

# **Municipal Employees' Annuity and Benefit Fund of Chicago**

**Actuarial Valuation and Review as of  
December 31, 2017**





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May 16, 2018

The Retirement Board of the  
Municipal Employees' Annuity and Benefit Fund of Chicago  
321 North Clark Street, Suite 700  
Chicago, Illinois 60654-4767

Dear Board Members:

We are pleased to submit this annual Actuarial Valuation and Review as of December 31, 2017. It summarizes the actuarial data used in the valuation; establishes the net pension liability under Governmental Accounting Standards Board (GASB) Statement No. 67 as of December 31, 2017, the pension expense for the fiscal year ending December 31, 2017, under GASB Statement No. 68, and the actuarially determined contribution for the year ending December 31, 2018; and analyzes the preceding year's experience.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Municipal Employees' Annuity and Benefit Fund of Chicago (MEABF or Fund or Plan).

#### **Asset and Membership Data**

The census information and financial information on which our calculations were based was prepared by the Fund staff. That assistance is gratefully acknowledged. We have not subjected the census data to any auditing procedures, but have examined the data for reasonableness and consistency with the prior year's data.

#### **Actuarial Assumptions and Methods**

The actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by the Fund's actuary. The assumptions and methods used for the December 31, 2017, actuarial valuation were based on an experience analysis covering the five-year period ending December 31, 2016, and were adopted by the Board, effective December 31, 2017. These actuarial assumptions and methods comply with the parameters set by the Actuarial Standards of Practice and the parameters for disclosure of GASB 67 and 68. Further, in our opinion, the assumptions as approved by the Board appear to be reasonably related to the experience of the Fund. The investment return assumption is based on the Fund being invested according to the target asset allocation in the Investment Policy Statement. **To the extent that the liquidation of assets to pay benefit payments and expenses requires a shift in investment allocation to more liquid, lower return asset classes, a lower discount rate may be required in the future.**

## **Funding Adequacy**

MEABF is funded by employer and member contributions in accordance with the funding policy specified under the Illinois Pension Code (40 ILCS 5/8), which was revised on July 6, 2017 by Public Act 100-0023. For 2018 through 2022, employer contributions are specified amounts: \$266 million in 2018, \$344 million in 2019, \$421 million in 2020, \$499 million in 2021, and \$576 million in 2022. Starting in 2023, employer contributions are calculated as a level percent of payroll sufficient to bring the total assets of the Fund up to 90% of the actuarial accrued liability by the end of 2058. **The fixed-dollar contributions through 2022 leave the Fund vulnerable to adverse experience. Given the low funded ratio, the Fund is still at risk of potential insolvency if an economic recession or investment market downturn were to occur in the near term. We strongly recommend an actuarial funding method that targets 100% funding where payments at least cover interest on the unfunded actuarial liability and a portion of the principal balance. If the Fund becomes insolvent, the employer will be required to make contributions on a “pay as you go” basis, which means the employer would have to pay all benefits as they become due.**

## **Financial Results and Membership Data**

This report includes the following schedules for the Actuarial and Financial sections of the Comprehensive Annual Financial Report:

- Actuarial
  - Active Member Valuation Data
  - Retirees and Beneficiaries Added to and Removed from Rolls
  - Solvency Test
  - Analysis of Financial Experience
- Financial
  - Schedule of Funding Progress
  - Schedule of Employer Contributions

## **Limitation of Actuarial Measurements**

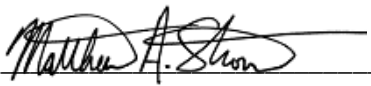
The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic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

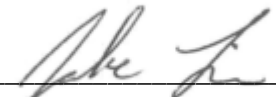
**Qualifications**

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

Sincerely,

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

By:   
Matthew A. Strom, FSA, MAAA, EA  
Vice President and Actuary

  
Jake Libauskas, ASA, MAAA, EA  
Consulting Actuary

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## SECTION 1: Valuation Summary for the Municipal Employees' Annuity and Benefit Fund of Chicago

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### Purpose

This report has been prepared by Segal Consulting to present a valuation of the Municipal Employees' Annuity and Benefit Fund of Chicago (MEABF or Fund or Plan) as of December 31, 2017. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Fund, as outlined in 40 ILCS 5/8 and administered by the Retirement Board;
- The characteristics of covered active members, inactive vested members, and retirees and beneficiaries as of December 31, 2017, provided by MEABF staff;
- The assets of the Plan as of December 31, 2017, provided by MEABF staff;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

### Significant Issues in Valuation Year

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

1. On July 6, 2017, Public Act 100-0023 was signed into law and changed the Plan's funding and benefit provisions as follows:
  - i) In general, members hired on or after, July 6, 2017 are classified as Tier 3 members.
  - ii) All current Tier 2 members were given a one-time option to make an irrevocable election to switch to the Tier 3 benefit structure (elective Tier 3 member).
  - iii) Tier 3 benefit structure is the same as Tier 2 benefit structure, except:
    - a) Eligibility for unreduced minimum formula annuity for Tier 3 is age 65 with 10 years of service, compared to age 67 with 10 years of service for Tier 2.
    - b) Eligibility for reduced minimum formula annuity for Tier 3 is age 60 with 10 years of service, compared to age 62 with 10 years of service for Tier 2.

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- c) Eligibility for annual increase in employee annuity for Tier 3 is the later of age 65 or the first anniversary of the annuity start date, compared to age 67 or the first anniversary of the annuity start date for Tier 2.
  - d) Member contributions for required Tier 3 members are 11.5% of capped salary for 2017. Beginning in 2018, member contribution rate will be the normal cost rate, if less than 11.5%, but not lower than 8.5%. Member contributions for elective Tier 3 members are 10.5% of capped salary for 2018 and 11.5% of capped salary or normal cost rate, if less, for 2019 and each year thereafter. Member contribution rate for Tier 2 is 8.5% of capped salary.
  - iv) For 2018 through 2022, employer contributions are specified amounts: \$266 million in 2018, \$344 million in 2019, \$421 million in 2020, \$499 million in 2021, and \$576 million in 2022. Starting in 2023, employer contributions are calculated as a level percent of payroll sufficient to bring the total assets of the Fund up to 90% of the actuarial accrued liability by the end of 2058.
2. An experience review was performed after the last valuation. As a result of this study, the following assumption changes have been adopted for this valuation:
- i) Inflation assumption was lowered from 3.00% to 2.50%.
  - ii) The Tier 2 and Tier 3 COLA rate and rate of increase of the pensionable salary cap was lowered from 1.50% to 1.25%.
  - iii) Investment return assumption was lowered from 7.50% to 7.00%.
  - iv) Salary increase rates were changed to five-year select and ultimate rates. Ultimate rates were lowered based on merit components, as well as due to lower inflation. Select rates for the next five years (2018 – 2022) are 50 basis points lower than the Fund's recent experience to reflect salary increases in the current CBA, which are generally lower than the ultimate assumption.
  - v) Post-retirement mortality assumption was changed from the RP-2000 Combined Healthy Mortality Table with mortality improvements projected statically to 2010 using Scale AA to the RP-2014 Healthy Annuitant Mortality Tables set forward two years for males and set forward one year for females, projected generationally with Scale MP-2016.
  - vi) Pre-retirement mortality assumption was changed from 85% of the post-retirement mortality assumption for males and 70% of the post-retirement mortality assumption for females to 120% of the RP-2014 Employee Mortality Tables projected generationally with Scale MP-2016 for both males and females.



## SECTION 1: Valuation Summary for the Municipal Employees' Annuity and Benefit Fund of Chicago

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- vii) Termination rates were increased for all members.
- viii) Retirement rates for Tier 1 members were modified to better reflect anticipated future experience.

The total impact of these changes was an increase in the actuarial accrued liability of \$862 million, a decrease in the funded ratio of 1.5%, and an increase in the actuarially determined contribution requirement of 1.0%.

3. For the year ended December 31, 2017, Segal has determined that the asset return on a market basis was 14.6%. After gradual recognition of investment gains and losses under the actuarial smoothing method, the actuarial rate of return was 8.3%. This represents an experience gain when compared to the assumed rate of 7.5%, the investment return assumption for the year ended December 31, 2017 (changed to 7.0% effective January 1, 2018). As of December 31, 2017, the actuarial value of assets (\$4.46 billion) represents 98% of the market value (\$4.55 billion).
4. The funded ratio based on the actuarial value of assets over the actuarial accrued liability as of December 31, 2017, is 27.4%, compared to 30.5% as of December 31, 2016. The funded ratio as of December 31, 2017 before reflecting the assumption changes is 28.9%. The 1.6% decrease in the funded ratio before reflecting the assumption changes was a result of contributions being insufficient to cover the normal cost and interest on the unfunded actuarial accrued liability. Using the market value of assets, the funded ratio as of December 31, 2017, is 28.0%, compared to 29.5% as of December 31, 2016.
5. As shown in Chart 13, for the fiscal year beginning January 1, 2018, the actuarially determined contribution (ADC) for pension benefits is \$1,049,915,647. The expected employer contribution for 2018 (payable in 2019) is \$344,000,000. **Compared to the actuarially determined contribution of \$1,049,915,647, the contribution deficiency is \$705,915,647. Each year there is a contribution deficiency leads to an increased deficiency in all future years.**
6. The total employer contributions for 2017 were expected to be \$266,000,000. Actual employer contributions for 2017 totaled \$261,763,635.
7. When measuring pension liability for GASB purposes, the same actuarial cost method (Entry Age method) as is used for funding purposes. In addition, as of December 31, 2017, the GASB blended discount rate calculation results in the same discount rate (7.00%) that is used for funding purposes. This means that the total pension liability (TPL) measure for financial reporting shown in this report will match the actuarial accrued liability (AAL) measure for funding.
8. The net pension liability (NPL) is equal to the difference between the TPL and the Plan's fiduciary net position. The Plan's fiduciary net position is equal to the market value of assets. The NPL decreased from \$18,855,043,800 as of December 31, 2016, to \$11,728,377,908 as of December 31, 2017. The decrease in the NPL is primarily due to the increase in the GASB blended discount rate as a result of the increased future funding provided by Public Act 100-0023.

