funded ratio is projected to increase slowly over the next 15 years from 23.7% in 2016 to 32.4% in 2030. The funded ratio is projected to increase to 45.0% in 2040, 69.4% in 2050, and 90.0% in 2055. The statutory funding policy generates "back-loaded" City contributions with slow growth in the funded ratio. Underfunding the Fund creates the risk that the long-term investment return cannot be supported, minimal investment income is available to pay benefits, or worse that benefit obligations cannot be met from the trust.

The calculations in this report were prepared based on the funding policy methods required by Public Act 99-0506. In light of the current funded status of this Retirement System, we do not endorse this funding policy because the Statutory funding policy defers funding for benefits into the future and places a higher burden on future generations of taxpayers.

We recommend a funding policy that contributes the net normal cost plus amortization of the unfunded actuarial liability over a reasonable period. For example, contributing the net normal cost plus amortization of the unfunded actuarial liability on a level dollar basis over a 30-year period in our

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

SUMMARY OF VALUATION RESULTS (CONT'D)

opinion would produce a reasonable growth pattern in the funded ratio. Using this basis, the City's Actuarially Determined Contribution ("ADC") for plan year end 2017, net of member contributions, is approximately \$910.9 million or 81.4% of payroll which compares to the current statutory contribution of \$500 million or 43.5% of payroll. The ADC is a required disclosure item under GASB Statement Nos. 67 and 68.

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 replaced GASB Statement No. 27 for employer financial reporting effective with fiscal year ending December 31, 2015. The discount rate used for GASB Statement Nos. 67 and 68 reporting purposes will be based on a single equivalent discount rate using a combination of 7.25% 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 municipal bond rate is based on a yield or index rate for 20-year, tax exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale). We believe the liability based on the GASB single equivalent discount rate will become an important liability for users of the Fund's financial information.

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

Total actuarial liabilities increased by approximately \$1.23 billion more than expected. The key factors affecting the increase in actuarial liability include: \$609 million increase due to benefit improvements, \$312 million increase due to change in actuarial cost method and \$307 million increase due to changes in actuarial assumptions.

The unfunded liability, under the methods used to develop the projected statutory contributions, increased from an expected value of \$8.54 billion to \$9.80 billion. The key reasons for the increase include changes to the actuarial assumptions and methods and benefit provision changes, and unfavorable investment performance.

Using the market value of assets produced an unfunded liability of \$10.0 billion and a funded ratio 22.3%. Using the book value of assets produced an unfunded liability of \$10.1 billion and a funded ratio of 21.1%. Using the actuarial value of assets produced an unfunded liability of \$9.8 billion and a funded ratio of 23.7%.

There was a loss on invested assets due to an approximate return of 4.9% on market value compared with the assumed return of 7.50%.

Please note the highlighted area on page 28 showing the age/service distribution for active members. A large portion of the population is at or nearing retirement. We should continue to monitor this as the ratio of actives to retirees has been steadily declining, which can ultimately have a large impact on

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF VALUATION RESULTS (CONT'D)

contribution requirements. A more thorough examination of these and other factors can be found in the Analysis of Actuarial Assumptions explanation and the gain/loss information in Table 5.

A summary of the primary results of this actuarial valuation is shown in the following table.

Valuation at:	12/31/2015		12/31/2016	
	\$ in Millions	% of Pay	\$ in Millions	% of Pay ¹
Contribution Levels				
Statutory Contribution ² (Tax Levy Year) (Payment Year)	\$ 464.00 (2016) (2017)	41.64%	\$ 500.00 (2017) (2018)	43.50%
Actuarially Determined Contribution ³ (Plan Year)	795.16 (2016)	73.18	910.94 (2017)	81.37
Funded Status - Actuarial Value				
Actuarial Value of Assets	\$ 3,186.42	293.24%	\$ 3,052.06	272.62%
Actuarial Liability ⁴	11,288.24	1,038.85	12,856.55	1,148.39
Funded Ratio	28.23%	N/A	23.74%	N/A
Funded Status - Market Value				
Market Value of Assets	\$ 3,058.95	281.51%	\$ 2,865.02	255.91%
Actuarial Liability ⁴	11,288.24	1,038.85	12,856.55	1,148.39
Funded Ratios	27.10%	N/A	22.28%	N/A
Funded Status - ADC Value				
Actuarial Value of Assets	\$ 3,186.42	293.24%	\$ 3,052.06	272.62%
Actuarial Liability - Entry Age ⁵	11,597.79	1,067.34	12,856.55	1,148.39
Funded Ratios	27.47%	N/A	23.74%	N/A

¹ Payroll was \$1,087 million in 2015 and \$1,120 million in 2016.

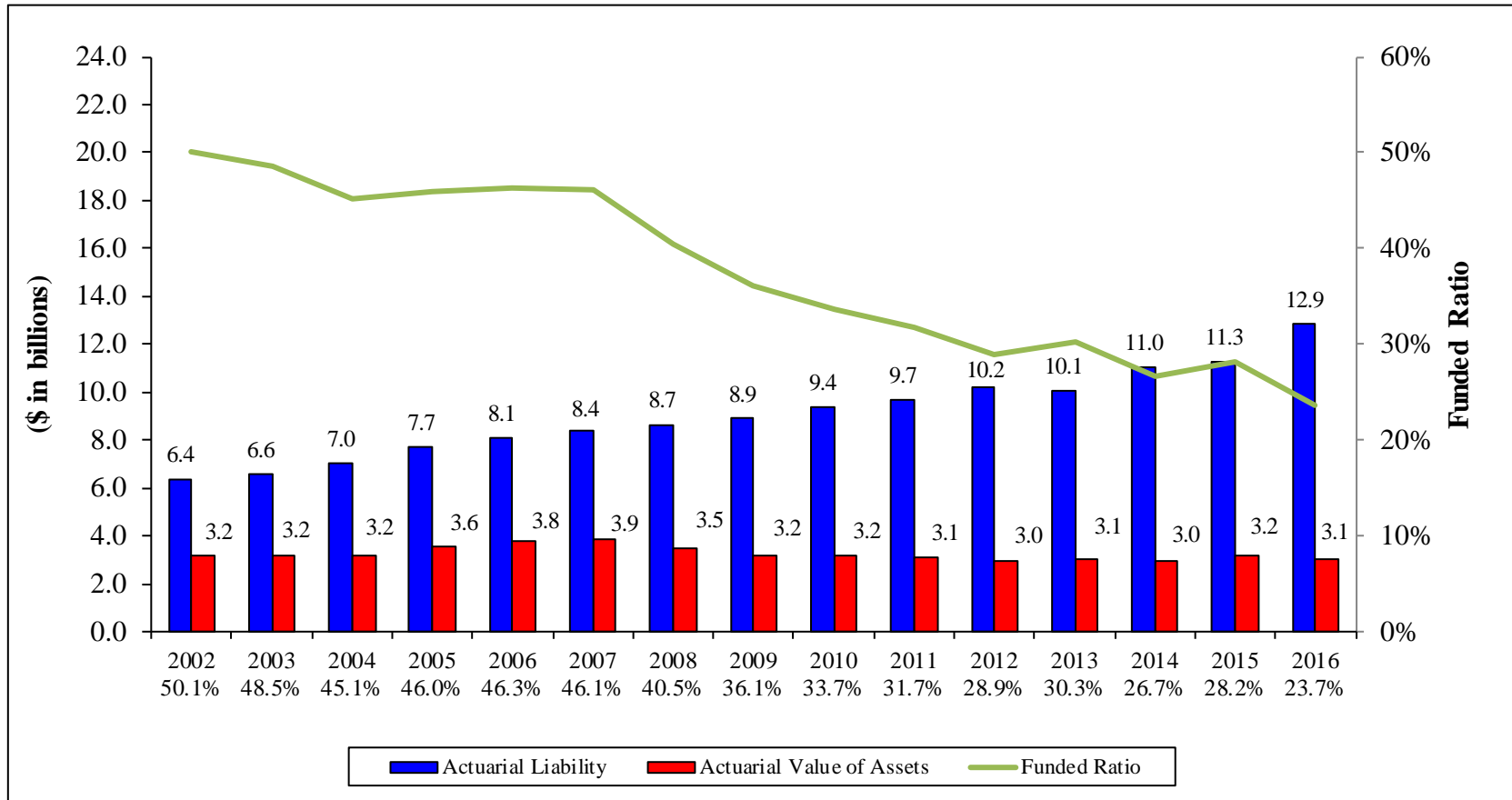
² Pursuant to P.A. 99-0506, the fiscal year 2016 tax levy, payable in fiscal year 2017, is equal to \$464,000,000 and the fiscal year 2017 tax levy, payable in fiscal year 2018, is equal to \$500,000,000. The statutory contribution expressed as a percentage of pay is based on projected payroll for the respective tax levy year.

³ The ADC for fiscal year December 31, 2017, was based on a 30-year level dollar amortization policy.

⁴ The Actuarial Liability used for funding was based on the Projected Unit Credit cost method as of December 31, 2015, and on the Entry Age normal cost method as of December 31, 2016.

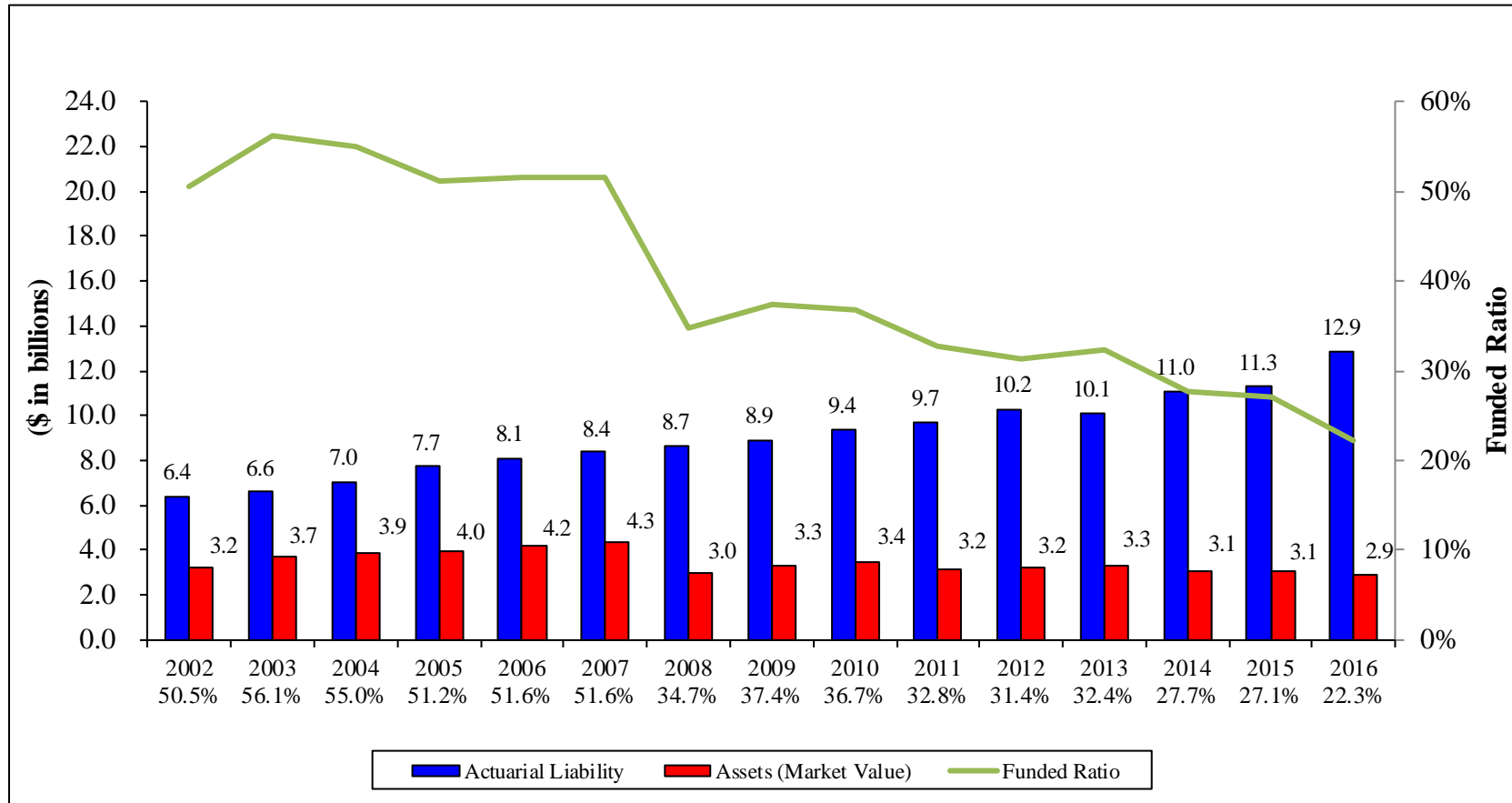
⁵ Used to determine the Actuarially Determined Contribution under GASB Statement Nos. 67 and 68.

**POLICEMEN’S ANNUITY AND BENEFIT FUND
SUMMARY OF VALUATION RESULTS (CONT’D)
COMPONENTS OF FUNDED RATIO
STATE REPORTING**



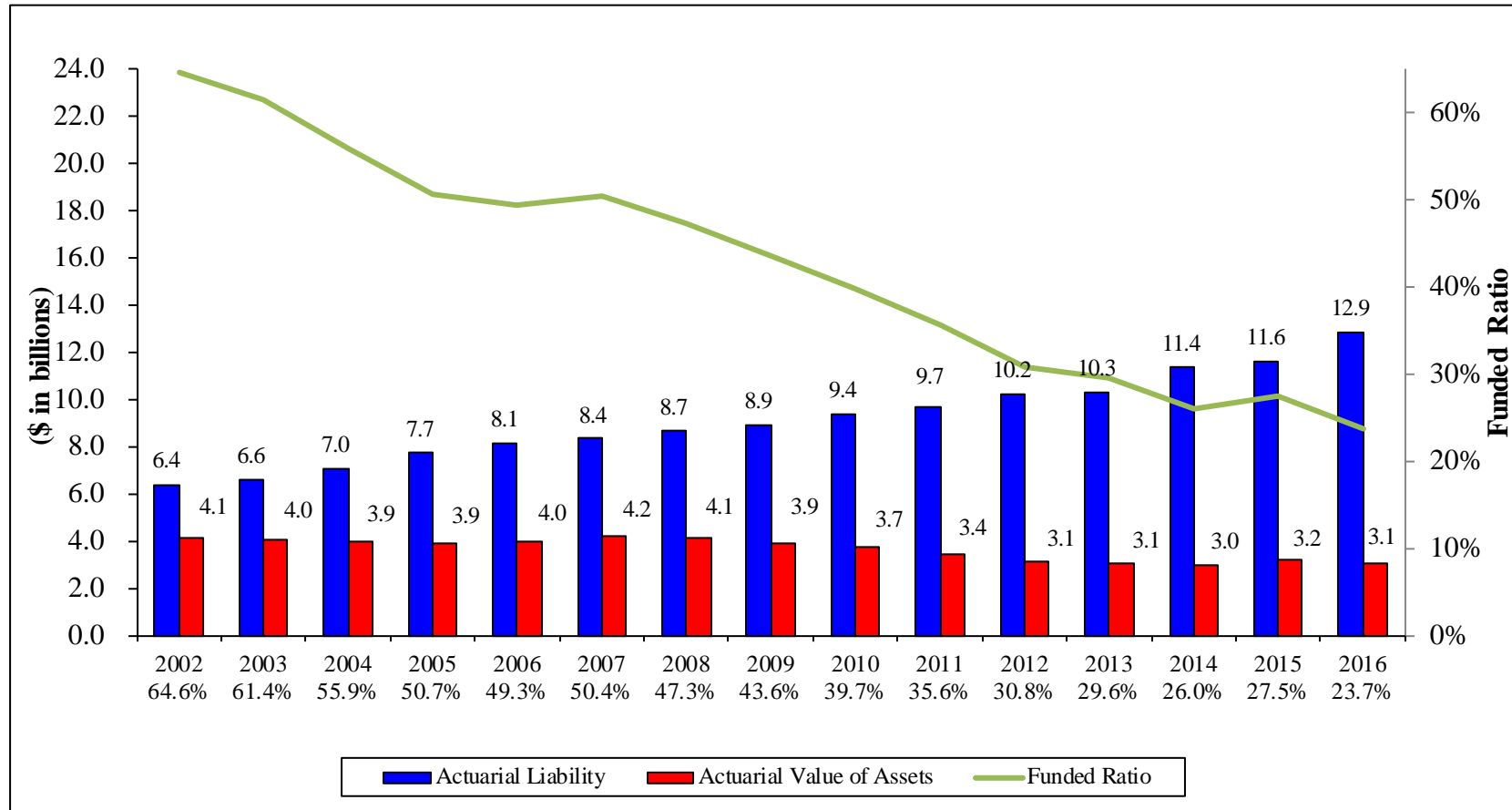
State reporting for 2016 uses the Entry-Age Normal cost method. Years 2013 through 2015 used Projected Unit Credit for Actuarial Liabilities and Actuarial Liabilities prior to 2013 also use the Entry-Age Normal cost method. State reporting of assets is based on Actuarial (Market-Related) Value for Assets beginning in 2013 and Book Value of assets prior to 2013.