## SECTION 1: Valuation Summary for the Municipal Employees' Annuity and Benefit Fund of Chicago

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9. As indicated in Section 2, Subsection B of this report, the total unrecognized investment gain as of December 31, 2017, is \$97,246,543. This investment gain will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment losses derived from future experience. This implies that earning the assumed rate of investment return of 7.0% per year (net of expenses) on a market value basis will result in investment gains on the actuarial value of assets in the next few years.
10. As mentioned above, the current method used to determine the actuarial value of assets yields an amount that is 97.9% of the market value of assets as of December 31, 2017. Guidelines in Actuarial Standards of Practice No. 44 (Selection and Use of Asset Valuation Methods for Pension Valuations) recommend that asset values fall within a reasonable range around the corresponding market value. We believe the actuarial asset method currently complies with these guidelines.
11. This actuarial valuation report as of December 31, 2017, is based on financial data as of that date. Changes in the value of assets subsequent to that date are not reflected.

**SECTION 1: Valuation Summary for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**Summary of Key Valuation Results**

	2017		2016	
<b>Funding ratios as of December 31:</b>	<b><u>New Assumptions</u></b>	<b><u>Old Assumptions</u></b>		
Actuarial accrued liability	\$16,282,396,195	\$15,420,454,261	\$15,055,348,696	
Market value of assets	4,554,018,287	4,554,018,287	4,436,227,596	
Unfunded actuarial accrued liability on a market value basis	11,728,377,908	10,866,435,974	10,619,121,100	
Funded ratio on a market value basis	27.97%	29.53%	29.47%	
Actuarial value of assets	\$4,456,771,744	\$4,456,771,744	\$4,590,366,241	
Unfunded actuarial accrued liability on an actuarial value basis	11,825,624,451	10,963,682,517	10,464,982,455	
Funded ratio on an actuarial value basis	27.37%	28.90%	30.49%	
Book value of assets	\$3,765,555,325	\$3,765,555,325	\$3,816,295,757	
Unfunded actuarial accrued liability on a book value basis	12,516,840,870	11,654,898,936	11,239,052,940	
Funded ratio on a book value basis	23.13%	24.42%	25.35%	
<b>Demographic data as of December 31:</b>				
Number of retirees and beneficiaries		25,383	25,236	
Number of inactive members		17,549	16,876	
Number of active members		30,922	30,296	
Total pensionable salary supplied by the Fund		\$1,686,532,720	\$1,646,939,238	
Average pensionable salary		\$54,542	\$54,362	
<b>Contribution requirement for Fiscal Year:</b>	<b>2019</b>	<b>2018</b>		<b>2017</b>
Statutory city contribution*	\$421,000,000	\$344,000,000	\$344,000,000	\$266,000,000
Actuarially determined contribution requirement	N/A	1,049,915,647	1,039,250,927	1,005,456,621

\*As established by Public Act 100-0023. City contributions are shown in the year that they will be booked. The contributions will be paid in the following year.

**SECTION 1: Valuation Summary for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**Summary of Key Valuation Results**

	<b>2018</b>	<b>2017</b>
<b>Contributions for plan year beginning January 1:</b>		
Actuarially determined contribution requirement	\$1,049,915,647	\$1,005,456,621
Expected employer contributions	344,000,000	266,000,000*
Actual employer contributions**	--	261,763,635
<b>Funding elements for plan year beginning January 1:</b>		
Employer normal cost, including administrative expenses, adjusted for timing	\$96,931,103	\$119,373,624
Market value of assets	4,554,018,287	4,436,227,596
Actuarial value of assets	4,456,771,744	4,590,366,241
Actuarial accrued liability	16,282,396,195	15,055,348,696
Unfunded actuarial accrued liability on an actuarial value basis	11,825,624,451	10,464,982,455
Funded ratio on an actuarial value basis	27.37%	30.49%
<b>GASB information as of December 31 of the prior year:</b>		
Long-term expected rate of return	7.00%	7.50%
Municipal bond index	3.44%	3.78%
Single equivalent discount rate	7.00%	3.91%
Total pension liability	\$16,282,396,195	\$23,291,271,396
Plan fiduciary net position	4,554,018,287	4,436,227,596
Net pension liability	11,728,377,908	18,855,043,800
Plan fiduciary net position as a percentage of total pension liability	27.97%	19.05%

\*Revised from prior year report pursuant to Public Act 100-0023

\*\*Receivable amount to be paid the following year

## SECTION 1: Valuation Summary for the Municipal Employees' Annuity and Benefit Fund of Chicago

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### Important Information About Actuarial Valuations

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

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

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

## SECTION 1: Valuation Summary for the Municipal Employees' Annuity and Benefit Fund of Chicago

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

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

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

**SECTION 2: Valuation Results for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**A. MEMBER DATA**

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

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

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

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

**CHART 1**  
**Member Population: 2008 – 2017**

<b>Year Ended December 31</b>	<b>Active Members</b>	<b>Inactive Members</b>	<b>Retirees and Beneficiaries</b>	<b>Ratio of Non-Actives to Actives</b>
2008	32,563	12,082	22,730	1.07
2009	31,586	12,919	22,782	1.13
2010	30,726	13,866	22,960	1.20
2011	31,976	12,762	23,382	1.13
2012	31,326	13,465	24,120	1.20
2013	30,647	14,254	24,602	1.27
2014	30,160	15,495	24,855	1.34
2015	30,683	16,268	24,964	1.34
2016	30,296	16,876	25,236	1.39
2017	30,922	17,549	25,383	1.39

**SECTION 2: Valuation Results for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**Active Members**

Plan costs are affected by the age, years of service and salary of active members. In this year's valuation, there were 30,922 active members with an average age of 46.4, average years of service of 11.4 and average salary of \$54,542. The 30,296 active members in the prior valuation had an average age of 46.6, average years of service of 11.8 and average salary of \$54,362.

The active members included 162 members receiving ordinary disability benefits and 211 members receiving duty disability benefits. This compares to 178 and 216 members receiving ordinary and duty disability benefits, respectively, in the prior valuation.

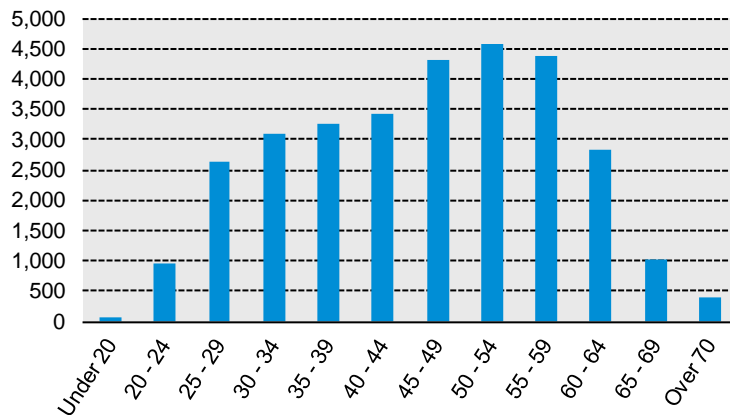
**Inactive Members**

In this year's valuation, there were 1,933 members with a vested right to a deferred or immediate vested benefit. In addition, there were 15,616 members entitled to a return of their account balance.

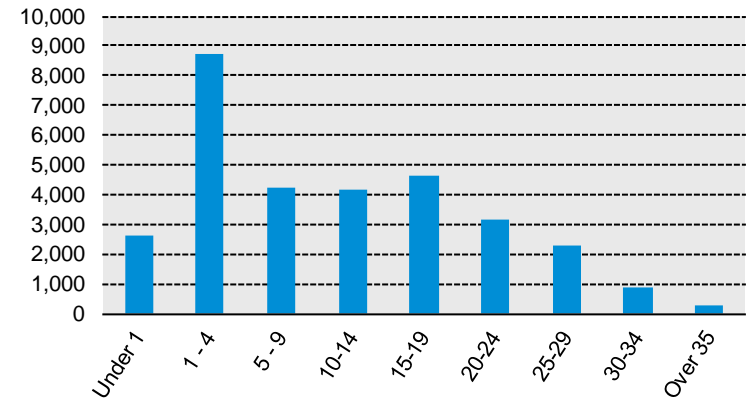
This number includes 24 members with unknown age. The actuarial calculations were adjusted for the missing information by assuming that it was the same as information provided for other inactive members with similar known characteristics.

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

**CHART 2**  
**Distribution of Active Members by Age as of December 31, 2017**



**CHART 3**  
**Distribution of Active Members by Years of Service as of December 31, 2017**





**SECTION 2: Valuation Results for the Municipal Employees' Annuity and Benefit Fund of Chicago**

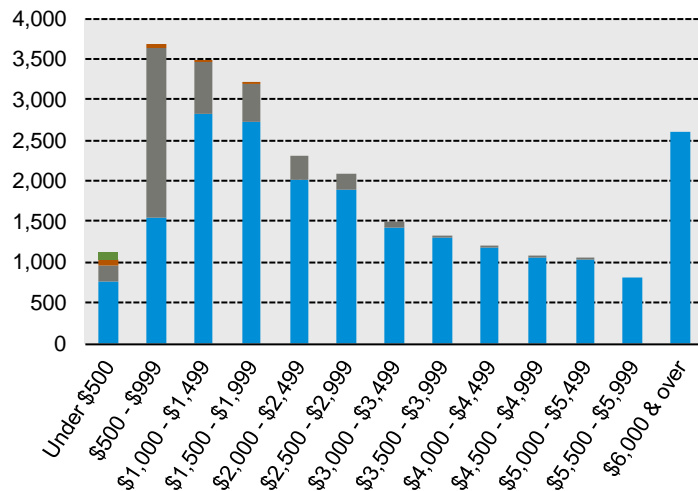
**Retirees and Beneficiaries**

As of December 31, 2017, 21,137 retirees and 4,245 beneficiaries were receiving total monthly benefits of \$72,631,055 (excluding 1 deferred retiree). For comparison, in the previous valuation, there were 20,919 retirees and 4,315 beneficiaries receiving monthly benefits of \$69,930,619 (excluding 2 deferred retirees).

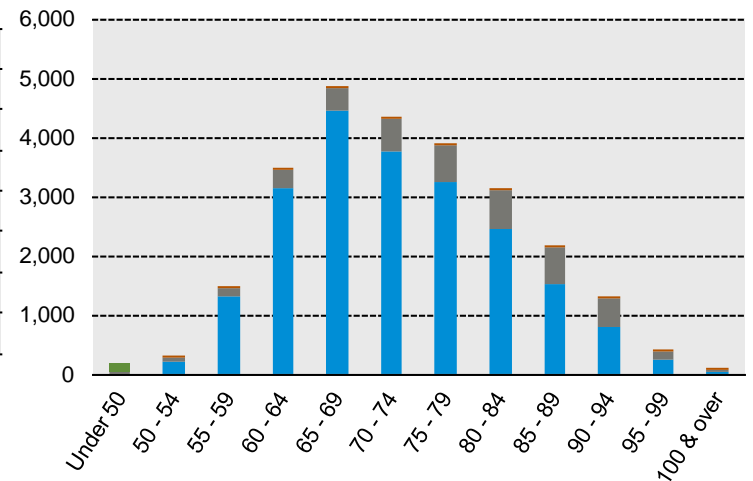
*These graphs show a distribution of the current retirees and beneficiaries based on their monthly amount and age, by type of pension.*

- Child Annuitants
- Reversionary Annuitants
- Surviving Spouse Annuitants
- Employee Annuitants

**CHART 4**  
**Distribution of Retirees and Beneficiaries by Type and by Monthly Amount as of December 31, 2017**



**CHART 5**  
**Distribution of Retirees and Beneficiaries by Type and by Age as of December 31, 2017**



## SECTION 2: Valuation Results for the Municipal Employees' Annuity and Benefit Fund of Chicago

### B. FINANCIAL INFORMATION

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

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

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

### CHART 6

#### Determination of Actuarial Value of Assets for Years Ended December 31, 2017 and December 31, 2016

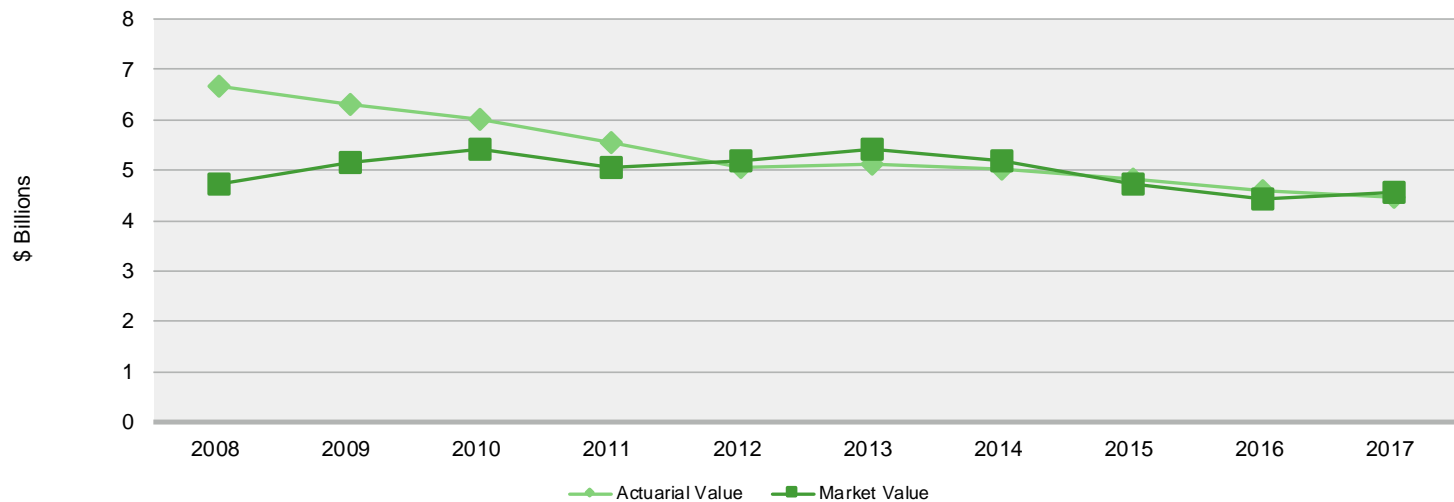
		2017	2016
1.	Market value of assets as of prior December 31	\$4,436,227,596	\$4,741,427,557
2.	Employer and employee contributions and other income	401,922,136	287,834,877
3.	Benefits and expenses	894,646,541	874,453,984
4.	Expected investment income	304,423,768	327,704,699
5.	Total investment income, including income for securities lending	610,515,096	281,419,146
6.	Investment gain/(loss) for the year ended December 31: (5) – (4)	306,091,328	-46,285,553
7.	Market value of assets as of December 31	4,554,018,287	4,436,227,596
8.	Calculation of unrecognized return	% Not Recognized	% Not Recognized
	<u>Original Amount</u>		
(a)	Year ended December 31, 2017	80% \$244,873,062	--
(b)	Year ended December 31, 2016	60% -27,771,333	80% -\$37,028,442
(c)	Year ended December 31, 2015	40% -99,127,466	60% -148,691,198
(d)	Year ended December 31, 2014	20% -20,727,720	40% -41,455,440
(e)	Year ended December 31, 2013	0	20% <u>73,036,435</u>
(f)	Total unrecognized return	<u>97,246,543</u>	<u>-154,138,645</u>
9.	Total actuarial value of assets as of December 31: (7) – (8f)	<u>\$4,456,771,744</u>	<u>\$4,590,366,241</u>

**SECTION 2: Valuation Results for the Municipal Employees' Annuity and Benefit Fund of Chicago**

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

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

**CHART 7**  
**Actuarial Value of Assets vs. Market Value of Assets as of December 31, 2008 – 2017**



**SECTION 2: Valuation Results for the Municipal Employees' Annuity and Benefit Fund of Chicago**

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**C. ACTUARIAL EXPERIENCE**

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

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

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

The total gain is \$149,951,611; \$33,329,605 from investment gains and \$116,622,006 in gains from all other sources. The net experience variation from individual sources other than investments was approximately 0.8% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

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

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**CHART 8**  
**Actuarial Experience for Year Ended December 31, 2017**

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1. Net gain/(loss) from investments*	\$33,329,605
2. Net gain/(loss) from administrative expenses	583,778
3. Net gain/(loss) from other experience**	<u>116,038,228</u>
4. Net experience gain/(loss): (1) + (2) + (3)	\$149,951,611

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\* Details in Chart 9

\*\* Details in Chart 12

**SECTION 2: Valuation Results for the Municipal Employees' Annuity and Benefit Fund of Chicago**

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**Investment Rate of Return**

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the MEABF's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets for the 2017 Plan Year was 7.5% (changed to 7.0%, effective January 1, 2018). The actual rate of return on an actuarial basis for the 2017 plan year was 8.27%.

Since the actual return for the year was greater than the assumed return, the Fund experienced an actuarial gain during the year ended December 31, 2017 with regard to its investments.