**POLICEMEN’S ANNUITY AND BENEFIT FUND
SUMMARY OF VALUATION RESULTS (CONT’D)
COMPONENTS OF FUNDED RATIO
BASED ON MARKET VALUE**



Years 2013 through 2015 used Projected Unit Credit for Actuarial Liabilities and Actuarial Liabilities for 2016 and all years prior to 2013 used the Entry-Age Normal cost method. Market Value of Assets used for all years.

**POLICEMEN’S ANNUITY AND BENEFIT FUND
SUMMARY OF VALUATION RESULTS (CONT’D)
COMPONENTS OF FUNDED RATIO
BASED ON ADC UNDER GASB STATEMENT NOS. 67 AND 68**



GASB Actuarial Value of Assets based on 5-year smoothing for all years. Actuarial Liabilities uses Entry-Age Normal cost method for all years.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF VALUATION RESULTS (CONT'D)

Participants

	<u>December 31, 2015</u>	<u>December 31, 2016</u>
Active Participants		
Number	12,061	12,177
Average Age	43.8	43.5
Average Service	15.4	15.2
Average Annual Salary	\$90,093 ¹	\$91,938 ²
Retirees		
Number	9,385	9,603
Average Age	69.3	69.4
Average Monthly Benefit	\$5,142	\$5,282
Survivors		
Number	3,143	3,166
Average Age	75.9	76.2
Average Monthly Benefit	\$1,741	\$1,786

¹ Average annual salary would have been \$86,799 without the addition of duty availability pay.

² Average annual salary would have been \$88,670 without the addition of duty availability pay.

The major characteristics of the Fund participants are summarized as follows:

A large portion of the active participant population is nearing or is eligible for retirement; 38.9% of the workforce is between the ages of 45 and 54, while 31.8% have 20 or more years of service. Total participants receiving benefits under the Fund, including retirees, disabilities, survivors and children increased 1.39% during 2016 from 13,210 to 13,394. The total retiree count increased by 2.3% during 2016. Total expenditures for benefits increased from \$686.2 million in 2015 to \$716.4 million during 2016, or 4.39%. The ratio of actives to participants receiving benefits under the Fund is 47.6%.

Changes in Provisions of the Fund

The following Public Acts, passed in 2016 by the 99th General Assembly, included changes to the Fund Provisions.

P.A. 99-0506, effective May 30, 2016

Changed the funding policy and actuarial cost method, and increased the minimum benefit for certain annuitants to 125% of the Federal poverty level.

P.A. 99-0905, effective November 29, 2016

Extended the 3.00% annual COLA increases to participants born after December 31, 1954, but before January 1, 1966, and increased the minimum benefit for widows to 125% of the Federal poverty level.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

SUMMARY OF VALUATION RESULTS (CONT'D)

A detailed description of the provisions in the Public Acts passed in 2016 can be found in the Historical Information section of this report.

Analysis 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 run 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, disability incidence and post-retirement mortality. The most significant economic assumptions are: pay increases, investment return and inflation. Other actuarial assumptions include: active mortality and percent married.

2016 Gain/Loss Analysis

We performed a gain/loss analysis of the major factors which contributed to the change in the unfunded actuarial liability between December 31, 2015, and December 31, 2016. A discussion by source follows.

Turnover

We reviewed all exits in 2016 from the Fund for reasons other than retirement, death or disability for members with less than 20 years of service. The ratio of actual withdrawals to expected withdrawals was 75% (25% less than expected). The overall result is a small actuarial loss.

Retirement

The number of retirements during 2016 was greater than expected. The ratio of actual retirements to expected retirements was 123%, resulting in an actuarial loss to the Fund.

Disability

The number of new disabled participants during 2016 was less than expected. The ratio of actual to expected disability was 72%, resulting in an actuarial gain to the Fund.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

SUMMARY OF VALUATION RESULTS (CONT'D)

Mortality

There were fewer active member deaths and more annuitant deaths than expected during 2016, which resulted in a net actuarial gain to the Fund.

Pay Increase

Average salaries for continuing active members in the 2015 and 2016 actuarial valuations increased by 5.26%. This was less than the expected increase of 5.74% from the 2015 salary. The smaller than expected salary increases resulted in an actuarial gain to the Fund.

Investment Return

During 2016, assets earned 4.9% on a market basis, 3.9% on a book basis and 6.7% on an actuarial basis which compares to the 2016 assumed return of 7.50%. During the year, the fund experienced a market value asset loss due to investment performance, and an actuarial loss on an actuarial (smoothed) value basis.

Data and Other Sources

There were small actuarial losses in liabilities due to data corrections and other sources.

Plan Provision Changes

Due to Public Act 99-0506, the actuarial funding cost method was changed from Projected Unit Credit to the Entry-Age Normal cost method. Public Act 99-0506 and Public Act 99-0905 included benefit changes for certain members.

As of December 31, 2016, the change in actuarial cost method increased the actuarial accrued liability by \$312 million and the change in benefits increased the actuarial accrued liability by \$609 million.

Assumption Changes

As of December 31, 2016, the assumed investment return was changed from 7.50% to 7.25% and the general inflation assumption was changed from 3.00% to 2.75%. These changes increased the actuarial accrued liability by \$307 million.

Conclusion

Overall, we believe that the actuarial assumptions are reasonable for the purpose of the measurement of the System's costs in effect as of December 31, 2016, under the provisions of P.A. 99-0506 and P.A. 99-0905. Table 5 of Appendix 1 shows a more detailed development of the actuarial gains and losses for the plan year ending December 31, 2016.

APPENDIX 1

RESULTS OF ACTUARIAL VALUATION

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY

Table 1A

	December 31,	
	2015	2016
<u>Assets</u>		
Book Value - Beginning of Year	\$ 2,737,727,266	\$ 2,935,266,948
<u>Income</u>		
Investment Income Net of Expenses	\$ 195,271,172	\$ 108,172,994
Employer Contributions	582,277,634	281,583,230
Employee Contributions	107,626,311	101,475,864
Miscellaneous	3,091,545	1,412,770
Subtotal	\$ 888,266,662	\$ 492,644,858
 <u>Outgo (Refunds, Benefits, & Administration)</u>	 \$ 690,726,980	 \$ 721,101,221
 Book Value - End of Year	 \$ 2,935,266,948	 \$ 2,706,810,585
Market Value - End of Year	3,058,949,037	2,865,018,804
Actuarial Value - End of Year	3,186,423,762	3,052,056,555
 <u>Member Counts</u>		
Active	12,061	12,177
Retirees	9,385	9,603
Survivors	3,143	3,166
Disabilities	306	275
Inactives	637	606
Children	376	350
 <u>Payroll Data</u>		
Valuation Payroll	\$ 1,086,607,979	\$ 1,119,526,987
Average Salary	90,093	91,938

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY (CONT'D)

Table 1B

<u>ACTUARIAL VALUES</u>	<u>December 31,</u>	
	<u>2015</u>	<u>2016</u>
<u>Statutory Funding</u>		
Actuarial Liability ¹	\$ 11,288,237,048	\$ 12,856,550,399
Assets - Actuarial Value	3,186,423,762	3,052,056,555
Unfunded Liability	8,101,813,286	9,804,493,844
Funded Ratio	28.23%	23.74%
Statutory Employer Contribution ² (Tax Levy Year)	\$ 464,000,000 (2016)	\$ 500,000,000 (2017)
<u>Book Value Funding</u>		
Actuarial Liability	\$ 11,288,237,048	\$ 12,856,550,399
Assets - Book Value	2,935,266,948	2,706,810,585
Unfunded Liability	8,352,970,100	10,149,739,814
Funded Ratio	26.00%	21.05%
<u>Termination Values</u>		
Liability	\$ 8,799,318,917	\$ 9,588,445,338
Deficiency	5,864,051,969	6,881,634,753
Quick Ratio	33.36%	28.23%
<u>Market Value Funding</u>		
Actuarial Liability	\$ 11,288,237,048	\$ 12,856,550,399
Assets - Market Value	3,058,949,037	2,865,018,804
Unfunded Liability	8,229,288,011	9,991,531,595
Funded Ratio	27.10%	22.28%
<u>ADC Values</u>		
Actuarial Liability - Entry Age ³	\$ 11,597,793,117	\$ 12,856,550,399
Assets - Actuarial Value	3,186,423,762	3,052,056,555
Unfunded Liability ³	8,411,369,355	9,804,493,844
Funded Ratio	27.47%	23.74%
Actuarially Determined Contribution (ADC) (Plan Year End)	795,164,039 (2016)	910,938,497 (2017)

¹Actuarial Liabilities for Statutory Funding and Market Value Funding are calculated using the Projected Unit Credit cost method for fiscal year ending December 31, 2015, and the Entry Age Normal cost method for fiscal year ending December 31, 2016.

²Pursuant to P.A. 99-0506, effective May 30, 2016, the fiscal year 2016 tax levy, payable in fiscal year 2017, is equal to \$464,000,000 and the fiscal year 2017 tax levy, payable in fiscal year 2018, is equal to \$500,000,000.

³Used to develop the Actuarially Determined Contribution under GASB Statement Nos. 67 and 68.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY (CONT'D)

Table 1C

Active Accrued Liability and Normal Cost by Tier
As of December 31, 2016

	<u>Tier 1 Members</u>	<u>Tier 2 Members</u> ¹	<u>Total</u>
(1) Count	9,841	2,336	12,177
(2) Payroll	\$ 954,728,107	\$ 164,798,880	\$ 1,119,526,987
(3) Average Payroll	\$ 97,015	\$ 70,547	\$ 91,938
(4) Actuarial Accrued Liability (AAL)	\$ 4,711,330,309	\$ 68,978,625	\$ 4,780,308,934
(5) Total Normal Cost	\$ 194,592,499	\$ 27,957,742	\$ 222,550,241
(6) Total Normal Cost as a Percent of Pay	20.4%	17.0%	19.9%
(7) Estimated Member Contributions	\$ 87,817,036	\$ 15,177,518	\$ 102,994,554
(8) Net Normal Cost	\$ 106,775,463	\$ 12,780,224	\$ 119,555,687
(9) Net Normal Cost as a Percent of Pay	11.2%	7.8%	10.7%

¹Members hired on or after January 1, 2011.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF BASIC ACTUARIAL VALUES

Table 2

	APV of Projected Benefits <u>As of 12/31/ 2016</u>	Actuarial Accrued Liability (AAL) <u>As of 12/31/ 2016</u>
<u>(1) Values for Active Members</u>		
(a) Retirement	\$6,242,645,085	\$4,551,671,470
(b) Termination	89,714,525	13,011,961
(c) Disability	456,627,943	186,083,462
(d) Death	<u>62,835,427</u>	<u>29,542,041</u>
Total for Actives	\$6,851,822,980	\$4,780,308,934
<u>(2) Values for Inactive Members</u>		
(a) Retired	7,125,885,848	7,125,885,848
(b) Survivor	607,970,737	607,970,737
(c) Disability	275,101,522	275,101,522
(d) Inactive (Deferred Vested)	58,030,128	58,030,128
(e) Children	<u>9,253,230</u>	<u>9,253,230</u>
Total for Inactives	8,076,241,465	8,076,241,465
<u>(3) Grand Totals</u>	<u>\$14,928,064,445</u>	<u>\$12,856,550,399</u>
<u>(4) Normal Cost for Active Members</u>	\$ 222,550,241	
<u>(5) Actuarial Present Value of Future Compensation</u>	\$11,661,482,965	

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
DEVELOPMENT OF STATUTORY CONTRIBUTION

Table 3a

Actuarial Valuation Projection Results as of December 31, 2016													
Discount Rate of 7.25%													
(\$ in Thousands)													
Year Ending	Actuarial Accrued Liability	Market Value of Assets	Actuarial Value of Assets	Unfunded Liability	Actuarial Value Funded Ratio	Uncapped Payroll	Capped Payroll	Employer Normal Cost	Statutory Contribution ¹	Statutory Contribution as % of Pay	Employee Contributions	Benefit Payments	Admin Expenses
2016	\$12,856,550	\$2,865,019	\$3,052,057	\$ 9,804,494	23.74%	\$1,119,527	\$1,119,527	\$116,346	\$ 282,996	25.3%	\$101,476	\$716,351	\$ 4,750
2017	13,278,023	2,916,672	3,066,597	10,211,426	23.10%	1,150,514	1,149,496	119,556	500,000	43.5%	102,995	723,541	4,880
2018	13,699,760	3,004,873	3,081,617	10,618,143	22.49%	1,184,728	1,182,254	112,498	557,000	47.1%	113,583	756,449	5,015
2019	14,117,853	3,086,411	3,101,276	11,016,576	21.97%	1,216,856	1,212,708	112,052	579,000	47.7%	116,598	792,155	5,152
2020	14,530,370	3,340,516	3,340,516	11,189,854	22.99%	1,250,907	1,244,396	111,506	781,625	62.8%	119,664	829,416	5,294
2021	14,936,021	3,592,668	3,592,668	11,343,352	24.05%	1,285,444	1,275,983	110,953	801,465	62.8%	122,736	867,535	5,440
2022	15,334,049	3,846,718	3,846,718	11,487,331	25.09%	1,321,102	1,308,956	110,414	822,177	62.8%	125,915	906,028	5,589
2023	15,723,164	4,101,812	4,101,812	11,621,352	26.09%	1,356,644	1,341,628	109,914	842,699	62.8%	129,117	945,298	5,743
2024	16,101,314	4,356,733	4,356,733	11,744,581	27.06%	1,392,414	1,374,318	109,318	863,232	62.8%	132,319	985,824	5,901
2025	16,465,992	4,609,840	4,609,840	11,856,152	28.00%	1,428,726	1,407,199	108,747	883,884	62.8%	135,649	1,028,163	6,063
2026	16,814,350	4,859,861	4,859,861	11,954,488	28.90%	1,466,612	1,440,269	107,605	904,656	62.8%	138,842	1,071,575	6,230
2027	17,145,148	5,107,031	5,107,031	12,038,117	29.79%	1,506,925	1,474,314	106,545	926,040	62.8%	142,062	1,115,156	6,401
2028	17,457,718	5,351,840	5,351,840	12,105,879	30.66%	1,549,840	1,508,339	105,377	947,412	62.8%	145,199	1,157,954	6,577
2029	17,752,868	5,597,412	5,597,412	12,155,456	31.53%	1,594,724	1,544,444	104,326	970,090	62.8%	148,479	1,198,966	6,758
2030	18,031,652	5,847,312	5,847,312	12,184,340	32.43%	1,642,464	1,582,980	103,555	994,295	62.8%	152,044	1,238,324	6,944
2031	18,295,383	6,106,358	6,106,358	12,189,024	33.38%	1,693,555	1,624,981	102,901	1,020,677	62.8%	155,845	1,275,637	7,135
2032	18,545,156	6,377,917	6,377,917	12,167,239	34.39%	1,746,983	1,668,244	102,456	1,047,851	62.8%	159,863	1,311,278	7,331
2033	18,781,504	6,664,092	6,664,092	12,117,411	35.48%	1,803,219	1,710,722	101,861	1,074,532	62.8%	163,741	1,345,126	7,533
2034	19,004,791	6,963,104	6,963,104	12,041,687	36.64%	1,861,316	1,745,793	100,852	1,096,561	62.8%	166,866	1,376,475	7,740
2035	19,216,201	7,272,651	7,272,651	11,943,550	37.85%	1,923,164	1,771,477	99,451	1,112,693	62.8%	169,096	1,404,434	7,953
2036	19,417,638	7,594,644	7,594,644	11,822,994	39.11%	1,987,999	1,794,429	98,063	1,127,110	62.8%	171,098	1,429,500	8,172
2037	19,611,221	7,931,990	7,931,990	11,679,232	40.45%	2,056,657	1,815,989	96,673	1,140,652	62.8%	172,922	1,451,634	8,396
2038	19,798,683	8,287,423	8,287,423	11,511,260	41.86%	2,127,947	1,836,452	95,284	1,153,505	62.8%	174,690	1,471,490	8,627
2039	19,981,481	8,664,414	8,664,414	11,317,068	43.36%	2,201,632	1,857,442	93,970	1,166,689	62.8%	176,435	1,489,564	8,864
2040	20,160,706	9,065,662	9,065,662	11,095,044	44.97%	2,278,309	1,878,217	92,791	1,179,739	62.8%	178,182	1,506,400	9,108
2041	20,337,963	9,495,289	9,495,289	10,842,674	46.69%	2,359,153	1,899,937	91,697	1,193,381	62.8%	179,913	1,521,506	9,359
2042	20,514,846	9,956,613	9,956,613	10,558,234	48.53%	2,443,609	1,921,330	90,837	1,206,818	62.8%	181,697	1,535,233	9,616
2043	20,692,512	10,453,965	10,453,965	10,238,546	50.52%	2,531,592	1,944,444	90,183	1,221,337	62.8%	183,605	1,548,160	9,881
2044	20,872,121	10,991,596	10,991,596	9,880,525	52.66%	2,622,280	1,968,857	89,764	1,236,671	62.8%	185,676	1,560,430	10,152
2045	21,053,953	11,573,000	11,573,000	9,480,953	54.97%	2,716,451	1,994,426	89,587	1,252,731	62.8%	187,884	1,572,963	10,431
2046	21,238,531	12,202,496	12,202,496	9,036,035	57.45%	2,814,569	2,021,592	89,592	1,269,795	62.8%	190,205	1,585,448	10,718
2047	21,426,043	12,883,868	12,883,868	8,542,175	60.13%	2,915,339	2,049,718	89,840	1,287,461	62.8%	192,665	1,598,343	11,013
2048	21,616,365	13,621,106	13,621,106	7,995,258	63.01%	3,019,531	2,079,139	90,299	1,305,941	62.8%	195,220	1,611,878	11,316
2049	21,809,656	14,418,458	14,418,458	7,391,198	66.11%	3,127,842	2,109,374	90,984	1,324,932	62.8%	197,879	1,625,796	11,627
2050	22,005,800	15,280,098	15,280,098	6,725,702	69.44%	3,240,550	2,140,202	91,859	1,344,295	62.8%	200,594	1,640,292	11,947
2051	22,204,762	16,210,657	16,210,657	5,994,104	73.01%	3,358,115	2,171,674	92,895	1,364,063	62.8%	203,347	1,655,227	12,275
2052	22,406,880	17,215,423	17,215,423	5,191,457	76.83%	3,480,554	2,203,720	94,108	1,384,192	62.8%	206,138	1,670,253	12,613
2053	22,612,564	18,300,130	18,300,130	4,312,433	80.93%	3,608,133	2,236,340	95,475	1,404,682	62.8%	208,967	1,685,306	12,960
2054	22,822,359	19,470,523	19,470,523	3,351,836	85.31%	3,741,006	2,268,722	97,004	1,425,021	62.8%	211,835	1,700,289	13,316
2055	23,036,954	20,732,234	20,732,234	2,304,720	90.00%	3,879,161	2,299,917	98,731	1,444,615	62.8%	214,743	1,715,142	13,682

¹ Contribution receivable to be paid in the following fiscal year. The funded ratio includes receivable contributions.

**POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
DEVELOPMENT OF STATUTORY CONTRIBUTION (CONT'D)**

Table 3b

	<u>Total</u>
<u>(1) Total Normal Cost for 2018</u>	\$ 226,080,806
<u>(2) Actuarial Accrued Liability (AAL) at 12/31/2017¹</u>	\$13,278,023,032
<u>(3) Unfunded AAL (UAAL)</u>	
(a) Actuarial Value of Assets at 12/31/2017	\$ 3,066,596,885
(b) UAAL (2-3(a))	10,211,426,147
<u>(4) Estimated Member Contributions during 2018</u>	\$ 113,583,000
<u>(5) Estimated City Contribution for Tax Levy Year 2018</u>	\$ 557,000,000

¹ Pension liabilities were discounted at 7.25% per year.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
DEVELOPMENT OF ACTUARIALLY DETERMINED CONTRIBUTION UNDER
GASB STATEMENT NOS. 67 AND 68 FOR 2017

Table 4

	Total
<u>(1) Total Normal Cost for 2017</u>	\$ 222,550,241
<u>(2) Actuarial Accrued Liability (AAL) at 12/31/2016</u>	\$12,856,550,399
<u>(3) Unfunded AAL (UAAL)</u>	
(a) Actuarial Value of Assets at 12/31/2016	\$ 3,052,056,555
(b) UAAL (2-3(a))	9,804,493,844
<u>(4) Amortization Payable at Beginning of Year ¹</u>	\$ 755,285,358
<u>(5) Estimated Member Contributions in 2017</u>	\$ 102,994,554
<u>(6) Actuarially Determined Contribution (ADC) for 2017</u>	
(a) Interest Adjustment for Semimonthly Payment	36,097,452
(b) Annual Required Contribution (1 + 4 - 5 + 6(a))	\$ 910,938,497
(c) Annual Required Contribution (Percent of Pay)	81.37%
<u>(7) Estimated City Contribution for Tax Levy Year 2017</u>	\$ 500,000,000
<u>(8) Estimated Deficiency/(Excess) for 2017</u>	
(a) in Dollars (6(b)-7)	\$ 410,938,497
(b) as a Percentage of Pay	36.71%

¹ Amortization is over a 30-year period as a level dollar amount.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
DEVELOPMENT OF ACTUARIAL GAINS AND LOSSES FOR 2016

Table 5

UNFUNDED ACTUARIAL ACCRUED LIABILITY - BEGINNING OF 2016

(1) Actuarial Accrued Liability - 12/31/2015	\$11,288,237,048
(2) Actuarial Value of Assets - 12/31/2015	3,186,423,762
(3) Unfunded Accrued Actuarial Liability - 12/31/2015	\$8,101,813,286

EXPECTED UNFUNDED ACTUARIAL ACCRUED LIABILITY - END OF 2016

(4) Normal Cost for 2016	\$ 217,821,561
(5) Total Contributions for 2016	384,471,864
(6) Interest on (3), (4), & (5) at Valuation Rates	610,982,541
(7) Expected Unfunded Actuarial Accrued Liability - 12/31/2016	\$8,546,145,524
((3)+(4)-(5)+(6))	

DEVIATIONS FROM EXPECTED

(8) (Gain)/Loss on Investment Return (Smoothed (Actuarial) Value)	\$29,248,901
(9) (Gain)/Loss from Salary Changes	(17,943,687)
(10) (Gain)/Loss from Retirement	42,423,340
(11) (Gain)/Loss from Turnover	5,863,360
(12) (Gain)/Loss from Mortality	(21,860,554)
(13) (Gain)/Loss from Disability	(9,192,304)
(14) (Gain)/Loss from New Entrants and Rehired Members	(5,230,684)
(15) (Gain)/Loss from All Other Sources	6,322,795
(16) Composite Actuarial (Gain)/Loss	\$29,631,167
(17) (Gain)/Loss as a percentage of Expected UAAL (16)/(7)	0.3%
(18) (Gain)/Loss from Actuarial Cost Method Change	\$312,343,821
(19) (Gain)/Loss from Provision Changes	\$609,296,130
(20) (Gain)/Loss from Assumption Changes	\$307,077,202

UNFUNDED ACTUARIAL ACCRUED LIABILITY - END OF 2016

(21) Unfunded Accrued Actuarial Liability - 12/31/2016	\$9,804,493,844
((7)+(16)+(18)+(19)+(20))	

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
HISTORY OF RECOMMENDED EMPLOYER MULTIPLES *

Table 6

Year of Report	Statutory Multiple	P.A. 99-0506 Multiple	Normal Cost Plus Interest	Normal Cost Plus Amortization ⁴	
				Level \$	Level % of Salary
1987 ¹	2.00	N/A	4.13	4.29	3.16
1988	2.00	N/A	4.16	4.32	3.18
1989 ^{1,2}	2.00	N/A	3.79	3.91	2.85
1990 ³	2.00	N/A	3.58	3.68	2.73
1991	2.00	N/A	3.80	3.91	2.98
1992 ¹	2.00	N/A	3.23	3.36	2.11
1993	2.00	N/A	3.23	3.37	2.10
1994	2.00	N/A	3.05	3.18	1.98
1995	2.00	N/A	3.34	3.49	2.17
1996	2.00	N/A	3.19	3.32	2.10
1997	2.00	N/A	3.10	3.23	2.04
1998 ^{1,2}	2.00	N/A	3.63	3.77	2.56
1999	2.00	N/A	3.15	3.27	2.24
2000 ¹	2.00	N/A	3.27	3.39	2.32
2001 ²	2.00	N/A	3.63	3.78	2.56
2002	2.00	N/A	4.62	4.79	3.33
2003 ^{1,2}	2.00	N/A	4.46	4.63	3.23
2004 ²	2.00	N/A	4.99	5.18	3.60
2005 ^{1,2}	2.00	N/A	5.33	5.56	3.85
2006	2.00	N/A	4.95	5.40	3.94
2007	2.00	N/A	4.98	5.43	3.97
2008	2.00	N/A	5.43	5.94	4.30
2009 ¹	2.00	N/A	5.87	6.42	4.61
2010	2.00	N/A	6.19	6.78	4.85
2011	2.00	N/A	5.71	6.26	4.45
2012 ¹	2.00	N/A	6.73	7.43	5.25
2013 ²	2.00	N/A	6.92	7.60	5.44
2014 ¹	2.00	N/A	7.94	8.88	6.49
2015 ⁵	N/A	4.57	7.76	8.68	6.35
2016 ^{1,2,6}	N/A	4.49	7.89	8.82	6.33

¹Change in actuarial assumptions.

²Change in benefits.

³Change in actuary.

⁴Prior to 2005, amortizations were over a 40-year period. In 2005, pension unfunded liability was amortized over a 40-year period and OPEB liability over a 30-year period. Starting in 2006, both pension and OPEB amortizations are over a 30-year period. Starting in 2013, OPEB amortizations are over a closed 3-year period as a level percent of pay.

⁵Funding based on P.A. 96-1495, plan provisions in effect as of December 31, 2015.

⁶Funding based on P.A. 99-0506.

*Based on book value of assets through 2013, then Actuarial Value of assets starting in 2014.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
ORDINARY DEATH BENEFIT RESERVE

Table 7

Actuarial Balance Sheet – 6% Basis

December 31, 2016

ASSETS

Fund Balance	(32,992,169)
Present Values of Future Contributions:	
Contributions by Members at \$30.00 a Year	4,360,782
Annual City Contribution of \$224,000	2,673,935
Unfunded Liability	60,265,706
TOTAL ASSETS	\$ 34,308,254

LIABILITIES

Present Value of Future Death Benefits (6%, 83 GAM)	
Active & Disabled Members	6,420,073
Retired Members	27,888,181
TOTAL LIABILITIES	\$ 34,308,254

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
ACTUARIAL ACCRUED LIABILITY PRIORITIZED SOLVENCY TEST

Table 8

Valuation Date 12/31	(1)	(2)	(3)	Actuarial Value of Assets	Portion (%) of Present Value Covered By Assets		
	Active and Inactive Member Contribution	Retirees and Beneficiaries	Active and Inactive Members (ER Financed Portion)		(1)	(2)	(3)
2002	\$ 846,622,627	\$ 3,769,125,439	\$ 1,769,097,893	\$ 4,124,579,960	100.00%	86.97%	0.00%
2003 ^{1,2}	893,425,839	3,856,262,804	1,831,744,607	4,039,695,590	100.00%	81.59%	0.00%
2004 ²	910,480,098	4,313,531,046	1,810,260,330	3,933,031,342	100.00%	70.07%	0.00%
2005 ^{1,2}	950,764,942	4,677,632,909	2,094,339,296	3,914,431,654	100.00%	63.36%	0.00%
2006	1,016,217,810	4,858,554,051	2,241,771,313	3,997,990,919	100.00%	61.37%	0.00%
2007	1,082,742,927	5,006,931,293	2,309,718,259	4,231,681,817	100.00%	62.89%	0.00%
2008	1,144,380,257	5,208,199,833	2,299,966,099	4,093,719,894	100.00%	56.63%	0.00%
2009 ¹	1,217,645,647	5,391,373,730	2,291,882,108	3,884,978,241	100.00%	49.47%	0.00%
2010	1,251,147,487	5,717,654,520	2,406,050,870	3,718,954,539	100.00%	43.16%	0.00%
2011	1,286,345,939	6,041,684,411	2,360,319,555	3,444,690,362	100.00%	35.72%	0.00%
2012 ¹	1,309,825,828	6,475,282,318	2,435,530,363	3,148,929,770	100.00%	28.40%	0.00%
2013 ²	1,358,193,244	6,594,792,197	2,127,620,103	3,053,881,777	100.00%	25.71%	0.00%
2014 ¹	1,410,544,951	7,159,705,456	2,477,941,780	2,954,318,954	100.00%	21.56%	0.00%
2015	1,484,316,625	7,279,289,531	2,524,630,892	3,186,423,762	100.00%	23.38%	0.00%
2016 ^{1,2}	1,518,846,208	8,018,211,337	3,319,492,854	3,052,056,555	100.00%	19.12%	0.00%

¹Change in actuarial assumptions.

²Change in benefits.

APPENDIX 2

ASSETS OF THE PLAN

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
RECONCILIATION OF ASSETS AS OF DECEMBER 31, 2016

The book value of the plan assets, net of accounts payable, decreased from \$2.935 billion as of December 31, 2015, to \$2.707 billion as of December 31, 2016. The market value of the plan assets, net of accounts payable, decreased from \$3.059 billion as of December 31, 2015, to \$2.865 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. In each future fiscal year, investment gains and losses will be phased in over a five-year period to determine the actuarial value of assets.