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

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**CHART 9**  
**Actuarial Value Investment Experience for Year Ended December 31, 2017**

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1. Actual return	\$359,129,908
2. Average value of assets	4,344,004,039
3. Actual rate of return: (1) ÷ (2)	8.27%
4. Assumed rate of return	7.50%
5. Expected return: (2) x (4)	\$325,800,303
6. Actuarial gain/(loss): (1) – (5)	<u>\$33,329,605</u>

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## SECTION 2: Valuation Results for the Municipal Employees' Annuity and Benefit Fund of Chicago

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

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### CHART 10

#### Investment Return

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Year Ended December 31	Actuarial Value*	Market Value**
2008	1.5%	(28.6%)
2009	(0.3%)	19.6%
2010	1.3%	14.2%
2011	(0.6%)	0.1%
2012	(0.4%)	12.8%
2013	11.1%	16.1%
2014	9.3%	5.1%
2015	6.9%	2.1%
2016	8.0%	6.6%
2017	8.3%	14.9%
Average Returns		
Last 5 years	8.7%	8.8%
Last 10 years	4.4%	5.3%

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\* As determined by Segal

\*\* As determined by Investment Consultant, which may reflect updates from time to time

**SECTION 2: Valuation Results for the Municipal Employees' Annuity and Benefit Fund of Chicago**

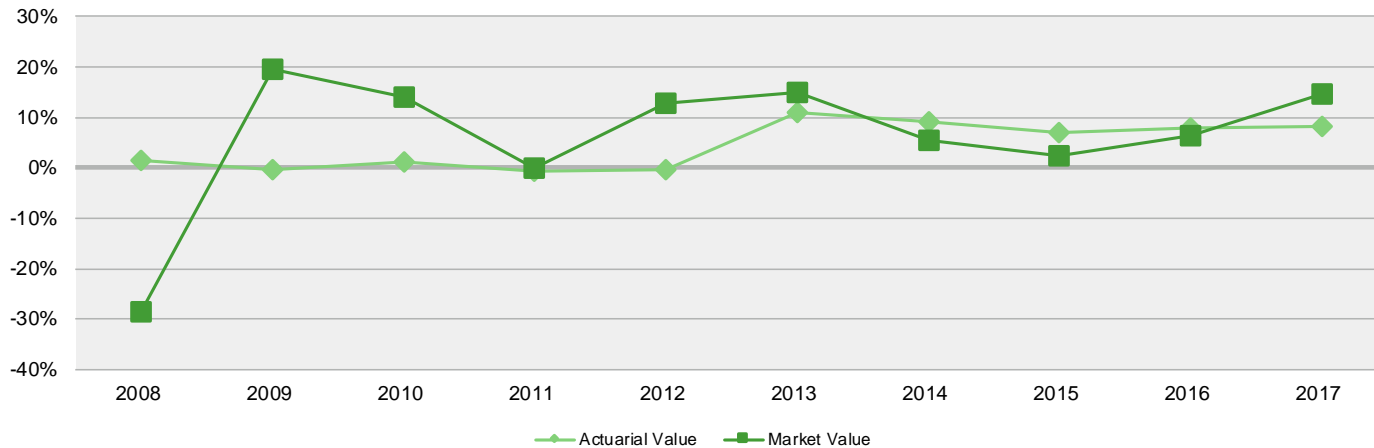
Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs. Chart 11 illustrates that the asset returns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

**Administrative Expenses**

Administrative expenses for the year ended December 31, 2017 totaled \$6,473,006 compared to the assumption of \$7,056,784. This resulted in a gain of \$583,778 for the year.

*This chart illustrates how this leveling effect has actually worked over the years 2008 - 2017.*

**CHART 11**  
**Market and Actuarial Rates of Return for Years Ended December 31, 2008 - 2017**



**SECTION 2: Valuation Results for the Municipal Employees' Annuity and Benefit Fund of Chicago**

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**Other Experience**

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

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),

- the number of disability retirements, and
- salary increases different than assumed.

The net gain from this other experience for the year ended December 31, 2017, amounted to \$116,038,228, which is approximately 0.8% of the actuarial accrued liability.

A brief summary of the demographic gain/(loss) experience of the Fund for the year ended December 31, 2017, is shown in the chart below.

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

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**CHART 12**

**Experience Due to Changes in Demographics for Year Ended December 31, 2017**

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1. More turnover than expected	\$18,918,871
2. More or earlier retirement than expected	-37,321,885
3. More deaths than expected among retirees and beneficiaries	31,942,675
4. Lower salary/service increases than expected for continuing actives	112,812,152
5. New entrants	-9,873,490
6. Miscellaneous	<u>-440,095</u>
7. Total	\$116,038,228

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## SECTION 2: Valuation Results for the Municipal Employees' Annuity and Benefit Fund of Chicago

### D. DEVELOPMENT OF EMPLOYER COSTS

The amount of actuarially determined contribution is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability. This total amount is then divided by the projected payroll for active members to determine the actuarially determined contribution of 60.48% of payroll.

The actuarially determined contribution is based on a 30-year, level dollar amortization of the unfunded actuarial accrued liability. A 30-year “rolling” amortization will never fully fund the unfunded actuarial accrued liability.

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

### CHART 13 Actuarially Determined Contribution

	Year Beginning January 1, 2018	
	Amount	% of Payroll
1. Total normal cost*	\$231,219,539	13.32%
2. Administrative expenses	6,473,006	0.37%
3. Expected employee contributions**	<u>-143,985,711</u>	<u>-8.29%</u>
4. Employer normal cost: (1) + (2) + (3)	93,706,834	5.40%
5. Employer normal cost, adjusted for timing***	96,931,103	5.58%
6. Actuarial accrued liability	16,282,396,195	
7. Actuarial value of assets	<u>4,456,771,744</u>	
8. Unfunded/(overfunded) actuarial accrued liability: (6) - (7)	11,825,624,451	
9. Payment on unfunded actuarial accrued liability, adjusted for timing***	952,984,544	54.90%
10. Actuarially determined contribution: (5) + (9)	<u>\$1,049,915,647</u>	<u>60.48%</u>
11. Projected payroll	\$1,735,903,811	

\* Reflects timing adjustment to the middle of the year

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

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

## SECTION 2: Valuation Results for the Municipal Employees' Annuity and Benefit Fund of Chicago

The contribution requirements as of December 31, 2017, are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

### Reconciliation of Actuarially Determined Contribution

The chart below details the changes in the actuarially determined contribution from the prior valuation to the current year's valuation.

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

#### CHART 14

#### Reconciliation of Actuarially Determined Contribution from December 31, 2016 to December 31, 2017

<b>Actuarially Determined Contribution as of December 31, 2016</b>	\$1,005,456,621
Effect of plan amendment	\$0
Effect of change in asset method	0
Effect of expected change in amortization payment due to payroll growth	0
Effect of rolling amortization period	-9,023,401
Effect of change in administrative expense assumption	-603,865
Effect of change in other actuarial assumptions	15,316,884
Effect of contributions (more)/less than actuarially determined contribution	64,318,704
Effect of investment (gain)/loss	-2,822,059
Effect of other (gains)/losses on accrued liability	-9,874,529
Effect of net other changes: (gain)/loss*	<u>-12,852,708</u>
<b>Total change</b>	<u>\$44,459,026</u>
<b>Actuarially Determined Contribution as of December 31, 2017</b>	\$1,049,915,647

\*Primarily due to legislative changes: creation of a new tier of pension benefits

**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT A**

**Table of Plan Coverage**

<b>Category</b>	<b>Year Ended December 31</b>		<b>Change From Prior Year</b>
	<b>2017</b>	<b>2016</b>	
<b>Active members in valuation:</b>			
Number*	30,922	30,296	2.1%
Average age	46.4	46.6	N/A
Average years of service	11.4	11.8	N/A
Total pensionable salary supplied by the Fund	\$1,686,532,720	\$1,646,939,238	2.4%
Average pensionable salary	\$54,542	\$54,362	0.3%
Total active vested members	15,320	15,741	-2.7%
Male members	12,518	12,482	0.3%
Female members	18,404	17,814	3.3%
Tier 1 members	19,586	20,252	-3.3%
Tier 2 members	9,349	10,044	-6.9%
Tier 3 members	1,987	N/A	N/A
<b>Inactive members</b>	<b>17,549</b>	<b>16,876</b>	<b>4.0%</b>
<b>Deferred retirees</b>	<b>1</b>	<b>2</b>	<b>-50.0%</b>
<b>Retirees:</b>			
Number in pay status	21,137	20,919	1.0%
Average age	72.9	72.9	N/A
Average monthly benefit	\$3,198	\$3,104	3.0%
<b>Surviving spouses:</b>			
Number in pay status	4,007	4,085	-1.9%
Average age	78.4	78.5	N/A
Average monthly benefit	\$1,238	\$1,207	2.6%
<b>Reversionary annuitants:</b>			
Number in pay status	124	128	-3.1%
Average age	78.5	79.8	N/A
Average monthly benefit	\$437	\$411	6.3%
<b>Children</b>	<b>114</b>	<b>102</b>	<b>11.8%</b>
<b>Total number of members</b>	<b>73,854</b>	<b>72,408</b>	<b>2.0%</b>

\*Includes 394 and 373 members receiving disability benefits for 2016 and 2017, respectively.

**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT B.1**

**All Members in Active Service as of December 31, 2017  
By Age, Years of Service, and Total Salary**

Age	Years of Service									
	Total	Under 1	1 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 & Over
Under 20	54	39	15	-	-	-	-	-	-	-
	\$1,222,652	\$982,832	\$239,820	-	-	-	-	-	-	-
20 – 24	953	367	572	14	-	-	-	-	-	-
	28,609,756	11,232,217	16,957,884	\$419,655	-	-	-	-	-	-
25 – 29	2,638	589	1,664	372	13	-	-	-	-	-
	102,375,027	20,451,285	67,085,302	14,257,540	\$580,900	-	-	-	-	-
30 – 34	3,108	416	1,594	777	278	43	-	-	-	-
	144,346,118	15,864,056	75,468,583	37,355,051	13,530,960	\$2,127,468	-	-	-	-
35 – 39	3,271	361	1,305	678	585	287	55	-	-	-
	173,264,565	14,270,874	65,262,483	38,082,476	34,725,378	16,771,353	\$4,152,001	-	-	-
40 – 44	3,432	295	1,014	607	629	599	267	21	-	-
	194,440,898	11,966,488	50,843,751	33,015,370	38,615,222	38,989,297	19,519,870	\$1,490,900	-	-
45 – 49	4,298	220	973	580	698	873	633	305	16	-
	258,026,056	8,712,616	47,609,520	31,746,506	42,353,004	55,216,968	47,610,003	23,377,358	\$1,400,081	-
50 – 54	4,563	172	692	504	660	961	737	659	171	7
	276,400,730	6,645,641	33,102,556	26,137,686	36,075,977	56,228,754	53,116,359	50,287,668	14,147,418	\$658,671
55 – 59	4,371	117	521	378	660	966	723	628	324	54
	257,423,904	4,867,331	25,497,100	18,700,670	33,469,887	52,287,821	46,868,802	45,327,635	26,027,203	4,377,455
60 – 64	2,818	47	260	227	414	598	497	440	232	103
	168,026,035	1,841,907	12,794,463	11,575,654	19,331,434	32,833,973	31,688,178	31,742,784	17,597,317	8,620,325
65 – 69	1,013	17	63	87	161	209	186	161	87	42
	60,584,054	725,823	3,006,661	3,573,292	8,463,317	11,950,717	12,179,613	10,657,544	7,003,709	3,023,378
70 & Over	403	3	31	31	55	64	63	68	38	50
	21,812,925	70,683	885,385	1,007,679	2,276,347	3,278,444	3,914,871	4,111,092	3,007,800	3,260,624
<b>Total</b>	<b>30,922</b>	<b>2,643</b>	<b>8,704</b>	<b>4,255</b>	<b>4,153</b>	<b>4,600</b>	<b>3,161</b>	<b>2,282</b>	<b>868</b>	<b>256</b>
	<b>\$1,686,532,720</b>	<b>\$97,631,753</b>	<b>\$398,753,508</b>	<b>\$215,871,579</b>	<b>\$229,422,426</b>	<b>\$269,684,795</b>	<b>\$219,049,697</b>	<b>\$166,994,981</b>	<b>\$69,183,528</b>	<b>\$19,940,453</b>

**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT B.2**

**Male Members in Active Service as of December 31, 2017  
By Age, Years of Service, and Total Salary**

Age	Years of Service									
	Total	Under 1	1 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 & Over
Under 20	22	16	6	-	-	-	-	-	-	-
	\$481,498	\$391,588	\$89,910	-	-	-	-	-	-	-
20 – 24	330	113	213	4	-	-	-	-	-	-
	10,770,619	3,665,610	6,969,653	\$135,356	-	-	-	-	-	-
25 – 29	1,018	203	656	151	8	-	-	-	-	-
	44,876,375	7,905,479	30,369,127	6,179,200	\$422,569	-	-	-	-	-
30 – 34	1,256	146	626	335	134	15	-	-	-	-
	67,147,117	6,294,170	34,269,235	18,272,478	7,394,892	\$916,342	-	-	-	-
35 – 39	1,337	115	494	335	258	112	23	-	-	-
	83,445,667	5,075,178	30,798,227	21,233,242	17,014,344	7,431,779	\$1,892,897	-	-	-
40 – 44	1,420	104	385	282	264	251	123	11	-	-
	96,747,288	5,336,370	24,729,736	18,111,825	19,160,824	18,610,250	10,084,107	\$714,176	-	-
45 – 49	1,765	72	367	263	332	331	267	126	7	-
	129,468,802	3,141,268	23,595,840	17,392,667	25,471,970	25,459,214	22,484,832	11,302,860	\$620,151	-
50 – 54	1,897	52	276	209	283	344	323	318	89	3
	143,343,313	2,568,928	17,411,322	14,300,502	19,744,348	26,492,617	27,233,187	27,551,908	7,745,610	\$294,891
55 – 59	1,704	39	199	148	253	319	285	261	174	26
	128,851,623	2,176,145	12,750,617	9,436,590	16,674,316	24,110,595	23,132,483	22,768,526	15,489,855	2,312,496
60 – 64	1,172	20	119	98	154	200	201	198	122	60
	89,277,819	783,821	7,268,791	5,965,530	9,776,093	15,709,520	16,227,306	17,352,687	10,727,608	5,466,463
65 – 69	447	5	39	36	73	88	65	69	53	19
	33,445,532	211,303	2,213,261	1,901,098	5,092,635	6,623,570	5,420,971	5,736,003	4,637,917	1,608,774
70 & Over	150	1	8	10	28	25	24	14	23	17
	10,341,637	12,990	252,795	446,241	1,432,055	1,667,539	1,877,454	1,122,108	2,068,402	1,462,053
<b>Total</b>	<b>12,518</b>	<b>886</b>	<b>3,388</b>	<b>1,871</b>	<b>1,787</b>	<b>1,685</b>	<b>1,311</b>	<b>997</b>	<b>468</b>	<b>125</b>
	<b>\$838,197,290</b>	<b>\$37,562,850</b>	<b>\$190,718,514</b>	<b>\$113,374,729</b>	<b>\$122,184,046</b>	<b>\$127,021,426</b>	<b>\$108,353,237</b>	<b>\$86,548,268</b>	<b>\$41,289,543</b>	<b>\$11,144,677</b>

**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT B.3**

**Female Members in Active Service as of December 31, 2017  
By Age, Years of Service, and Total Salary**

Age	Years of Service									
	Total	Under 1	1 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 & Over
Under 20	32	23	9	-	-	-	-	-	-	-
	\$741,154	\$591,244	\$149,910	-	-	-	-	-	-	-
20 – 24	623	254	359	10	-	-	-	-	-	-
	17,839,137	7,566,607	9,988,231	\$284,299	-	-	-	-	-	-
25 – 29	1,620	386	1,008	221	5	-	-	-	-	-
	57,498,652	12,545,806	36,716,175	8,078,340	\$158,331	-	-	-	-	-
30 – 34	1,852	270	968	442	144	28	-	-	-	-
	77,199,001	9,569,886	41,199,348	19,082,573	6,136,068	\$1,211,126	-	-	-	-
35 – 39	1,934	246	811	343	327	175	32	-	-	-
	89,818,898	9,195,696	34,464,256	16,849,234	17,711,034	9,339,574	\$2,259,104	-	-	-
40 – 44	2,012	191	629	325	365	348	144	10	-	-
	97,693,610	6,630,118	26,114,015	14,903,545	19,454,398	20,379,047	9,435,763	\$776,724	-	-
45 – 49	2,533	148	606	317	366	542	366	179	9	-
	128,557,254	5,571,348	24,013,680	14,353,839	16,881,034	29,757,754	25,125,171	12,074,498	\$779,930	-
50 – 54	2,666	120	416	295	377	617	414	341	82	4
	133,057,417	4,076,713	15,691,234	11,837,184	16,331,629	29,736,137	25,883,172	22,735,760	6,401,808	\$363,780
55 – 59	2,667	78	322	230	407	647	438	367	150	28
	128,572,281	2,691,186	12,746,483	9,264,080	16,795,571	28,177,226	23,736,319	22,559,109	10,537,348	2,064,959
60 – 64	1,646	27	141	129	260	398	296	242	110	43
	78,748,216	1,058,086	5,525,672	5,610,124	9,555,341	17,124,453	15,460,872	14,390,097	6,869,709	3,153,862
65 – 69	566	12	24	51	88	121	121	92	34	23
	27,138,522	514,520	793,400	1,672,194	3,370,682	5,327,147	6,758,642	4,921,541	2,365,792	1,414,604
70 & Over	253	2	23	21	27	39	39	54	15	33
	11,471,288	57,693	632,590	561,438	844,292	1,610,905	2,037,417	2,988,984	939,398	1,798,571
<b>Total</b>	<b>18,404</b>	<b>1,757</b>	<b>5,316</b>	<b>2,384</b>	<b>2,366</b>	<b>2,915</b>	<b>1,850</b>	<b>1,285</b>	<b>400</b>	<b>131</b>
	<b>\$848,335,430</b>	<b>\$60,068,903</b>	<b>\$208,034,994</b>	<b>\$102,496,850</b>	<b>\$107,238,380</b>	<b>\$142,663,369</b>	<b>\$110,696,460</b>	<b>\$80,446,713</b>	<b>\$27,893,985</b>	<b>\$8,795,776</b>

**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT B.4**

**Board of Education Plan Members in Active Service as of December 31, 2017  
By Age, Years of Service, and Total Salary**