Table 9

	2015	2016
1. Market Value of assets beginning of year ¹	\$3,062,014,322	\$3,058,949,037
2. Income for plan year:		
a) Member contributions	\$ 107,626,311	\$ 101,475,864
b) City contributions	582,277,634	281,583,230
c) Investment income net of expenses ¹	(5,333,795)	142,699,124
d) Miscellaneous revenue	3,091,545	1,412,770
e) Total income	\$ 687,661,695	\$ 527,170,988
3. Disbursements for plan year:		
a) Benefit payments		
i) Pension, disability and death benefit payments	\$ 668,950,080	\$ 696,491,103
ii) Healthcare premiums	9,441,534	9,155,514
b) Refunds	7,826,847	10,704,842
c) Administration	4,508,519	4,749,762
d) Total disbursements	\$ 690,726,980	\$ 721,101,221
4. Market Value of assets end of year ¹	\$3,058,949,037	\$2,865,018,804
5. Estimated rate of return in 2016: ²		
a) Gross	0.13%	5.26%
b) Net of investment expense (Investment expense of \$9,313,790 in 2015 and \$9,348,521 in 2016)	-0.17%	4.93%

¹Book value of assets as of December 31, 2015 is \$2,935,266,948, Investment income net of expenses used for Book value for plan year 2016 is \$108,172,994 and book value as of December 31, 2016, is \$2,706,810,585.

²Method used for calculating rate of return does not reflect specific timing of income and outflows. It is also based on total assets, not invested assets.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
DEVELOPMENT OF ACTUARIAL (MARKET-RELATED)
VALUE OF ASSETS AS OF DECEMBER 31, 2016

Table 10

Year Ending December 31	2015	2016	2017	2018	2019	2020
Beginning of Year:						
(1) Market Value of Assets	\$3,062,014,322	\$3,058,949,037				
(2) Actuarial Value of Assets	2,954,318,954	3,186,423,762				
End of Year:						
(3) Market Value of Assets	3,058,949,037	2,865,018,804				
(4) Contributions and Disbursements						
(4a) City Contributions & Misc.	585,369,179	282,996,000				
(4b) Member Contributions	107,626,311	101,475,864				
(4c) Benefit Payouts & Refunds	(686,218,461)	(716,351,459)				
(4d) Administrative Expenses	(4,508,519)	(4,749,762)				
(4e) Net of Contributions and Disbursements	2,268,510	(336,629,357)				
(5) Total Investment Income						
=(3)-(1)-(4e)	(5,333,795)	142,699,124				
(6) Projected Rate of Return	7.50%	7.50%				
(7) Projected Investment Income						
=(1)x(6)+([1+(6)] ⁵ -1)x(4e)	229,734,605	217,025,789				
(8) Investment Income in Excess of Projected Income	(235,068,400)	(74,326,665)				
(9) Excess Investment Income Recognized						
This Year (5-year recognition)						
(9a) From This Year	(\$47,013,680)	(\$14,865,333)				
(9b) From One Year Ago	(11,301,607)	(47,013,680)	(\$14,865,333)			
(9c) From Two Years Ago	36,067,836	(11,301,607)	(47,013,680)	(\$14,865,333)		
(9d) From Three Years Ago	22,349,144	36,067,836	(11,301,607)	(47,013,680)	(\$14,865,333)	
(9e) From Four Years Ago	0	22,349,145	36,067,836	(11,301,608)	(47,013,680)	(\$14,865,333)
(9f) Total Recognized Investment Gain	101,693	(14,763,639)	(37,112,784)	(73,180,621)	(61,879,013)	(14,865,333)
(10) Change in Actuarial Value of Assets						
=(4e)+(7)+(9f)	232,104,808	(134,367,207)				
End of Year:						
(3) Market Value of Assets	\$3,058,949,037	\$2,865,018,804				
(11) Actuarial Value of Assets = (2)+(10)	\$3,186,423,762	\$3,052,056,555				

APPENDIX 3

DATA REFLECTING PLAN MEMBERS

EXHIBIT A
POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF CHANGES IN ACTIVE PARTICIPANTS
FOR FISCAL YEAR ENDING DECEMBER 31, 2016

	<u>Male</u>	<u>Female</u>	<u>Total</u>
Number of Participants at Beginning of Fiscal Year ²	9,331	2,730	12,061
Increases:			
Participants Added During Year	454	159	613
Participants Returning From Inactive or Disability Status	<u>39</u>	<u>11</u>	<u>50</u>
Totals	9,824	2,900	12,724
Decreases:			
Terminations During Year	<u>396</u>	<u>151</u>	<u>547</u>
Number of Participants at End of Fiscal Year	9,428	2,749	12,177
Total Inactive Participants			606
<u>Terminations:</u>			
Withdrawal (With Refunds) ¹	18	5	23
Withdrawal (Without Refunds)	33	12	45
Ordinary Disability Benefit	11	9	20
Occupational Disease Disability Benefit	1	0	1
Duty Disability Benefit	6	1	7
Retirements	321	122	443
Deaths (Occupational)	0	0	0
Deaths (Non-occupational)	<u>6</u>	<u>2</u>	<u>8</u>
Totals	396	151	547

¹ This total differs from the total of 57 shown in Exhibit D due to the fact that only 23 of the refunds were paid to participants who were considered to be active as of December 31, 2015.

² Includes four active members reclassified from male to female and four active members reclassified from female to male.

EXHIBIT B
POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF CHANGES IN ANNUITANTS AND BENEFICIARIES
FOR FISCAL YEAR ENDING DECEMBER 31, 2016

	<u>Number at Beginning of Year</u>	<u>Additions During Year</u>	<u>Terminations During Year</u>	<u>Number at End of Year</u>
Service Retirement Annuities	9,385	494 ¹	276	9,603
Widow Annuities	3,078	140	116	3,102
Children's Annuities	198	12	24	186
Ordinary Disability Benefit (Non-Occupational)	41	23	24	40
Occupational Disease Disability Benefit	35	2	4	33
Duty Disability Benefit (Occupational)	230	12	40	202
Children's Disability Benefit	178	14	28	164
Widows' Compensation Annuities (Service Connected Death)	65	0	1	64
Totals	<u>13,210</u>	<u>697</u>	<u>513</u>	<u>13,394</u>
Annual Benefits	\$663,672,037	\$ 51,387,198	\$ 21,205,238	\$693,853,997

¹ Includes data correction for one retiree previously valued as deceased.

EXHIBIT C – PART I
POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
TOTAL LIVES AND ANNUAL SALARIES OF ACTIVE MALE PARTICIPANTS
CLASSIFIED BY AGE AND YEARS OF SERVICE AS OF DECEMBER 31, 2016

AGE	Years of Service									Total	Annual Salary
	Under 1 year	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 and over		
Under 20										0	\$ 0
20 to 24	107 5,092,692	59 4,263,390								166	9,356,082
25 to 29	188 8,952,096	413 31,628,718	1 82,704							602	40,663,518
30 to 34	114 5,426,856	542 43,163,802	281 24,527,202	138 12,461,616						1,075	85,579,476
35 to 39	40 1,904,160	253 20,192,076	203 17,651,646	834 75,876,702	223 21,712,890					1,553	137,337,474
40 to 44	3 142,812	72 5,809,698	80 6,977,808	434 39,130,068	809 78,091,236	144 14,845,914				1,542	144,997,536
45 to 49		1 82,704	35 3,045,498	267 24,100,116	756 72,321,780	936 95,695,187	181 19,673,398	1 128,670		2,177	215,047,353
50 to 54			1 86,700	69 6,199,776	297 28,058,130	501 49,998,758	506 54,166,236	127 14,775,476		1,501	153,285,076
55 to 59	1 150,000			1 89,622	111 10,453,698	192 18,927,264	208 21,853,332	97 11,394,776		610	62,868,692
60 to 63				1 89,622	36 3,355,992	52 5,141,682	62 6,410,070	41 4,611,324	10 1,139,254	202	20,747,944
Total Active	453	1,340	601	1,744	2,232	1,825	957	266	10	9,428	
Annual Salary	\$21,668,616	\$105,140,388	\$52,371,558	\$157,947,522	\$213,993,726	\$184,608,805	\$102,103,036	\$30,910,246	\$ 1,139,254		\$ 869,883,151

EXHIBIT C – PART II
POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
TOTAL LIVES AND ANNUAL SALARIES OF ACTIVE FEMALE PARTICIPANTS
CLASSIFIED BY AGE AND YEARS OF SERVICE AS OF DECEMBER 31, 2016

AGE	Years of Service									Total	Annual Salary
	Under 1 year	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 and over		
Under 20		1 47,604								1	\$ 47,604
20 to 24	24 1,142,496	9 655,434								33	1,797,930
25 to 29	66 3,141,864	84 6,318,018								150	9,459,882
30 to 34	39 1,856,556	140 11,090,934	68 5,929,728	43 3,885,036						290	22,762,254
35 to 39	29 1,380,516	78 6,191,244	67 5,828,064	227 20,496,538	49 4,712,466					450	38,608,828
40 to 44	1 47,604	34 2,752,308	34 2,956,200	149 13,427,724	221 21,159,858	37 3,833,142				476	44,176,836
45 to 49			16 1,387,200	111 10,022,256	208 19,811,472	216 21,505,932	39 4,194,300			590	56,921,160
50 to 54				39 3,495,258	110 10,326,984	158 15,767,334	136 14,380,336	26 2,829,342		469	46,799,254
55 to 59				1 89,622	60 5,636,322	76 7,499,304	62 6,515,196	29 3,196,068		228	22,936,512
60 to 63				1 89,622	20 1,875,042	24 2,352,702	14 1,425,126	1 117,186	2 273,898	62	6,133,576
Total Active	159	346	185	571	668	511	251	56	2	2,749	
Annual Salary	\$7,569,036	\$27,055,542	\$16,101,192	\$51,506,056	\$63,522,144	\$50,958,414	\$26,514,958	\$6,142,596	\$ 273,898		\$ 249,643,836

EXHIBIT C – PART III
POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
TOTAL LIVES AND ANNUAL SALARIES OF ALL ACTIVE PARTICIPANTS
CLASSIFIED BY AGE AND YEARS OF SERVICE AS OF DECEMBER 31, 2016

AGE	Years of Service									Total	Annual Salary
	Under 1 year	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 and over		
Under 20		1 47,604								1	\$ 47,604
20 to 24	131 6,235,188	68 4,918,824								199	11,154,012
25 to 29	254 12,093,960	497 37,946,736	1 82,704							752	50,123,400
30 to 34	153 7,283,412	682 54,254,736	349 30,456,930	181 16,346,652						1,365	108,341,730
35 to 39	69 3,284,676	331 26,383,320	270 23,479,710	1,061 96,373,240	272 26,425,356					2,003	175,946,302
40 to 44	4 190,416	106 8,562,006	114 9,934,008	583 52,557,792	1,030 99,251,094	181 18,679,056				2,018	189,174,372
45 to 49		1 82,704	51 4,432,698	378 34,122,372	964 92,133,252	1,152 117,201,119	220 23,867,698	1 128,670		2,767	271,968,513
50 to 54			1 86,700	108 9,695,034	407 38,385,114	659 65,766,092	642 68,546,572	153 17,604,818		1,970	200,084,330
55 to 59	1 150,000			2 179,244	171 16,090,020	268 26,426,568	270 28,368,528	126 14,590,844		838	85,805,204
60 to 63				2 179,244	56 5,231,034	76 7,494,384	76 7,835,196	42 4,728,510	12 1,413,152	264	26,881,520
Total Active	612	1,686	786	2,315	2,900	2,336	1,208	322	12	12,177	
Annual Salary	\$29,237,652	\$132,195,930	\$68,472,750	\$209,453,578	\$277,515,870	\$235,567,219	\$128,617,994	\$37,052,842	\$ 1,413,152		\$ 1,119,526,987

EXHIBIT D – PART I
POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
SHOWING NUMBER OF REFUND PAYMENTS MADE DURING YEAR
TO MALE EMPLOYEES FOR FISCAL YEAR ENDING DECEMBER 31, 2016

Age at Date of Refund	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							0
20 to 24							0
25 to 29	1	1	2	2			6
30 to 34	2	1	2	1		1	7
35 to 39	1	1				6	8
40 to 44				1		8	9
45 to 49	1				1	9	11
50 to 54	1						1
55 to 59							0
60 to 63	1						1
Totals	7	3	4	4	1	24	43

Includes only number of actual refunds paid or accrued during fiscal year reported.

EXHIBIT D – PART II
POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
SHOWING NUMBER OF REFUND PAYMENTS MADE DURING YEAR
TO FEMALE EMPLOYEES FOR FISCAL YEAR ENDING DECEMBER 31, 2016

Age at Date of Refund	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							0
20 to 24							0
25 to 29		1		1			2
30 to 34							0
35 to 39						3	3
40 to 44						3	3
45 to 49	1					2	3
50 to 54	1					1	2
55 to 59			1				1
60 to 63							0
Totals	2	1	1	1	0	9	14

Includes only number of actual refunds paid or accrued during fiscal year reported.

EXHIBIT E
POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SHOWING STATISTICS ON SERVICE RETIREMENT ANNUITIES
CLASSIFIED BY AGE AS OF DECEMBER 31, 2016

AGE	MALE		FEMALE		TOTAL	
	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments
UNDER 50	5	\$ 63,000	4	\$ 50,400	9	\$ 113,400
50	14	598,623	5	274,818	19	873,441
51	30	1,870,957	22	1,186,271	52	3,057,228
52	56	3,431,684	29	1,666,073	85	5,097,757
53	62	4,056,027	26	1,461,034	88	5,517,061
54	43	2,697,157	27	1,481,543	70	4,178,700
55	86	5,552,964	51	3,293,370	137	8,846,334
56	135	9,088,452	54	3,649,296	189	12,737,748
57	137	9,204,245	64	3,785,577	201	12,989,822
58	117	7,726,446	79	4,796,347	196	12,522,793
59	153	9,823,059	84	4,956,989	237	14,780,048
60	116	7,226,525	76	4,167,044	192	11,393,569
61	152	9,837,277	65	3,506,745	217	13,344,022
62	194	14,346,504	76	4,599,209	270	18,945,713
63	260	17,952,615	91	5,611,175	351	23,563,790
64	282	19,328,514	99	6,129,205	381	25,457,719
65	392	28,080,192	98	6,057,166	490	34,137,358
66	424	30,790,428	106	6,358,059	530	37,148,487
67	451	31,353,289	79	4,685,288	530	36,038,577
68	489	34,232,170	103	5,863,015	592	40,095,185
69	549	38,094,100	71	4,105,368	620	42,199,468
70	515	34,650,024	45	2,121,096	560	36,771,120
71	324	21,428,605	35	1,805,381	359	23,233,986
72	333	21,867,543	37	2,003,513	370	23,871,056
73	358	22,929,972	36	1,666,739	394	24,596,711
74	308	19,214,337	23	1,099,158	331	20,313,495
75	273	16,368,172	16	891,032	289	17,259,204
76	221	13,315,822	14	716,963	235	14,032,785
77	198	11,635,842	2	45,966	200	11,681,808
78	200	11,627,268	3	183,081	203	11,810,349
79	147	8,122,402	5	248,678	152	8,371,080
80	125	6,880,370	5	297,102	130	7,177,472
81	110	6,147,443	1	43,664	111	6,191,107
82	94	5,205,337	0	0	94	5,205,337
83	97	5,197,833	0	0	97	5,197,833
84	114	5,912,008	0	0	114	5,912,008
85 to 89	356	17,840,938	0	0	356	17,840,938
90 to 94	130	5,402,394	0	0	130	5,402,394
95 to 99	20	685,631	0	0	20	685,631
100+	2	53,964	0	0	2	53,964
Totals	8,072	\$519,840,133	1,531	\$88,806,365	9,603	\$608,646,498

EXHIBIT F
POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SHOWING STATISTICS ON WIDOW'S ANNUITIES
CLASSIFIED BY AGE AS OF DECEMBER 31, 2016

Age	No.	Annual Payments	Age	No.	Annual Payments
Under 30	0	\$ 0	65	59	\$ 1,354,917
30	1	24,490	66	68	1,631,684
31	0	0	67	90	2,057,570
32	1	29,239	68	97	2,448,129
33	2	45,999	69	102	2,382,254
34	1	20,953	70	108	2,466,634
35	0	0	71	95	2,084,530
36	0	0	72	84	1,896,993
37	1	19,399	73	113	2,583,178
38	0	0	74	115	2,477,005
39	2	50,519	75	90	2,033,017
40	1	55,111	76	91	1,973,545
41	3	62,088	77	96	2,021,791
42	3	98,422	78	119	2,208,987
43	2	40,828	79	118	2,316,969
44	5	105,930	80	112	2,261,852
45	7	175,875	81	91	1,757,184
46	9	221,332	82	90	1,808,785
47	9	174,990	83	92	1,816,800
48	5	109,871	84	92	1,732,164
49	10	215,756	85	100	1,773,348
50	4	90,960	86	99	1,754,477
51	12	280,716	87	78	1,353,796
52	12	278,034	88	76	1,246,319
53	14	326,287	89	81	1,350,054
54	8	202,755	90	73	1,180,585
55	14	290,113	91	52	767,544
56	21	498,660	92	43	670,969
57	19	410,591	93	42	625,075
58	23	513,499	94	25	366,352
59	26	564,786	95	27	350,836
60	29	709,795	96	28	365,669
61	33	811,963	97	9	125,953
62	53	1,293,033	98	7	94,267
63	48	1,276,782	99	6	72,000
64	47	1,213,115	100+	9	108,000
			Total	3,102	\$63,731,123

EXHIBIT G
POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SHOWING STATISTICS ON MISCELLANEOUS ANNUITIES
FOR FISCAL YEAR ENDING DECEMBER 31, 2016

	<u>No.</u>	<u>Annual Payments</u>
Children's Annuities	186	\$1,266,204
Widows' Compensation Annuities	64	4,108,480
Ordinary Disability Benefits	40	1,814,936
Occupational Disease Disability Benefits	33	1,899,923
Duty Disability Benefits	202	12,169,246
Children's Disability Benefits	164	217,587
Totals	689	\$21,476,376

EXHIBIT H – PART I
POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
SHOWING MALE PARTICIPANTS RECEIVING DUTY DISABILITY
CLASSIFIED BY AGE AND LENGTH OF SERVICE AS OF DECEMBER 31, 2016

Length of Service as of December 31, 2016														
ATTAINED AGE	Under 1 Year		1 to 4		5 to 9		10 to 14		15 to 19		20 & Over		Total	
	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments
UNDER 30													0	\$ 0
30 to 34					1	63,149							1	63,149
35 to 39			1	51,685	4	234,413	4	233,405					9	519,503
40 to 44			2	108,936	4	231,092	6	368,867	2	112,887	1	46,569	15	868,351
45 to 49			2	108,936	6	326,916	12	718,068	12	740,815	2	132,633	34	2,027,368
50 to 54			5	289,202	1	55,566	5	294,520	12	779,303	7	507,066	30	1,925,657
55 to 59			2	112,522	1	55,566	9	505,935	7	450,194	7	452,453	26	1,576,670
60 to 63			3	162,414			5	293,961	3	193,809	4	211,729	15	861,913
Totals	0	\$0	15	\$ 833,695	17	\$ 966,702	41	\$ 2,414,756	36	\$ 2,277,008	21	\$ 1,350,450	130	\$ 7,842,611

EXHIBIT H – PART II
POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
SHOWING FEMALE PARTICIPANTS RECEIVING DUTY DISABILITY
CLASSIFIED BY AGE AND LENGTH OF SERVICE AS OF DECEMBER 31, 2016

Length of Service as of December 31, 2016														
ATTAINED AGE	Under 1 Year		1 to 4		5 to 9		10 to 14		15 to 19		20 & Over		Total	
	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments
UNDER 30													0	\$ 0
30 to 34													0	0
35 to 39			1	51,685									1	51,685
40 to 44			4	211,921			3	188,664	1	67,455			8	468,040
45 to 49			1	55,566	3	168,087	5	295,464	6	388,909	2	115,130	17	1,023,156
50 to 54			2	110,542	3	183,585	7	435,693	5	297,428	4	280,062	21	1,307,310
55 to 59					5	292,787	6	326,319	5	325,465	2	136,762	18	1,081,333
60 to 63			1	55,458	1	55,458	4	227,131	1	57,064			7	395,111
Totals	0	\$0	9	\$485,172	12	\$699,917	25	\$1,473,271	18	\$1,136,321	8	\$531,954	72	\$ 4,326,635

EXHIBIT I – PART I
POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
SHOWING MALE PARTICIPANTS RECEIVING ORDINARY DISABILITY
CLASSIFIED BY AGE AND LENGTH OF SERVICE AS OF DECEMBER 31, 2016

Length of Service as of December 31, 2016														
ATTAINED AGE	Under 1 Year		1 to 4		5 to 9		10 to 14		15 to 19		20 & Over		Total	
	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments
UNDER 30													0	\$ 0
30 to 34													0	0
35 to 39					2	84,198	2	87,915	1	51,432			5	223,545
40 to 44									1	45,432			1	45,432
45 to 49							1	44,541	3	130,508	3	152,339	7	327,388
50 to 54									2	88,958	4	187,586	6	276,544
55 to 59											1	45,034	1	45,034
60 to 63													0	0
Totals	0	\$0	0	\$0	2	\$84,198	3	\$132,456	7	\$316,330	8	\$384,959	20	\$ 917,943

EXHIBIT I- PART II
POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SHOWING FEMALE PARTICIPANTS RECEIVING ORDINARY DISABILITY
CLASSIFIED BY AGE AND LENGTH OF SERVICE AS OF DECEMBER 31, 2016

Length of Service as of December 31, 2016														
ATTAINED AGE	Under 1 Year		1 to 4		5 to 9		10 to 14		15 to 19		20 & Over		Total	
	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments
UNDER 30													0	\$ 0
30 to 34													0	0
35 to 39							1	43,518					1	43,518
40 to 44			1	38,754			1	43,104					2	81,858
45 to 49					1	42,099	1	46,305	2	89,511	6	279,332	10	457,247
50 to 54									2	87,202	2	91,961	4	179,163
55 to 59											2	90,666	2	90,666
60 to 63											1	44,541	1	44,541
Totals	0	\$0	1	\$38,754	1	\$42,099	3	\$132,927	4	\$176,713	11	\$506,500	20	\$ 896,993

EXHIBIT J – PART I
POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
SHOWING MALE PARTICIPANTS RECEIVING OCCUPATIONAL DISEASE DISABILITY
CLASSIFIED BY AGE AND LENGTH OF SERVICE AS OF DECEMBER 31, 2016

Length of Service as of December 31, 2016														
ATTAINED AGE	Under 1 Year		1 to 4		5 to 9		10 to 14		15 to 19		20 & Over		Total	
	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments
UNDER 30													0	\$ 0
30 to 34													0	0
35 to 39													0	0
40 to 44							1	61,019					1	61,019
45 to 49													0	0
50 to 54							1	55,458	3	164,278	4	253,245	8	472,981
55 to 59									4	202,114	8	480,104	12	682,218
60 to 63							1	47,955			4	259,683	5	307,638
Totals	0	\$0	0	\$0	0	\$0	3	\$164,432	7	\$366,392	16	\$993,032	26	\$ 1,523,856

EXHIBIT J- PART II
POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SHOWING FEMALE PARTICIPANTS RECEIVING OCCUPATIONAL DISEASE DISABILITY
CLASSIFIED BY AGE AND LENGTH OF SERVICE AS OF DECEMBER 31, 2016

Length of Service as of December 31, 2016															
ATTAINED AGE	Under 1 Year		1 to 4		5 to 9		10 to 14		15 to 19		20 & Over		Total		
	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	No.	Annual Payments	
UNDER 30													0	\$ 0	
30 to 34													0	0	
35 to 39													0	0	
40 to 44									1	60,267			1	60,267	
45 to 49											1	56,609	1	56,609	
50 to 54						2	93,768	1	49,293	1	57,429	1	57,429	4	200,490
55 to 59											1	58,701	1	58,701	
60 to 63													0	0	
Totals	0	\$0	0	\$0	0	\$0	2	\$93,768	2	\$109,560	3	\$172,739	7	\$ 376,067	

EXHIBIT K
POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
HISTORY OF AVERAGE ANNUAL SALARIES

Year End	Members in Service	Increase	Current Year Salary	Increase	Average Salary	Increase	Actuarial Assumptions	CPI Chicago
1987	12,602	0.2 %	\$ 443,122,728	2.6 %	\$ 35,163	2.4 %	6.00	4.1 %
1988 ¹	12,495	(0.8)	443,669,520	0.1	35,508	1.0	6.00	3.9
1989	12,060	(3.5)	437,121,504	(1.5)	36,246	2.1	6.00	5.1
1990	12,039	(0.2)	471,544,173	7.9	39,168	8.1	6.00	5.5
1991	12,513	3.9	520,015,930	10.3	41,558	6.1	6.00	3.0
1992	12,570	0.5	538,404,098	3.5	42,832	3.1	5.80	3.3
1993	12,591	0.2	561,156,282	4.2	44,568	4.1	5.80	2.3
1994	13,095	4.0	599,073,276	6.8	45,748	2.6	5.80	2.9
1995	13,437	2.6	622,413,737	3.9	46,321	1.3	5.80	2.2
1996	13,475	0.3	654,149,310	5.1	48,545	4.8	5.80	3.8
1997	13,435	(0.3)	675,515,532	3.7	50,280	3.6	5.80	1.7
1998 ²	13,586	1.1	736,401,756	9.0	54,203	7.8	5.50	1.5
1999	13,829	1.8	755,303,667	2.6	54,617	0.8	5.50	2.6
2000	13,858	0.2	759,343,026	0.5	54,795	0.3	5.50	4.0
2001	13,889	0.2	763,352,475	0.5	54,961	0.3	5.50	0.8
2002	13,720	(1.2)	866,531,789	13.5	63,158	14.9	5.50	2.5
2003	13,746	0.2	887,555,791	2.4	64,568	2.2	5.50	1.7
2004	13,569	(1.3)	874,301,958	(1.5)	64,434	(0.2)	5.50	2.2
2005	13,462	(0.8)	948,973,732	8.5	70,493	9.4	5.50	3.6
2006	13,749	2.1	1,012,983,635	6.7	73,677	4.5	5.50	0.7
2007	13,748	0.0	1,038,957,026	2.6	75,572	2.6	5.50	4.7
2008	13,373	(2.7)	1,023,580,667	(1.5)	76,541	1.3	5.50	(0.6)
2009	13,154	(1.6)	1,011,205,359	(1.2)	76,874	0.4	5.50	2.5
2010	12,737	(3.2)	1,048,084,301	3.6	82,287	7.0	5.50	1.2
2011	12,236	(3.9)	1,034,403,526	(1.3)	84,538	2.7	5.50	2.1
2012	12,026	(1.7)	1,015,170,686	(1.9)	84,415	(0.1)	5.50	1.7
2013	12,161	1.1	1,015,426,126	0.0	83,499	(1.1)	5.50	0.5
2014	12,020	(1.2)	1,074,333,318	5.8	89,379	7.0	4.80	1.5
2015	12,061	0.3	1,086,607,979	1.1	90,093	0.8	4.80 ³	0.0
2016	12,177	1.0	1,119,526,987 ⁴	3.0	91,938	2.0	4.80 ³	1.9
Average Increase (Decrease) for the last 5 years:		(0.1)%		1.6 %		1.7 %		1.1 %

¹ Figures do not include retroactive raise.

² Pay definition changed to include duty availability pay.

³ See Appendix 4 for a complete description of the current assumptions.

⁴ Of the \$1,119,526,987 current year salary, \$39,792,058 is duty availability pay.

EXHIBIT L
POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
NEW ANNUITIES GRANTED DURING 2016

	Annuitants ⁴	Widows/ Widowers of Deceased Employees ¹	Widows/ Widowers of Deceased Annuitants	Compensation Widows/ Widowers
Number retired/deceased	493	6	134	0
Average age attained	57.5	51.3	70.9	0.0
Average length of service	26.9	N/A	N/A	N/A
Average annual salary ²	\$ 98,945	N/A	N/A	N/A
Average annual final salary	\$ 102,841	N/A	N/A	N/A
Total annual annuity	33,332,705	181,115	4,150,222	0
Average annual annuity	67,611	30,185	30,971	0
Total liability [(Based on 3% Comb. and 4% Amer. Exp.)]	\$ 488,463,163	3,111,470	39,206,975	0
Average liability	\$ 990,797	518,578	292,589	0
Total investment [Employee-paid for tax purposes]	\$ 176,090	N/A	N/A	N/A
Average investment ³	\$ 357	N/A	N/A	N/A
Liability/cost	2,773.9	N/A	N/A	N/A
Liability/final pay	\$ 9.63	N/A	N/A	N/A

¹ Not including compensation or supplemental.

² Average annual salary is 4 out of 10 years for members hired before January 1, 2011, and 8 out of 10 years for members hired on or after January 1, 2011.

³ Based on previously-taxed contributions.

⁴ Excludes data correction for one retiree previously valued as deceased.

EXHIBIT M
POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
RETIREES AND BENEFICIARIES BY TYPE OF BENEFIT

Years	ANNUITANTS			DISABILITY				Widow	Total
	Employee	Spouse ¹	Child	Ordinary	Duty	Occup.	Child ²	Comp.	
1987	4,467	3,100	354	66	156			75	8,218
1988	4,595	3,184	350	63	167			78	8,437
1989	4,772	3,202	335	58	179			71	8,617
1990	4,936	3,214	335	51	187			66	8,789
1991	5,033	3,137	329	75	192			68	8,834
1992	5,109	3,129	310	83	204			66	8,901
1993	5,195	3,151	294	59	211		160	66	9,136
1994	5,309	3,123	281	51	221		159	64	9,208
1995	5,510	3,133	254	51	231	1	144	60	9,384
1996	5,714	3,120	252	67	256	12	158	59	9,638
1997	5,945	3,104	240	59	270	36	130	59	9,843
1998	6,241	3,093	228	56	279	57	150	57	10,161
1999	6,520	3,118	249	57	291	76	150	58	10,519
2000	6,876	3,107	267	48	274	87	149	59	10,867
2001	7,192	3,114	255	52	265	95	143	59	11,175
2002	7,392	3,092	235	38	289	103	150	59	11,358
2003	7,498	3,083	247	29	285	97	139	63	11,441
2004	7,815	3,133	249	44	287	85	130	65	11,808
2005	8,026	3,107	247	35	298	82	139	65	11,999
2006	8,083	3,093	255	39	291	69	132	64	12,026
2007	8,155	3,137	242	52	284	65	136	64	12,135
2008	8,210	3,148	237	39	286	58	139	66	12,183
2009	8,227	3,111	232	44	284	52	138	66	12,154
2010	8,495	3,079	222	37	284	40	155	69	12,381
2011	8,763	3,091	214	43	270	36	176	70	12,663
2012	9,035	3,122	214	47	263	36	180	69	12,966
2013	9,194	3,130	206	46	269	35	213	66	13,159
2014	9,311	3,109	197	48	259	36	204	66	13,230
2015	9,385	3,078	198	41	230	35	178	65	13,210
2016	9,603	3,102	186	40	202	33	164	64	13,394

¹ Includes reversionary.