Age	Years of Service									
	Total	Under 1	1 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 & Over
Under 20	37	33	4	-	-	-	-	-	-	-
	\$1,011,544	\$903,384	\$108,160	-	-	-	-	-	-	-
20 – 24	739	299	427	13	-	-	-	-	-	-
	22,393,673	9,342,692	12,651,980	\$399,001	-	-	-	-	-	-
25 – 29	1,907	436	1,148	316	7	-	-	-	-	-
	68,066,110	14,575,298	41,344,535	11,743,781	\$402,496	-	-	-	-	-
30 – 34	2,084	290	985	613	189	7	-	-	-	-
	84,945,637	10,129,417	39,404,943	26,481,323	8,488,776	\$441,178	-	-	-	-
35 – 39	1,989	255	781	450	340	154	9	-	-	-
	85,193,816	8,887,652	30,418,576	20,500,573	16,582,715	7,918,430	\$885,870	-	-	-
40 – 44	1,781	187	597	403	292	238	62	2	-	-
	74,433,874	6,533,951	23,326,175	17,205,104	13,027,834	11,082,954	3,152,548	\$105,308	-	-
45 – 49	2,157	132	609	371	351	400	195	92	7	-
	91,400,821	4,494,733	22,946,642	15,663,751	15,828,821	16,921,824	10,141,749	4,891,298	\$512,003	-
50 – 54	2,183	109	377	328	368	494	253	204	49	1
	91,805,828	3,532,558	13,537,671	12,901,991	14,777,804	19,839,535	12,635,818	11,198,095	3,283,089	\$99,267
55 – 59	2,098	74	276	251	369	512	298	230	82	6
	83,584,089	2,447,005	9,886,907	9,308,154	13,862,484	18,888,840	13,048,789	11,373,433	4,426,167	342,310
60 – 64	1,246	29	142	138	232	297	194	145	57	12
	49,621,748	937,838	5,226,425	5,181,298	8,049,059	10,735,745	8,635,654	7,070,878	2,853,522	931,329
65 – 69	391	10	29	57	78	87	61	48	16	5
	15,435,809	355,582	1,139,684	1,794,330	2,774,461	3,264,806	2,829,780	2,240,156	769,155	267,855
70 & Over	109	1	16	15	21	19	12	12	6	7
	3,524,600	43,195	477,488	343,469	533,160	647,694	442,543	485,761	286,072	265,218
<b>Total</b>	<b>16,721</b>	<b>1,855</b>	<b>5,391</b>	<b>2,955</b>	<b>2,247</b>	<b>2,208</b>	<b>1,084</b>	<b>733</b>	<b>217</b>	<b>31</b>
	<b>\$671,417,549</b>	<b>\$62,183,305</b>	<b>\$200,469,186</b>	<b>\$121,522,775</b>	<b>\$94,327,610</b>	<b>\$89,741,006</b>	<b>\$51,772,751</b>	<b>\$37,364,929</b>	<b>\$12,130,008</b>	<b>\$1,905,979</b>

**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT B.5**

**City Plan Members in Active Service as of December 31, 2017  
By Age, Years of Service, and Total Salary**

Age	Years of Service									
	Total	Under 1	1 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 & Over
Under 20	16	6	10	-	-	-	-	-	-	-
	\$209,348	\$79,448	\$129,900	-	-	-	-	-	-	-
20 – 24	208	66	141	1	-	-	-	-	-	-
	6,155,101	1,884,699	4,249,748	\$20,654	-	-	-	-	-	-
25 – 29	725	152	513	54	6	-	-	-	-	-
	33,971,837	5,825,987	25,570,337	2,397,109	\$178,404	-	-	-	-	-
30 – 34	1,021	126	609	162	88	36	-	-	-	-
	59,253,541	5,734,639	36,063,640	10,777,728	4,991,244	\$1,686,290	-	-	-	-
35 – 39	1,269	105	523	222	242	132	45	-	-	-
	87,065,472	5,382,883	34,753,907	17,146,734	17,889,656	8,681,227	\$3,211,065	-	-	-
40 – 44	1,645	107	416	203	337	361	202	19	-	-
	119,611,517	5,372,537	27,412,576	15,772,410	25,587,388	27,906,343	16,174,671	\$1,385,592	-	-
45 – 49	2,136	88	362	209	347	473	435	213	9	-
	166,154,629	4,217,883	24,480,278	16,082,755	26,524,183	38,295,144	37,180,248	18,486,060	\$888,078	-
50 – 54	2,369	63	314	176	289	466	482	452	121	6
	183,448,924	3,113,083	19,445,341	13,235,695	21,005,448	36,335,069	40,206,341	38,747,662	10,800,881	\$559,404
55 – 59	2,265	43	245	127	288	451	425	397	241	48
	173,238,388	2,420,326	15,610,193	9,392,516	19,433,413	33,134,409	33,820,013	33,868,202	21,524,171	4,035,145
60 – 64	1,569	18	117	89	182	301	302	295	175	90
	118,188,752	904,069	7,486,038	6,394,356	11,282,375	22,098,228	23,001,429	24,671,906	14,743,795	7,606,556
65 – 69	619	7	33	30	82	122	125	112	71	37
	44,988,805	370,241	1,830,177	1,778,962	5,643,962	8,685,911	9,349,833	8,339,642	6,234,554	2,755,523
70 & Over	293	2	15	16	34	45	51	55	32	43
	18,214,084	27,488	407,897	664,210	1,743,187	2,630,750	3,472,328	3,551,090	2,721,728	2,995,406
<b>Total</b>	<b>14,135</b>	<b>783</b>	<b>3,298</b>	<b>1,289</b>	<b>1,895</b>	<b>2,387</b>	<b>2,067</b>	<b>1,543</b>	<b>649</b>	<b>224</b>
	<b>\$1,010,500,398</b>	<b>\$35,333,283</b>	<b>\$197,440,032</b>	<b>\$93,663,129</b>	<b>\$134,279,260</b>	<b>\$179,453,371</b>	<b>\$166,415,928</b>	<b>\$129,050,154</b>	<b>\$56,913,207</b>	<b>\$17,952,034</b>



**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT C**

**Inactive Members as of December 31, 2017  
By Age and Years of Service**

Age	Years of Service									
	Total	Under 1	1 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 & Over
Under 20	3	3	-	-	-	-	-	-	-	-
20 – 24	243	142	101	-	-	-	-	-	-	-
25 – 29	1,318	488	796	34	-	-	-	-	-	-
30 – 34	2,291	710	1,432	141	8	-	-	-	-	-
35 – 39	2,480	611	1,545	234	81	9	-	-	-	-
40 – 44	2,148	446	1,209	335	123	30	5	-	-	-
45 – 49	2,266	466	1,162	320	198	81	34	5	-	-
50 – 54	2,068	368	973	298	196	123	71	37	2	-
55 – 59	1,935	293	839	312	284	153	41	12	1	-
60 – 64	1,246	197	598	233	114	60	30	13	1	-
65 – 69	687	128	362	115	42	19	14	3	3	1
70 & Over	840	144	397	160	60	26	22	19	7	5
Unknown	24	17	5	2	-	-	-	-	-	-
<b>Total</b>	<b>17,549</b>	<b>4,013</b>	<b>9,419</b>	<b>2,184</b>	<b>1,106</b>	<b>501</b>	<b>217</b>	<b>89</b>	<b>14</b>	<b>6</b>
Average Age	46.22									
Average Service	3.72									

**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT D.1**

**Employee Annuitants as of December 31, 2017  
By Age and Annual Benefit**

Age	Male		Female	
	Number	Annual Payments	Number	Annual Payments
Under 50	--	--	--	--
50 – 54	94	\$5,585,472	97	\$5,063,473
55 – 59	656	36,824,977	647	25,667,132
60 – 64	1,385	74,669,749	1,766	58,484,253
65 – 69	1,729	89,607,379	2,725	84,731,823
70 – 74	1,399	68,759,690	2,376	74,485,793
75 – 79	1,140	53,874,498	2,117	62,432,865
80 – 84	832	38,529,970	1,600	46,280,235
85 – 89	543	26,449,063	969	26,400,222
90 – 94	268	12,065,744	523	13,400,228
95 – 99	65	2,938,015	177	4,182,161
100 & over	<u>5</u>	<u>153,527</u>	<u>24</u>	<u>475,149</u>
<b>Totals</b>	8,116	\$409,458,083	13,021	\$401,603,334

**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT D.2**

**Surviving Spouse Annuitants as of December 31, 2017  
By Age and Annual Benefit**

Age	Male		Female	
	Number	Annual Payments	Number	Annual Payments
Under 40	2	\$19,200	1	\$9,600
40 – 44	1	9,600	11	112,207
45 – 49	1	9,600	26	340,872
50 – 54	16	154,166	54	797,775
55 – 59	27	352,310	119	1,882,242
60 – 64	67	804,853	225	4,007,740
65 – 69	77	923,240	293	4,928,829
70 – 74	133	1,617,886	403	6,636,250
75 – 79	119	1,479,325	487	7,954,772
80 – 84	137	1,678,730	522	8,354,730
85 – 89	106	1,243,091	527	8,083,002
90 – 94	75	837,563	412	5,423,563
95 – 99	19	217,499	122	1,399,357
100 & over	<u>3</u>	<u>29,639</u>	<u>22</u>	<u>241,799</u>
<b>Totals</b>	783	\$9,376,702	3,224	\$50,172,739