² Children's Disability Benefit not tracked before 1993.

EXHIBIT N
POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
AVERAGE EMPLOYEE RETIREMENT BENEFITS PAYABLE

Years Ended	Average Annual Benefit	Average Current Age of Retirees	Average Age at Retirement Current Year *	Average Years of Benefit Service at Retirement Current Year *
1987	\$ 16,257	67	58.1	30.1
1988	17,855	67	58.8	30.9
1989	19,315	67	58.6	30.7
1990	21,120	68	58.9	30.2
1991	21,782	68	58.4	30.8
1992	23,128	68	57.7	30.3
1993	24,724	68	56.9	29.6
1994	25,636	68	55.7	29.5
1995	26,996	67	55.3	29.2
1996	28,412	67	55.5	29.8
1997	29,867	67	55.0	29.3
1998	31,682	66	54.6	30.0
1999	33,220	66	54.8	29.9
2000	34,880	66	56.3	31.6
2001	36,428	66	56.4	29.8
2002	38,199	66	55.6	29.4
2003	38,998	66	57.1	30.2
2004	41,914	66	57.5	30.4
2005	43,930	67	57.3	30.6
2006	45,680	67	58.0	29.6
2007	47,392	67	58.1	29.3
2008	49,239	68	58.3	29.4
2009	50,799	68	59.2	28.6
2010	53,060	68	59.1	28.1
2011	55,104	68	59.5	27.4
2012	56,896	69	58.7	26.7
2013	58,556	69	58.2	26.1
2014	60,111	69	57.6	26.2
2015	61,702	69	57.5	26.5
2016	63,381	69	57.5	26.9

* Averages for New Annuitants in 2016.

EXHIBIT O – PART I
POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
HISTORY OF ANNUITIES EMPLOYEE ANNUITANTS (MALE AND FEMALE)

Year End	Number of Annuitants	Total Annuities	Average Annuities
1987	4,467	\$ 72,621,701	\$ 16,257
1988	4,595	82,044,371	17,855
1989	4,772	92,170,354	19,315
1990	4,936	104,221,349	21,114
1991	5,033	109,629,175	21,782
1992	5,109	118,162,135	23,128
1993	5,195	128,443,550	24,724
1994	5,309	136,102,089	25,636
1995	5,510	148,748,836	26,996
1996	5,714	162,343,898	28,412
1997	5,945	177,557,655	29,867
1998	6,241	197,728,489	31,682
1999	6,520	216,593,933	33,220
2000	6,876	239,833,436	34,880
2001	7,192	261,991,891	36,428
2002	7,392	282,368,164	38,199
2003	7,498	292,407,321	38,998
2004	7,815	327,560,253	41,914
2005	8,026	352,579,199	43,930
2006	8,083	369,228,619	45,680
2007	8,155	386,485,701	47,392
2008	8,210	404,254,060	49,239
2009	8,227	417,924,766	50,799
2010	8,495	450,742,884	53,060
2011	8,763	482,875,300	55,104
2012	9,035	514,053,838	56,896
2013	9,194	538,368,228	58,556
2014	9,311	559,689,145	60,111
2015	9,385	579,069,731	61,702
2016	9,603	608,646,498	63,381

EXHIBIT O – PART II
POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
HISTORY OF ANNUITIES SPOUSE ANNUITANTS
(NOT INCLUDING COMPENSATION WIDOWS)

Year End	Number of Annuitants	Total Annuities	Average Annuities
1987	3,100	\$ 12,959,691	\$ 4,180
1988	3,184	13,701,678	4,303
1989	3,202	16,304,771	5,092
1990	3,214	16,779,894	5,221
1991	3,137	17,342,488	5,528
1992	3,129	20,773,699	6,639
1993	3,151	24,711,076	7,842
1994	3,123	28,041,269	8,979
1995	3,133	28,792,959	9,190
1996	3,120	30,778,518	9,865
1997	3,104	31,492,268	10,146
1998	3,093	32,285,743	10,438
1999	3,118	36,134,606	11,589
2000	3,107	37,022,962	11,916
2001	3,114	38,316,493	12,305
2002	3,092	40,086,748	12,965
2003	3,083	39,924,324	12,950
2004	3,133	44,609,535	14,239
2005	3,107	47,658,776	15,339
2006	3,093	49,187,928	15,903
2007	3,137	51,646,225	16,464
2008	3,148	53,489,665	16,992
2009	3,111	53,381,986	17,159
2010	3,079	53,621,501	17,415
2011	3,091	55,323,666	17,898
2012	3,122	57,650,477	18,466
2013	3,130	59,360,519	18,965
2014	3,109	60,248,462	19,379
2015	3,078	61,439,136	19,961
2016	3,102	63,731,123	20,545

EXHIBIT P
POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
COUNTS OF RETIREES AND BENEFICIARIES WITH HEALTHCARE
COVERAGE SUBSIDIES

Year End	Employee	Spouse ¹	Total
2006	7,552	2,104	9,656
2007	7,637	2,253	9,890
2008	7,731	2,286	10,017
2009	7,763	2,285	10,048
2010	7,878	2,240	10,118
2011	8,111	2,257	10,368
2012	8,458	2,280	10,738
2013	8,539	2,270	10,809
2014	8,450	2,226	10,676
2015	8,278	2,127	10,405
2016	8,189	2,079	10,268

¹ Includes children.

EXHIBIT Q
POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SCHEDULE OF RETIRED MEMBERS BY TYPES OF BENEFIT AND MONTHLY BENEFIT LEVELS

Monthly Benefit	Retirement		Disability		Widow ¹		Child		Totals	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Under \$100	5								5	0
\$100 to under \$250	10	3					96	87	106	90
\$250 to under \$500	23	8					26	22	49	30
\$500 to under \$750	21	5					46	43	67	48
\$750 to under \$1,000	5	4					16	6	21	10
\$1,000 to under \$2,000	75	38			38	2,100	7	1	120	2,139
\$2,000 to under \$3,000	267	32	2		17	803			286	835
\$3,000 to under \$4,000	914	346	24	22	2	122			940	490
\$4,000 to under \$5,000	1,777	450	78	46		35			1,855	531
\$5,000 to under \$6,000	2,413	345	62	29	3	37			2,478	411
\$6,000 to under \$7,000	1,730	208	7	2		4			1,737	214
\$7,000 to under \$8,000	515	57	3			3			518	60
\$8,000 to under \$9,000	167	16				1			167	17
\$9,000 to under \$10,000	57	10				1			57	11
\$10,000 and over	93	9							93	9
Totals:	8,072	1,531	176	99	60	3,106	191	159	8,499	4,895

¹ Includes reversionary.

EXHIBIT R
POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SCHEDULE OF AVERAGE BENEFIT PAYMENTS FOR NEW ANNUITIES GRANTED DURING 2016

Years of Service:	0-9	10-14	15-19	20-24	25-29	30-34	>= 35	Total
2010	0	1	13	105	161	140	131	551
Average annual salary used	\$0	\$81,122	\$70,339	\$80,639	\$88,735	\$91,739	\$92,194	\$88,330
Average Monthly Benefit	\$0	\$2,535	\$2,667	\$3,837	\$5,385	\$5,734	\$5,762	\$5,199
2011	1	8	16	95	175	103	102	500
Average annual salary used	\$18,730	\$76,848	\$70,140	\$82,778	\$92,829	\$93,780	\$98,280	\$91,097
Average Monthly Benefit	\$390	\$2,158	\$2,728	\$3,949	\$5,497	\$5,861	\$6,142	\$5,257
2012	0	9	22	123	217	88	80	539
Average annual salary used	\$0	\$72,245	\$65,305	\$85,175	\$92,825	\$94,854	\$98,415	\$90,773
Average Monthly Benefit	\$0	\$2,066	\$2,511	\$4,002	\$5,408	\$5,928	\$6,151	\$5,108
2013	0	6	20	118	161	62	34	401
Average annual salary used	\$0	\$62,730	\$75,088	\$86,979	\$94,193	\$99,759	\$102,980	\$92,252
Average Monthly Benefit	\$0	\$1,809	\$2,857	\$4,164	\$5,427	\$6,235	\$6,436	\$5,084
2014	0	4	18	122	180	44	24	392
Average annual salary used	\$0	\$64,795	\$72,985	\$87,586	\$95,372	\$94,991	\$104,035	\$92,097
Average Monthly Benefit	\$0	\$1,907	\$2,815	\$4,230	\$5,746	\$6,052	\$6,634	\$5,189
2015	0	7	14	105	184	42	11	363
Average annual salary used	\$0	\$34,263	\$85,670	\$90,037	\$100,124	\$104,876	\$102,529	\$96,001
Average Monthly Benefit	\$0	\$951	\$3,334	\$4,271	\$6,005	\$6,555	\$6,408	\$5,379
2016	1	5	14	124	257	80	12	493
Average annual salary used	\$50,400	\$23,820	\$78,131	\$91,293	\$101,855	\$108,887	\$109,058	\$98,945
Average Monthly Benefit	\$1,050	\$622	\$2,966	\$4,292	\$6,123	\$6,805	\$6,816	\$5,634

¹Excludes data correction for one retiree previously valued as deceased.

EXHIBIT S
POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
HISTORY OF RETIREES AND BENEFICIARIES
ADDED TO AND REMOVED FROM BENEFIT PAYROLL

Yr.	Added to Payroll		Removed from Payroll		Payroll End of Year		Average Annual Benefits	Increase to Avg. Benefits
	No.	Annual Benefits.	No.	Annual Benefits	No.	Annual Benefits		
Employee Annuitants (Male and Female)								
2010	551	\$ 44,873,260	283	\$ 12,055,142	8,495	\$ 450,742,884	\$ 53,060	4.5%
2011	500	42,603,517	232	10,471,101	8,763	482,875,300	55,104	3.9%
2012	539	43,830,960	267	12,652,422	9,035	514,053,838	56,896	3.3%
2013	401	36,004,890	242	11,690,500	9,194	538,368,228	58,556	2.9%
2014	392	34,915,092	275	13,594,175	9,311	559,689,145	60,111	2.7%
2015	363	34,830,781	289	15,450,195	9,385	579,069,731	61,702	2.6%
2016	494	44,891,597	276	15,314,830	9,603	608,646,498	63,381	2.7%
Widow/Widower Annuitants (Not Including Compensation) ¹								
2010	145	\$ 2,838,113	177	\$ 2,598,598	3,079	\$ 53,621,501	\$ 17,415	1.5%
2011	144	3,709,829	132	2,007,664	3,091	55,323,666	17,898	2.8%
2012	174	4,436,964	143	2,110,153	3,122	57,650,477	18,466	3.2%
2013	157	3,969,877	149	2,259,835	3,130	59,360,519	18,965	2.7%
2014	128	3,403,918	149	2,515,975	3,109	60,248,462	19,379	2.2%
2015	147	4,022,206	178	2,831,532	3,078	61,439,136	19,961	3.0%
2016	140	4,231,504	116	1,939,517	3,102	63,731,123	20,545	2.9%

¹ Not including Compensation Annuitants.

APPENDIX 4

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

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2016 (CONT'D)

Rate of Disability: Rates at which members are assumed to become disabled under the provisions of the Fund. Sample rates assumed are as follows:

<u>ATTAINED AGE</u>	<u>RATE</u>
22	.0003
27	.0007
32	.0007
37	.0020
42	.0030
47	.0040
52	.0050
57	.0060
62	.0060

The assumed distribution of disability types is assumed to be as follows:

Duty Disability	55%
Occupational Disease Disability	10%
Ordinary Disability	35%

Rate of Retirement: Rates at which members are assumed to retire under the provisions of the Fund. The rates assumed are as follows:
 For members hired before January 1, 2011:

<u>ATTAINED AGE</u>	<u>RATE¹</u>
50	.05
51	.05
52	.05
53	.05
54	.05
55	.19
56	.19
57	.19
58	.25
59	.25
60	.25
61	.30
62	.30
63	1.00

¹ Only for members eligible for a formula annuity.

POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2016 (CONT’D)

For members hired on or after January 1, 2011:

<u>ATTAINED AGE</u>	<u>RATE</u> ¹
50	.02
51	.02
52	.02
53	.02
54	.03
55	.21
56	.21
57	.21
58	.27
59	.27
60	.25
61	.30
62	.30
63	1.00

¹ Only for members eligible for a formula annuity.

Turnover Rates: The following sample rates exemplify the table:

<u>YEARS OF SERVICE</u>	<u>RATE</u>
0	0.030
1	0.028
2	0.020
3	0.015
4-5	0.010
6-10	0.009
11	0.008
12	0.007
13-24	0.006

B. Economic Assumptions

Investment Return Rate: 7.25% per annum effective as of December 31, 2016.

General Inflation: The 7.25% Investment Return Rate assumption is comprised of a 2.75% inflation assumption and a 4.50% real rate of return assumption for pension.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2016 (CONT'D)

Future Salary Increases: Assumed rates of individual salary increase at 3.75% per year, plus an additional percentage based on the following service scale:

<u>COMPLETED YEARS OF SERVICE *</u>	<u>SCALE</u>
1	0.3625
2	0.0325
3	0.0325
4	0.0325
5	0.0225
6-9	0.0000
10	0.0225
11-14	0.0000
15	0.0225
16-19	0.0000
20	0.0225
21-24	0.0000
25	0.0225
26-29	0.0000
30	0.0225
Over 30	0.0000

* Includes increases at 12 and 18 months of service.

Asset Value: For Book-value of Assets, bonds are at amortized value and stocks are at cost.

For statutory funding, the actuarial value of assets is smoothed by recognizing each year's difference between actual and expected investment return at the rate of 20% per year over a five-year period.

The actuarial value of assets was marked to the market value as of January 1, 2012, and is smoothed by using a five-year phase-in of each year's unexpected investment gains and losses.

C. Other Assumptions

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

POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2016 (CONT’D)

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, 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 Plan 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 were eligible for Medicare and all annuitants less than age 65 were not eligible for Medicare. Future widows of retirees were assumed to be eligible for Medicare, as well as widow annuitants who were currently receiving a health insurance supplement.

D. Projection Assumptions The projections under the provisions of P.A. 99-0506 and P.A. 99-0905 were based on the following assumptions and methods:

Active Population: Active members who terminate, retire, become disabled or die during the year are replaced by new entrants such that the number of active members remains level during the projection period based on the most recent actuarial valuation. The number of active members as of the valuation at December 31, 2016 is 12,177.

New Entrant Profile: The entry age of future new entrants, which is summarized below, is based on the profile of current active members hired over the last five years with one or more years of service as of December 31, 2016. These members were hired from January 1, 2012, through December 31, 2015.

Entry Age	Number
20 to 25	196
25 to 30	852
30 to 35	443
35 to 40	188
40 o 45	3

Approximately 80% of the new entrants are assumed to be male.

New Entrant Pay: Based on the most recent employment contract, new entrants were assumed to earn \$48,078 for the plan year ending December 31, 2016. This amount does not include duty availability pay. The new entrant

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2016 (CONT'D)

pay for members hired after 2016 is assumed to increase by the wage inflation assumption of 3.75% plus duty availability pay after 3 years, increased by CPI compounded.

New Entrant Pay Increases: Pay for a specific new entrant is assumed to increase in the future by the wage inflation and the service based increases disclosed in this actuarial valuation.

The projections assume a pay cap of \$112,408.42 for plan year 2017, increasing by 1.375% per year after plan year 2017. The annual increase of 1.375% per year is based on 50% of the CPI-U increase which is assumed to be 2.75% per year.

Administrative Expenses: Statutory funding projections include an explicit administrative expense assumption of \$4,750,000 for plan year end December 31, 2016, increased by 2.75% per year.

APPENDIX 5

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

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016

PARTICIPANTS

An employee in the police department of the City of Chicago appointed and sworn or designated by law as a peace officer with the title of policeman, policewoman, chief surgeon, police surgeon, police dog catcher, police kennelman, police matron and members of the police force of the police department.

SERVICE

In computing service rendered by a police officer, the following periods shall be counted, in addition to all periods during which he performed the duties of his position, as periods of service for annuity purposes only: All periods of (a) vacation; (b) leave of absence with pay; (c) military service; (d) disability for which the police officer receives disability benefit. The calculation of service is based on a day-to-day basis for most purposes. For the purpose of calculating benefits under the Dominant Formula, one year of Service is credited for a year in any portion of which a police officer is compensated.

RETIREMENT

Eligibility

Attainment of age 50 with at least 10 years of service.

For participants who first became members on or after January 1, 2011, attainment of age 55 with at least 10 years of service. Participants may retire at attainment of age 50 with 10 years of service with a reduced benefit.

Mandatory

Effective in plan year 2003, retirement is mandatory for a participant who has attained age 63.

Accumulation Annuity

At age 50 or more, with 10 or more years of service, the employee is entitled to an annuity based on the sums accumulated for age and service annuity plus 1/10 of the sum accumulated from the contributions by the City for the age and service annuity for each completed year of service after the first 10 years. At age 50 or more with 20 or more years, the employee is entitled to an annuity based on all sums accumulated.

***Formula Minimum
Annuity***

While there are several alternative formulas available with 20 or more years of service, the Dominant Formula is 50% of highest average salary (including duty availability pay) in 48 consecutive months within the last 10 years of service plus 2.5% for each year or fraction of service over 20 years, limited to 75% of average salary.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016 (CONT'D)

***Mandatory Retirement
Minimum Annuity***

A police officer who is required to withdraw from service due to attainment of mandatory retirement age who has less than 20 years of service credit may elect to receive an annuity equal to 30% of average salary for the first 10 years of service, plus 2% of average salary for each completed year of service in excess of 10, to a maximum of 48% of average salary. This benefit qualifies for post retirement increases.

Post-Retirement Increase

A retiree born before January 1, 1966, with at least 20 years of service or receiving a mandatory retirement minimum annuity, receives an increase of 3% of the original annuity, starting on the first of the month following the first anniversary of his retirement or the first of the month following attainment of age 55, whichever is later, and shall not be subject to a 30% maximum increase. For retirees born on and after January 1, 1966, automatic increases are 1.5% of the original annuity, commencing at age 60, or the first anniversary of retirement, if later, to a maximum of 30%.

For participants who first became members on or after January 1, 2011, increases are equal to the lesser of 3.00% and 50% of CPI-U of the original benefit, commencing at age 60.

Minimum Annuity

The benefit of any retiree who retired from the service before January 1, 1986, at age 50 or over with at least 20 years of service, or due to termination of disability is not less than \$1,050 per month, or 125% of the Federal Poverty Level.

For participants who first became members on or after January 1, 2011, the member is entitled to an annuity based on an accrual rate of 2.5% of the final average salary for each fraction of service. Maximum is 75% of the final average salary. 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% 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.

For participants who first became members on or after January 1, 2011, who retire after age 50 but before age 55 is attained, the member is entitled to an annuity based on an accrual rate of 2.5% of the final average salary for each fraction of service, reduced by one half of one percent per month for retirement prior to age 55, subject to a maximum benefit of 75%.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016 (CONT'D)

Reversionary Annuity A member, prior to retirement, may elect to reduce his own annuity, and provide a reversionary annuity, to begin upon the officer's death, for the officer's spouse.

SURVIVOR INCOME BENEFITS PAYABLE ON DEATH

Death in Service (Non-Duty): Generally, a money-purchase benefit is provided, based on total salary deductions and City contributions. However, if a policeman dies in service after December 31, 1985, with at least 1.5 years of service, the widow's annuity is the greater of (a) 30% of the annual maximum salary attached to the classified civil service position of a first class patrolman at the time of his death (without dollar limit) or (b) 50% of the benefit accrued by the policeman at date of death.

The lifetime benefit is payable until death.

Death in Service (Duty Related)

Compensation Annuity 75% of the member's salary attached to the civil service position that would ordinarily have been paid to such member as though in active discharge of his duties at the time of death payable until the date the policeman would have attained age 63.

Supplemental Annuity Payable for life and is equal to the difference between the money purchase annuity for the spouse and an amount equal to 75% of the annual salary (including all salary increases and longevity raises) the police officer would have been receiving when he attained age 63 if the police officer had continued in service at the same rank last held in the department.

Death after Retirement If a police officer retires on or after January 1, 1986, and subsequently dies, the widow's annuity is 40% before 1988 and 50% on and after January 1, 1988 of the retired policeman's annuity at the time of death (without dollar limit).

Maximum Annuity \$500 a month (after discount for age difference) under both the accumulation method and the old formula method. There is no dollar limit on the 30%, 40% or 50% benefit.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016 (CONT'D)

Minimum Annuity The minimum widow's annuity shall be no less than 125% of the Federal Poverty Level.

For participants who first became members on or after January 1, 2011, widow benefits are equal to 66-2/3% of the officer's earned annuity at the date of death. Automatic increases to the annuity are equal to the lesser of 3.00% and 50% of CPI-U, commencing when the survivor reaches age 60, and applied to the original granted retirement annuity.

CHILDREN'S ANNUITIES

Eligibility Payable at death of the policeman to all unmarried children less than 18 years of age.

Benefit 10% of the annual maximum salary of a first class patrolman during widow (widower) life, 15% otherwise.

Payable Until Age 18. If the child is disabled, benefit is payable for life or as long as such disablement exists.

Family Maximum 60% (non-duty death) or 100% (duty death) of the salary that would ordinarily been paid to the policeman, if he had been in the active discharge of his duties.

Parent's Annuities
Eligibility

Payable to a dependent parent at the death of a policeman who is in either active service, or receiving a disability benefit, or on leave of absence, or in receipt of an annuity granted after 20 years of service, or waiting to start receiving an annuity granted for 20 years of service. The benefit is only payable if there are no surviving spouses or children eligible for benefits.

Benefit 18% of the current salary attached to the rank at separation from service.

Payable until Death of the dependent parent.

DUTY DISABILITY BENEFIT

Eligibility Disabling condition incurred in the performance of duty.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016 (CONT'D)

Benefit 75% of salary at the time the disability is allowed plus \$100.00 per month for each unmarried child less than age 18, (total amount of child's benefits shall not exceed 25% of salary). Beginning January 1, 2000, after seven years of payment, the benefit shall not be less than 60% of the current salary attached to the rank held by the policemen at the time of disability. Payable to employee's age 63 or by operation of law, whichever is later. Salary deductions are contributed by the City.

OCCUPATIONAL DISEASE DISABILITY BENEFIT

Eligibility Heart attack or any disability heart disease after 10 years of service.

Benefit 65% of salary attached to the rank held by the police officer at the time of his or her removal from the police department payroll with a minimum after 10 years of 50% of the current salary attached to the rank. Each natural or legally adopted unmarried child of the officer under the age of 18 is entitled to a benefit of \$100 per month. This benefit is not terminated at age 18 if the child is then dependent by reason of physical or mental disability. Salary deductions are contributed by the City.

ORDINARY DISABILITY BENEFIT

Eligibility Disabling condition other than duty or occupational related.

Benefit 50% of salary at the time of injury, payable for a period not more than 25% of service (excluding any previous disability time) rendered prior to injury, nor more than five years. Disability shall cease at age 63. Salary deductions are contributed by the City.

DEATH BENEFIT

Eligibility Payable upon the death of a police officer whose death occurs while in active service; on authorized leave of absence; within 60 days of receipt of salary; while receiving duty or ordinary disability benefit; occurring within 60 days of termination of such benefit; or occurring on retirement while in receipt of annuity and separation was effective after 20 years of service. This benefit is payable to beneficiaries or, if none, to estate.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016 (CONT'D)

Benefit

Death in Service:

AGE AT DEATH	BENEFIT
49 and under	\$12,000
50-62	\$12,000 less \$400 for each year by which age at death exceeds 49

Death after Retirement:

AGE AT DEATH	BENEFIT
50 and over	\$6,000

If death results from injury incurred in performance of duty before retirement on annuity, the benefit payable is \$12,000 regardless of the attained age.

**GROUP HEALTH
HOSPITAL AND
SURGICAL
INSURANCE
PROGRAM**

The pension fund shall provide payments in the amount of \$95 per month for non-Medicare eligible city annuitants and \$65 per month for Medicare eligible city annuitants through December 31, 2016.

REFUNDS

Policemen

Without regard to service and under age 50, or with less than 10 years of service and under age 57 at withdrawal: a refund of all salary deductions together with 1.5% simple interest until the date of withdrawal.

For Spouse's Annuity

Upon retirement an unmarried policeman will receive a refund of contributions for spouse's annuity, accumulated at 3% compounded annually.

Of Remaining Amounts

If at death of a retired policeman the total member contributions paid while active exceed the total retirement benefits paid to date of death, the difference is payable.

CONTRIBUTIONS

Salary Deductions

Employee	7 %
Spouse	1½%
Annuity Increase	½%
	9 %

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016 (CONT'D)

<i>City Contributions</i> ¹	Employee	9-5/7%	
	Spouse	2%	
	Annuity Increase	1/2%	Unallocated
		12-3/14%	

¹ Credited to Participant's Accumulation Annuity and Widow's Annuity Account

In addition to the above contributions, a contribution is made to support the Death Benefit. Policemen contribute \$2.50 per month. City contributes a total of \$224,000 for all policemen.

Prior to 2015, the total City contribution is generated by a tax equal to double the contributions by the policemen to the Fund two years prior to the year of the tax levy.

Under P.A. 99-0506, City contributions are equal to \$420 million in payment year 2016, \$464 million in payment year 2017, \$500 million in payment year 2018, \$557 million in payment year 2019 and \$579 million in payment year 2020. For payment years after 2020, the City is required to make level percent of pay contributions for plan years 2020 through 2055 that along with member contributions and investment earnings are expected to generate a projected funded ratio of 90% by plan year end 2055.

**"PICK UP" OF
EMPLOYEE SALARY
DEDUCTIONS**

Beginning January 1, 1982, the employee contributions were "picked up" by the employer. The W-2 salary is therefore reduced by the amount of contribution. For pension purposes the salary remains unchanged. Income tax will be paid when a refund or annuity is received. For the purpose of benefits, refunds or contributions, these contributions will be treated as employee contributions.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2016 (CONT'D)

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

Year Ending	CPI-U	½ CPI-U	COLA	Maximum Annual Pensionable Earnings
2011			3.00%	\$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

APPENDIX 6

LEGISLATIVE CHANGES 1979 THROUGH 2016

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO LEGISLATIVE CHANGES 1979 THROUGH 2016

1979 Session

HB 2128

Refund repayment provided at least 3 years of service after reentry, surviving spouse may pay in the case of death of the employee.

HB 2012

Under IRS Code Section 414(h), employer may pick up the employee contributions for all compensation earned after December 31, 1981, by a reduction in the cash salary or an offset to a future salary increase or by a combination of both.

HB 2160

Duty disability benefit based on the salary when the benefit is payable in the case of a disabled policeman who returns to active service for a period of at least 2 years.

1980 Session

HB 3635

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

1981 Session

SB 21

Actuarial reporting standards.

SB 851

Authorizes investments in conventional mortgage pass-through securities.

SB 879

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

SB 1126

Duty disability benefits based on salary at time disability is allowed; salary for policeman on leave of absence; definition of heart attack.

HB 291

Minimum survivor's annuity from \$200 to \$250.

Spring 1982 Session

SB 740

Minimum employee annuity from \$350 to \$400 effective July 1, 1982, for policemen who retired before September 1, 1976.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO LEGISLATIVE CHANGES 1979 THROUGH 2016 (CONT'D)

SB 1127

3% post-retirement increase for employees born before January 1, 1930, without 30% maximum, effective January 1, 1983.

Group health hospital and surgical insurance premium \$55 for annuitant not qualified to receive Medicare; \$21 if annuitant is qualified, effective January 1, 1983.

SB 1147

Actuarial reporting to Insurance Department and Pension Laws Commission. Actuarial statements prepared by a qualified actuary for plan years ending after December 31, 1984, including actuarial present value of credited projected benefits.

SB 1579

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

Spring 1983 Session

SB 22

Delegation of investment authority restrictions.

HB 514

10% prudent person investment category.

HB 1412

Heart attack; need not result from an injury.

HB 1413

Wrongful death of a police officer bars benefit.

HB 1414

50/20 50%, plus 2% minimum formula; if retire in 1984 qualify with 52 and 22; in 1985, 51 and 21; in 1986 and after, 50 and 20.

HB 2003

Reversionary annuity. Securities lending.

City Ordinance

Changes compulsory retirement from 63 to 70.

1984 Court Decision

Kaner case awarding widow compensation annuity 75% of the salary attached to the civil service position that would have ordinarily have been paid to him as though he were in active discharge of his duties for widows of policemen who died a duty death after January 1, 1970.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO LEGISLATIVE CHANGES 1979 THROUGH 2016 (CONT'D)

1984 Session

Illinois Public Employees' Pension Laws Commission abolished.

1985 Session

HB 1529

30% (of maximum first class patrolman salary) widow's benefit for death in service, with 1.5 years of service, eliminated the excess spouse refund.

40% (of policeman annuity at the time of death) widow's benefit for death after retirement (for retirements after January 1, 1986, only).

Death benefit increase: retirees \$2,250 to \$6,000, actives \$12,000 before 50 graded down to \$6,000.

Minimum widow pension from \$250 to \$325 under certain conditions.

3% increase for the closed group receiving 2%.

Widow compensation annuity for duty deaths after September 17, 1969.

1986 Session

HB 2630

Expands the widow compensation annuity category to include duty deaths after January 1, 1940.

1987 Session

HB 2715

Beginning January 1, 1988, 50% of employees' annuity at death for widows (present and future) whose spouse retired on or after January 1, 1986.

3% annual increase for life to all employee annuitants (present and future) born before 1940 instead of 1930.

1988 Session

No legislative changes.

1989 Session

SB 95

Signed August 23, 1989. Changed the amount of fund paid health insurance "supplement" from January 1, 1988, until December 31, 1992, to \$65 per month for each annuitant not qualified to receive Medicare benefits (and \$35 if qualified) and from January 1, 1995, until December 31, 1997, the amounts are \$75 and \$45, respectively. Widows will now be supplemented also. The City will be required to pay 50% of the aggregated cost of health care claims for the retired group under all health

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO LEGISLATIVE CHANGES 1979 THROUGH 2016 (CONT'D)

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.

\$150 to \$200 minimum widow's benefit.

Beginning January 1, 1990, minimum widow's annuity shall be \$400.

Transfer of credits to IMRF for a County Sheriff upon application and payment by the Fund.

HB 332

Signed August 23, 1989, age discrimination changes. Removed the age 63 limitations in determining benefits for money purchase employee and widow annuities, disability benefits and refunds. The change requires contributions (deductions from salary) and concurrent City contributions from January 1, 1988, until withdrawal but not for the period between the attainment of age 63 and January 1, 1988.

Allow transfer credits and creditable service under any other pension fund if police officer has 10 years of service and payment before January 1, 1990.

Provides for a transfer of credits to the Municipal Fund or State Fund of any police officer with at least 10 years of service.

1990 Session

SB 1951

Allows policemen to withdraw at age under 50 with at least 20 years of service to receive benefit based on minimum formula commencing at age 50.