**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT D.3**

**Reversionary Annuitants as of December 31, 2017  
By Age and Annual Benefit**

Age	Male		Female	
	Number	Annual Payments	Number	Annual Payments
Under 30	--	--	1	\$2,616
30 – 34	--	--	--	--
35 – 39	--	--	2	3,882
40 – 44	--	--	--	--
45 – 49	--	--	3	4,902
50 – 54	--	--	1	690
55 – 59	1	\$750	4	10,596
60 – 64	1	18,864	10	91,268
65 – 69	1	3,216	8	45,082
70 – 74	1	1,374	5	27,096
75 – 79	1	4,440	15	85,818
80 – 84	--	--	22	130,127
85 – 89	--	--	25	120,276
90 – 94	--	--	17	78,736
95 – 99	--	--	5	18,656
100 & over	--	--	<u>1</u>	<u>1,212</u>
<b>Totals</b>	<b>5</b>	<b>\$28,644</b>	<b>119</b>	<b>\$620,957</b>

**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT D.4**

**Retirees and Beneficiaries as of December 31, 2017  
By Monthly Benefit Amount and Type**

<b>Amount of Monthly Benefit</b>	<b>Number of Employee Annuitants</b>	<b>Number of Spouse Annuitants</b>	<b>Number of Reversionary Annuitants</b>	<b>Number of Child Annuitants</b>	<b>Total Number of Annuitants</b>
Under \$500	761	184	78	114	1,137
\$500 - \$999	1,554	2,082	40	0	3,676
\$1,000 - \$1,499	2,811	658	3	0	3,472
\$1,500 - \$1,999	2,726	468	3	0	3,197
\$2,000 - \$2,499	2,001	307	0	0	2,308
\$2,500 - \$2,999	1,892	192	0	0	2,084
\$3,000 - \$3,499	1,434	73	0	0	1,507
\$3,500 - \$3,999	1,291	34	0	0	1,325
\$4,000 - \$4,499	1,169	6	0	0	1,175
\$4,500 - \$4,999	1,049	1	0	0	1,050
\$5,000 - \$5,499	1,024	2	0	0	1,026
\$5,500 - \$5,999	820	0	0	0	820
\$6,000 - \$6,499	812	0	0	0	812
\$6,500 - \$6,999	627	0	0	0	627
\$7,000 & over	<u>1,166</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1,166</u>
Totals	21,137	4,007	124	114	25,382

**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT E**

**Reconciliation of Member Data**

	<b>Active Members*</b>	<b>Inactive Members</b>	<b>Deferred Retirees</b>	<b>Retirees</b>	<b>Beneficiaries</b>	<b>Total</b>
Number as of December 31, 2016	30,296	16,876	2	20,919	4,315	72,408
New members	3,491	N/A	N/A	N/A	N/A	3,491
Terminations	-1,392	1,392	0	0	0	0
Retirements	-920	-203	-1	1,124	N/A	0
Died with beneficiary	-37	-2	0	-209	248	0
Died without beneficiary	-24	-9	0	-712	-343	-1,088
Refunds	-760	-314	0	0	0	-1,074
Rehire	268	-265	0	-3	N/A	0
Net transfers	0	73	0	0	0	73
Temporary annuity expired	N/A	N/A	NA	-5	-13	-18
Data adjustment	<u>0</u>	<u>1</u>	<u>0</u>	<u>23</u>	<u>38</u>	<u>62</u>
Number as of December 31, 2017	30,922	17,549	1	21,137	4,245	73,854

\* Includes members receiving disability benefits

**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT F.1**

**Summary Statement of Income and Expenses on a Market Value Basis**

	Year Ended December 31, 2017	Year Ended December 31, 2016
<b>Net assets at market value at the beginning of the year</b>	\$4,436,227,596	\$4,741,427,557
<b>Contribution income:</b>		
Employer contributions	\$261,763,635	\$157,444,029
Employee contributions	134,764,920	130,390,848
Administrative expenses	<u>-6,473,006</u>	<u>-7,056,784</u>
Net contribution income	390,055,549	280,778,093
<b>Investment income:</b>		
Interest, dividends and other income	\$107,770,984	\$123,223,963
Asset appreciation	522,085,114	178,672,757
Less investment fees	<u>-19,341,002</u>	<u>-20,477,574</u>
Net investment income	610,515,096	281,419,146
<b>Other income:</b>	<u>5,393,581*</u>	<u>0</u>
<b>Total income available for benefits</b>	\$1,005,964,226	\$562,197,239
<b>Less benefit payments:</b>		
Annuity payments	-\$842,632,392	-\$813,092,340
Refund of contributions	-33,830,051	-34,575,271
Disability payments	-11,711,092	-12,004,051
Postemployment healthcare subsidy	<u>0</u>	<u>-7,725,538</u>
Net benefit payments	-\$888,173,535	-\$867,397,200
<b>Change in reserve for future benefits</b>	\$117,790,691	-\$305,199,961
<b>Net assets at market value at the end of the year</b>	\$4,554,018,287	\$4,436,227,596

*\*OPEB income due to eliminating retiree health insurance subsidy for Fund staff members*

**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT F.2**

**Summary Statement of Income and Expenses on a Book Value Basis**

	Year Ended December 31, 2017	Year Ended December 31, 2016
<b>Net assets at book value at the beginning of the year</b>	\$3,816,295,757	\$4,175,111,569
<b>Contribution income:</b>		
Employer contributions	\$261,763,635	\$157,444,029
Employee contributions	134,764,920	130,390,848
Administrative expenses	<u>-6,473,006</u>	<u>-7,056,784</u>
Net contribution income	390,055,549	280,778,093
<b>Investment income:</b>		
Interest, dividends and other income	\$107,770,984	\$123,223,963
Realized investment gain/(loss)	353,553,991	125,056,906
Less investment fees	<u>-19,341,002</u>	<u>-20,477,574</u>
Net investment income	441,983,973	227,803,295
<b>Other income:</b>	<u>5,393,581*</u>	<u>0</u>
<b>Total income available for benefits</b>	\$837,433,103	\$508,581,388
<b>Less benefit payments:</b>		
Annuity payments	-\$842,632,392	-\$813,092,340
Refund of contributions	-33,830,051	-34,575,271
Disability payments	-11,711,092	-12,004,051
Postemployment healthcare subsidy	<u>0</u>	<u>-7,725,538</u>
Net benefit payments	-\$888,173,535	-\$867,397,200
<b>Change in reserve for future benefits</b>	-\$50,740,432	-\$358,815,812
<b>Net assets at book value at the end of the year</b>	\$3,765,555,325	\$3,816,295,757

\*OPEB income due to eliminating retiree health insurance subsidy for Fund staff members



**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT G**

**Summary Statement of Plan Assets**

	Year Ended December 31, 2017	Year Ended December 31, 2016
<b>Cash equivalents</b>	\$492,001	\$489,437
<b>Accounts receivable:</b>		
Employer contributions	\$260,306,200	\$156,051,122
Member contributions	10,973,768	10,642,911
Interest and dividends	12,121,538	11,846,833
Investments sold	18,482,922	59,113,273
Miscellaneous	<u>819,751</u>	<u>421,566</u>
Total accounts receivable	302,704,179	238,075,705
<b>Investments, at fair value:</b>		
Equities	\$2,508,445,189	\$2,390,414,507
Fixed income	986,491,904	1,007,435,747
Real estate	431,421,604	458,150,837
Short-term investments	169,027,392	192,097,254
Private equity	<u>200,760,945</u>	<u>237,648,563</u>
Total investments at market value	4,296,147,034	4,285,746,908
<b>Invested securities lending collateral</b>	243,632,186	304,808,240
<b>Capital assets</b>	<u>30,500</u>	<u>14,818</u>
<b>Total assets</b>	4,843,005,900	\$4,829,135,108
<b>Less accounts payable:</b>		
Securities lending collateral	-\$243,632,186	-\$304,808,240
Investments purchased	-38,450,544	-75,948,987
Accounts payable	-6,904,883	-6,756,704
OPEB liability	<u>0</u>	<u>-5,393,581</u>
Total accounts payable	-\$288,987,613	-\$392,907,512
<b>Net assets at market value</b>	<u>\$4,554,018,287</u>	<u>\$4,436,227,596</u>
<b>Net assets at actuarial value</b>	<u>\$4,456,771,744</u>	<u>\$4,590,366,241</u>

**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT H**

**Development of the Fund Through December 31, 2017**

<b>Year Ended December 31</b>	<b>Employer Contributions*</b>	<b>Employee Contributions</b>	<b>Net Investment Return**</b>	<b>Administrative Expenses</b>	<b>Benefit Payments</b>	<b>Actuarial Value of Assets at End of Year</b>
2008	\$155,832,612	\$137,748,907	\$101,373,105	\$7,749,714	\$608,166,058	\$6,669,501,770
2009	157,697,608	130,980,605	(21,761,698)	7,765,918	632,864,176	6,295,788,191
2010	164,302,005	133,299,542	76,825,912	6,744,947	660,081,098	6,003,389,605
2011	156,525,374	132,596,417	(37,170,409)	7,375,338	695,674,232	5,552,291,417
2012	158,380,709	130,266,293	(19,193,464)	6,841,486	741,583,194	5,073,320,275
2013	157,704,971	131,532,173	537,153,324	6,498,913	779,004,027	5,114,207,803
2014	158,797,631	129,971,981	450,561,553	6,567,842	807,673,694	5,039,297,432
2015	157,716,475	131,428,103	327,913,441	6,701,000	834,527,607	4,815,126,844
2016	157,444,029	130,390,848	361,858,504	7,056,784	867,397,200	4,590,366,241
2017	267,157,216***	134,764,920	359,129,908	6,473,006	888,173,535	4,456,771,744