Widows of active policemen receive benefit not less than 50% of annuity payable to the policeman had he retired on the date of death.

Compensation and supplemental widows' annuities do not cease upon remarriage.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO LEGISLATIVE CHANGES 1979 THROUGH 2016 (CONT'D)

1991 Session

HB 969

Increases the minimum monthly benefit to retirees who had at least 20 years of service prior to January 1, 1992, to \$650.

Increases the minimum monthly widow's annuity payable upon death after January 1, 1992 of:

- An active policeman with at least 10 years of service, or
- A policeman who had at least 20 years of service at withdrawal from the Fund to \$500.

1992 Session

No legislative changes.

1993 Session

SB 1650

Increases the minimum monthly benefit to retirees who had at least 20 years of service prior to January 1, 1995, to \$750, and after January 1, 1995, to \$850.

Increases the minimum monthly widow's annuity payable upon death after January 1, 1995 of:

- An active policeman with at least 10 years of service; or
- A policeman who had at least 20 years of service at withdrawal from the Fund to \$600, and after January 1, 1995, to \$700.

1994 Session

No legislative changes.

1995 Session

SB 99

Beginning January 1, 1996, supplemental annuity changed to the difference between the annuity for the widow and an amount equal to 50% of the annual salary (including all salary increases and longevity raises) the policeman would have been receiving when he attained age 63 if the policeman had continued in service at the same rank (whether career service or exempt) that he last held in the police department.

Beginning January 1, 1996, duty disability minimum benefit is stated such that after 10 years of payment the benefit shall not be less than 50% of the current salary attached to the rank held by the policeman at the time of removal from police department payroll.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO LEGISLATIVE CHANGES 1979 THROUGH 2016 (CONT'D)

An occupational disease disability benefit has been added for any policeman with at least 10 years of service who suffers a heart attack or any other disability heart disease. The benefit shall be 65% of salary attached to the rank held by the officer at the time of his or her removal from the police department payroll, with a minimum after 10 years of 50% of the current salary attached to the rank. Each natural or legally adopted unmarried child of the officer under age 18 is entitled to a benefit of \$50 per month. This benefit is not terminated at age 18 if child is then dependent by reason of a physical or mental disability.

Beginning January 1, 1996, the age of the commencement of automatic increases in annuities has been lowered to age 55 for policemen born on or after January 1, 1940, but before January 1, 1945. Any policemen born before January 1, 1945, who qualifies for a minimum annuity and retires after September 1, 1967, not receiving the initial increases before January 1, 1996, will receive the initial increase on (1) January 1, 1996, (2) the first anniversary of the date of retirement, or (3) attainment of age 55, whichever occurs last.

Beginning January 1, 1996, the minimum monthly widow's annuity payable upon death increases to \$700.00 for all widow's not previously eligible for the minimum.

1996 Session

SB 1456

Effective August 9, 1996, a parent's annuity equal to 18% of the current salary attached to the rank at separation from service will be provided to each of the natural parents of a police officer who dies under certain conditions. Those conditions include: death in active service, while receiving a disability benefit, during leave of absences or after 20 years of service and eligible or receiving an annuity. The benefit is payable only if there are no surviving spouse or children eligible for benefits.

1997 Session

P.A. 90-551

Effective December 12, 1997, the law was amended to include on prospective basis duty availability in the definition of salary. The law also allows policemen who retired or were at least age 50 and had at least 20 years of service between July 1, 1994, and December 31, 1997, to count duty availability pay in the calculation of final average salary. In order for this to happen, the policemen must elect to do so and must contribute the employee contributions (9%) without interest from the duty availability pay that is to be considered in the final average salary calculation.

Effective June 27, 1997, P.A. 90-0031 was enacted. This law extends the hospitalization plan through June 30, 2002, for annuitants and their eligible dependents.

Effective July 1, 1997, P.A. 89-643 was amended. This provision extended the parent's annuity eligibility to apply to dependent parents of police officers who died prior to August 9, 1996.

1998 Session

P.A. 90-0766

Effective August 16, 1998, this law increased the minimum monthly widow's annuity payable from \$700.00 to \$800.00 effective January 1, 2016. This law also increased the earnings limit maximum for

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO LEGISLATIVE CHANGES 1979 THROUGH 2016 (CONT'D)

those receiving disability benefits such that the sum of the disability benefit and outside compensation may be up to 150% of the rate of salary which the participant would be receiving if working in his regularly appointed civil service position as a policeman.

2000 Session

In 2000 the City of Chicago has enacted mandatory retirement for Policemen upon attainment of age 63.

2001 Session

P.A. 92-0052

Effective July 12, 2001.

Beginning on January 1, 2000, the minimum duty disability after 7 years of payment shall be 60% of the current salary attached to the rank held by the policeman at the time of removal from police department payroll. If the Board finds that the disability permanently renders the policeman totally disabled for any service of a remunerative character, the minimum disability benefit shall be 75% of the current salary attached to the rank held by the policeman at the time of removal from payroll.

The child's benefit for both duty disability and occupational disease disability was increased to \$100 per month.

The law removed the earnings limit of 150% of regular salary to be eligible to receive disability benefits.

With effect from January 1, 2000, the age of the commencement of the automatic 3% increases in annuities has been lowered to age 55 for policemen born on or after January 1, 1945, but before January 1, 1950. Any policeman born before January 1, 1950, who qualifies for a minimum annuity and retires after September 1, 1967, not receiving the initial increase before January 1, 2000, will receive the initial increase at the latest of (1) January 1, 2000, (2) the first anniversary of the date of retirement, or (3) attainment of age 55.

2002 Session

HB 5168

- Effective June 28, 2002.
- A police officer who is required to withdraw from service due to attainment of mandatory retirement age and who has less than 20 years of service credit, may elect to receive an annuity equal to 30% of average salary for the first 10 years of service, plus 2% of average salary for each completed year of service in excess of 10, to a maximum of 48% of average salary. This benefit qualifies for post-retirement increases.
- The supplemental annuity payable to the widow of an officer on account of a duty-related death is increased to the difference between the money purchase annuity for the spouse and 75% (previously 50%) of the annual salary the police officer would have been receiving when he

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO LEGISLATIVE CHANGES 1979 THROUGH 2016 (CONT'D)

attained age 63 if the police officer had continued in service at the same rank last held in the department.

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

2003 Session

SB 1701

- Effective July 1, 2003.
- 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

P.A. 93-0654

- Effective January 16, 2004.
- The minimum annuity formula accrual rate for service after 20 years was increased from 2.0% to 2.5% with total benefits limited to 75% of final average pay.
- The minimum benefit for age-service retirements was increased to \$950 per month during 2004 and \$1,050 per month thereafter.
- The minimum widow annuity was increased to \$900 per month during 2004 and \$1,000 per month thereafter.

2005 Session

P.A. 94-0624

- Effective August 18, 2005.
- Beginning January 1, 2000, removes the limitation for maintaining benefits for non-civil service positions when assigned within three years of retirement for non-civil service positions with the title of Captain.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO LEGISLATIVE CHANGES 1979 THROUGH 2016 (CONT'D)

HB 1009

- Effective January 1, 2005, any policeman born after January 1, 1950, but before January 1, 1955, shall receive a benefit increase of 3% compounded annually. Any policeman born before January 1, 1955, who qualifies for a minimum annuity and retires after September 1, 1967, not receiving the initial increase before January 1, 2005, will receive the initial increase at the latest of (1) January 1, 2005, (2) the first anniversary of the date of retirement, or (3) attainment of age 55.

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 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 legislative changes.

2007 Session

P.A. 95-0279

- Effective January 1, 2008.
- Removes restriction that a child be born or legally adopted before withdrawal from service for a child's annuity. Removes restriction requiring that adoption proceedings must have been initiated 6 months prior to the policeman's death.

P.A. 95-0504

- Effective August 28, 2007.
- Beginning on the effective date, a widow's annuity shall no longer be subject to termination or suspension due to remarriage. Any widow's annuities previously terminated or suspended due to remarriage shall be resumed upon application, but the resumption shall not be retroactive.
- At the discretion of the Board, a widow's annuity may be granted to a widow who was denied a benefit for having been married less than one year at the time of the member's death.
- Removes age limitation on child's annuity for children who are so physically or mentally handicapped as to be unable to support themselves.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO LEGISLATIVE CHANGES 1979 THROUGH 2016 (CONT'D)

2008 Session

No legislative changes.

2009 Session

P.A. 95-1036

- Effective February 17, 2009.
- For purposes of tax levy, contributions by the policeman to the Fund shall not include payments made by a policeman to establish credit under Section 5-214.2.
- An officer with prior service credit under article 3,7,9,10,13,14,15 Funds may transfer up to 10 years of service in 6 month increments provided the transfer of service results in no increase to the unfunded actuarial accrued liability of the Fund.

P.A. 96-0006

- Effective April 3, 2009.
- The Illinois Governmental Ethics Act.

P.A. 96-285

- Effective August 11, 2009.
- Extends P.A. 95-1036 service purchase eligibility to include members of article 8 Funds and law enforcement officers with any agency of the United States Government.

P.A. 96-727

- Effective August 25, 2009.
- Allows an officer with at least 10 years of PABF service to transfer up to 48 months of eligible service as a County Correctional Officer. The officer is required to pay to the Fund the difference between contributions transferred by the County on behalf of the officer and the amount of employee and employer contributions that would have been contributed had the officer been a member of this Fund plus interest at the actuarially assumed rate.

P.A. 96-745

- Effective August 25, 2009.
- Transfer of service to Article 14 (State Employees' Retirement System) now includes investigators for the Office of the Attorney General and investigators for The Department of Revenue. Interest on the repayment of refund is changed from 6% to the actuarially assumed rate.

P.A. 96-753

- Effective August 25, 2009.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO LEGISLATIVE CHANGES 1979 THROUGH 2016 (CONT'D)

- Encourages the public pension funds, and any State entity investing on behalf of the public pension funds, to promote the economy of Illinois through the use of economic opportunity investments.
- Instructs the fund's 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 total proceeds in every transaction are the most favorable under the circumstances.

2010 Session

P.A. 96-1260

- Effective July 23, 2010.
- A policeman may purchase benefit service for all periods of service in the military before beginning service as an active policeman. The total amount of such service shall not exceed 2 years.

P.A. 96-1495 (HB 3538)

- Effective January 1, 2011.
- Changes the financing for the Fund. Assets are marked to market at March 30, 2011. For fiscal years ending after March 30, 2011, the actuarial value of assets is based on a five-year smoothing of investment gains and losses incurred in fiscal years ending after March 30, 2011. The City levies a new tax starting in FY2015. Each year, employer contributions combined with member contributions and other fund revenue must be equal to the amount that is sufficient to produce 90% funding by the end of fiscal year 2040. The projections are based on an open group projection and level percent of pay financing and actuarial liabilities are based on the Projected Unit Credit cost method. If the City does not make the statutorily required contributions, then the State, starting in FY 2016, could withhold State grants to the City, and directly deposit the withheld funds into the PABF. The withheld funds are limited to 33% of total State grants to the City in FY 2016, 67% in FY 2017, and 100% on and after FY 2018.
- Changes benefits for members hired on or after January 1, 2011. For these employees the minimum retirement eligibility is at age 55 with 10 years of service with the annuity based on an accrual rate of 2.5%, subject to a maximum of 75%. Employees may retire at age 50 with 10 years of service with the annuity based on accrual rate of 2.5%, reduced by one half of one percent per month for retirement prior to age 55, subject to a maximum of 75%. The final average salary is based on 96 consecutive months within the last 120 months. Annual salary is capped at \$106,800, indexed annually at the lesser of 3.0% and 50% of CPI-U. COLA is equal to the lesser of 3.0% and 50% of CPI-U, commencing at age 60, with no 30% cap, applied to the original granted retirement annuity. Widow benefits are 66-2/3% of the policemen's earned annuity at the date of death. Widow COLA is equal to the lesser of 3.0% and 50% of CPI-U, commencing when the survivor reached age 60, and applied to the original granted retirement annuity.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO LEGISLATIVE CHANGES 1979 THROUGH 2016 (CONT'D)

2011 Session

P.A. 97-326 (HB 1872)

- Effective August 12, 2011.

- A policeman may transfer up to 10 years of credible service to a fund covered under Article 3. PABF will pay the Article 3 fund an amount consisting of (1) the amounts credited to the applicant through employee contributions, plus accumulated interest plus (2) an amount representing municipality contributions equal to the amount determined in (1) plus (3) any interest paid to PABF in order to reinstate credits and credible service.

- A policeman may reinstate credits and credible service that was terminated upon receipt of a refund, by paying the Fund the amount of the refund plus interest thereon at the actuarially assumed rate, compounded annually, from the date of the refund to the date of the payment.

P.A. 97-344 (HB 3376)

- Effective August 12, 2011.

- Makes changes concerning annual increases to the monthly annuities of persons who first become a policeman on or after January 1, 2011 and deletes repetitive language concerning annual increases in survivor's annuities for Tier 2.

P.A. 97-530 (SB 1672)

- Effective 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.

P.A. 97-609 (SB 1831)

- Effective August 26, 2011.

- Applies to those members hired on or after January 1, 2012.
 - Provides that if a new hire is receiving a retirement annuity or pension and accepts a contractual position to provide services to a governmental entity from which he or she has retired, then that person's annuity or pension will be suspended during that contractual service.

 - Makes it a Class A misdemeanor for a pensioner who is seeking contractual employment to fail to notify certain persons about his or her retirement status before accepting an employment contract.

P.A. 97-504 (HB 1670)

- Approved August 23, 2011.

- Amends the Open Meetings Act.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO LEGISLATIVE CHANGES 1979 THROUGH 2016 (CONT'D)

- 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

P.A. 97-0651

- 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.

P.A. 97-813

- Effective July 13, 2012.
- Clarifies provisions of widow's annuity.

2013 Session

P.A. 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."

P.A. 98-0433 (HB 2620)

- Approved and effective August 16, 2013.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO LEGISLATIVE CHANGES 1979 THROUGH 2016 (CONT'D)

- 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

No legislative changes.

2015 Session

No legislative changes.

2016 Session

P.A. 99-0506

- Approved and effective May 30, 2016.
- Changes the funding policy.
 - For payment years 2016 through 2020, specifies the amount for the City of Chicago's required annual contribution to the Fund as follows: \$420 million in payment year 2016, \$464 million in payment year 2017, \$500 million in payment year 2018, \$557 million in payment year 2019 and \$579 million in payment year 2020.
 - Beginning in payment year 2021, the City's total required contribution to the Fund shall be an amount that is equal to the normal cost of the fund, plus an amount sufficient to bring the total assets of the fund up to 90% of the total actuarial liabilities of the fund by payment year 2055 (instead of 2040).
- Changes the actuarial cost method to entry age normal.
- Includes provisions for funding from any proceeds received by the city in relation to the operation of a casino within the city.
- Provides a mechanism to enforce funding through a mandamus action.
- Creates a new minimum retirement annuity provision equal to 125% of the federal poverty level for certain persons.

P.A. 99-0905

- Approved and effective November 29, 2016.
- Specifies the manner of calculating the Tier 2 surviving spouse's annuity for Tier 2 policemen who die in service with at least 1 1/2 years of service
- Specifies the manner of computing duty-death benefits for Tier 2 surviving spouses and provides that Tier 2 duty-death benefits are not payable where the death is the result of an intervening cause.
- Includes provisions for a minimum surviving spouse's annuity equal to 125% of the federal poverty level.

**POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
LEGISLATIVE CHANGES 1979 THROUGH 2016 (CONT'D)**

- Increases the Tier 1 automatic annual increase in retirement annuity for persons born after December 31, 1954 but before January 1, 1966.
- Amends the State Mandates Act to require implementation without reimbursement.