\*Receivable amount to be paid the following year

\*\* Actuarial investment return, net of investment fees

\*\*\*Includes other OPEB income of \$5,393,581

**SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT I**

**Development of Unfunded Actuarial Accrued Liability**

	Year Ending December 31				
	2017	2016	2015	2014	2013
1. Unfunded actuarial accrued liability at beginning of year*	\$10,464,982,455	\$9,840,134,873	\$7,285,291,571	\$8,742,285,563	\$8,564,139,771
2. Normal cost at beginning of year*	246,761,737	255,682,691	233,177,207	253,748,078	265,457,853
3. Total contributions	-396,528,555	-287,834,877	-289,144,578	-288,769,612	-289,237,144
4. Interest					
(a) Unfunded actuarial accrued liability and normal cost	\$803,380,814	\$757,186,317	\$563,885,158	\$674,702,523	\$662,219,822
(b) Total contributions	<u>-4,962,323</u>	<u>-4,801,261</u>	<u>-4,839,455</u>	<u>-10,633,094</u>	<u>-10,650,310</u>
(c) Total interest: (4a) + (4b)	<u>798,418,491</u>	<u>752,385,056</u>	<u>559,045,703</u>	<u>664,069,429</u>	<u>651,569,512</u>
5. Expected unfunded actuarial accrued liability: (1) + (2) + (3) + (4c)	\$11,113,634,128	\$10,560,367,743	\$7,788,369,903	\$9,371,333,458	\$9,191,929,992
6. Changes due to (gain)/loss from:					
(a) Investments	-\$33,329,605	-\$22,722,207	\$29,330,715	-\$86,701,165	-\$174,927,836
(b) Demographics and other	<u>-116,622,006</u>	<u>-72,663,081</u>	<u>-117,575,084</u>	<u>-8,634,360</u>	<u>-144,376,875</u>
(c) Total changes due to (gain)/loss: (6a) + (6b)	-149,951,611	-95,385,288	-88,244,369	-95,335,525	-319,304,711
7. Change due to plan provisions	0	0	2,140,009,339	-1,990,706,362	-130,339,718
8. Change in actuarial assumptions	<u>861,941,934</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
9. Unfunded actuarial accrued liability at end of year*: (5) + (6c) + (7) + (8)	<u>\$11,825,624,451</u>	<u>\$10,464,982,455</u>	<u>\$9,840,134,873</u>	<u>\$7,285,291,571</u>	<u>\$8,742,285,563</u>

\* Includes pension and OPEB liabilities for years ended December 31, 2016 and earlier

### SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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#### EXHIBIT J

#### Definitions of Terms

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

**Actuarial Accrued Liability**

**For Actives:**

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

**Actuarial Accrued Liability**

**For Pensioners:**

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

**Actuarial Cost Method:**

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

**Actuarial Gain or Actuarial Loss:**

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

**Actuarially Equivalent:**

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

### SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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

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

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

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

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

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

### SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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**Actuarially Determined Contribution (ADC):**

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

**Amortization Method:**

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

**Amortization Payment:**

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

**Assumptions or Actuarial Assumptions:**

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

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Withdrawal rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

**Closed Amortization Period:**

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

**Decrements:**

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

### SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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<b>Defined Benefit Plan:</b>	A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.
<b>Defined Contribution Plan:</b>	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
<b>Employer Normal Cost:</b>	The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.
<b>Experience Study:</b>	A periodic review and analysis of the actual experience of the Fund that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.
<b>Funded Ratio:</b>	The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA, as another measure of the Plan's health.
<b>GASB:</b>	Governmental Accounting Standards Board.
<b>GASB 67 and GASB 68:</b>	Governmental Accounting Standards Board Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves. Governmental Accounting Standards Board Statements No. 67 and No. 68 are the successor statements to GASB Statements No. 25 and No. 27.
<b>Investment Return:</b>	The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.
<b>Net Pension Liability (NPL):</b>	The Net Pension Liability is equal to the Total Pension Liability minus the Plan Fiduciary Net Position.

### SECTION 3: Supplemental Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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



**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT I**

**Summary of Actuarial Valuation Results**

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

1. Pensioners as of the valuation date (including 4,245 beneficiaries and 1 deferred retiree)		25,383
2. Members inactive during year ended December 31, 2017 with vested rights		1,933
3. Members active during the year ended December 31, 2017		30,922
Fully vested	15,320	
Not vested	15,602	
4. Other non-vested inactive members as of the valuation date		15,616

**Determination of Actuarial Accrued Liability:**

	<b>Actuarial Present Value of Projected Benefits</b>	<b>Actuarial Present Value of Future Normal Costs</b>	<b>Actuarial Accrued Liability</b>
1. Active members			
a. Retirement benefits	\$6,743,323,161	\$1,165,647,874	\$5,577,675,287
b. Death benefits	112,277,629	31,245,909	81,031,720
c. Withdrawal benefits	<u>685,092,902</u>	<u>471,889,615</u>	<u>213,203,287</u>
d. Total	\$7,540,693,692	\$1,668,783,398	\$5,871,910,294
2. Inactive vested members	\$375,138,952	--	\$375,138,952
3. Inactive non-vested members	130,346,560	--	130,346,560
4. Retirees and beneficiaries	<u>9,905,000,389</u>	<u>--</u>	<u>9,905,000,389</u>
5. Total	\$17,951,179,593	\$1,668,783,398	\$16,282,396,195

**Determination of Unfunded Actuarial Accrued Liability:**

1. Actuarial accrued liability	\$16,282,396,195
2. Actuarial value of assets (\$4,554,018,287 at market value)	4,456,771,744
3. Unfunded actuarial accrued liability	\$11,825,624,451

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT I (continued)**

**Summary of Actuarial Valuation Results**

Components of normal cost:	Tier 1		Tier 2		Tier 3		Total	
	<u>% of Payroll</u>	<u>Amount</u>	<u>% of Payroll</u>	<u>Amount</u>	<u>% of Payroll</u>	<u>Amount</u>	<u>% of Payroll</u>	<u>Amount</u>
1. Retirement	9.77%	\$119,012,736	5.48%	\$23,797,958	7.27%	\$6,129,034	8.58%	\$148,939,728
2. Turnover	3.51%	42,683,061	2.76%	11,985,360	3.33%	2,803,943	3.31%	57,472,364
3. Mortality	0.23%	2,813,598	0.25%	1,077,865	0.24%	205,531	0.24%	4,096,994
4. Disability	<u>0.75%</u>	<u>9,132,000</u>	<u>0.75%</u>	<u>3,254,931</u>	<u>0.75%</u>	<u>632,348</u>	<u>0.75%</u>	<u>13,019,279</u>
5. Total normal cost: (1) + (2) + (3) + (4)	14.26%	\$173,641,395	9.24%	\$40,116,114	11.59%	\$9,770,856	12.88%	\$223,528,365
6. Total normal cost, adjusted for timing*	14.75%	179,616,056	9.56%	41,496,431	11.99%	10,107,052	13.32%	231,219,539
7. Administrative expenses	<u>0.37%</u>	<u>4,540,304</u>	<u>0.37%</u>	<u>1,618,307</u>	<u>0.37%</u>	<u>314,395</u>	<u>0.37%</u>	<u>6,473,006</u>
8. Total normal cost, including administrative expenses: (6) + (7)	15.12%	\$184,156,360	9.93%	\$43,114,738	12.36%	\$10,421,447	13.69%	\$237,692,545
9. Expected employee contributions**							<u>-8.29%</u>	<u>-143,985,711</u>
10. Employer normal cost: (8) + (9)							5.40%	\$93,706,834
11. Employer normal cost, adjusted for timing***							5.58%	96,931,103

\* Reflects timing adjustment to the middle of the year

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

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

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT II**

**Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a) / (b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)</b>
12/31/2008	\$6,669,501,770	\$10,383,157,695	\$3,713,655,925	64.23%	\$1,543,976,553	240.53%
12/31/2009	6,295,788,191	10,830,119,369	4,534,331,178	58.13%	1,551,973,348	292.17%
12/31/2010	6,003,389,605	11,828,665,658	5,825,276,053	50.75%	1,541,388,065	377.92%
12/31/2011	5,552,291,417	12,292,930,124	6,740,638,707	45.17%	1,605,993,339	419.72%
12/31/2012	5,073,320,275	13,475,376,963	8,402,056,688	37.65%	1,590,793,702	528.17%
12/31/2013	5,114,207,803	13,828,920,032	8,714,712,229	36.98%	1,580,288,709	551.46%
12/31/2014	5,039,297,432	12,307,094,062	7,267,796,630	40.94%	1,602,977,593	453.39%
12/31/2015	4,815,126,844	14,647,114,971	9,831,988,127	32.87%	1,643,480,973	598.24%
12/31/2016	4,590,366,241	15,055,348,696	10,464,982,455	30.49%	1,646,939,238	635.42%
12/31/2017	4,456,771,744	16,282,396,195	11,825,624,451	27.37%	1,686,532,720	701.18%

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT III  
Solvency Test**

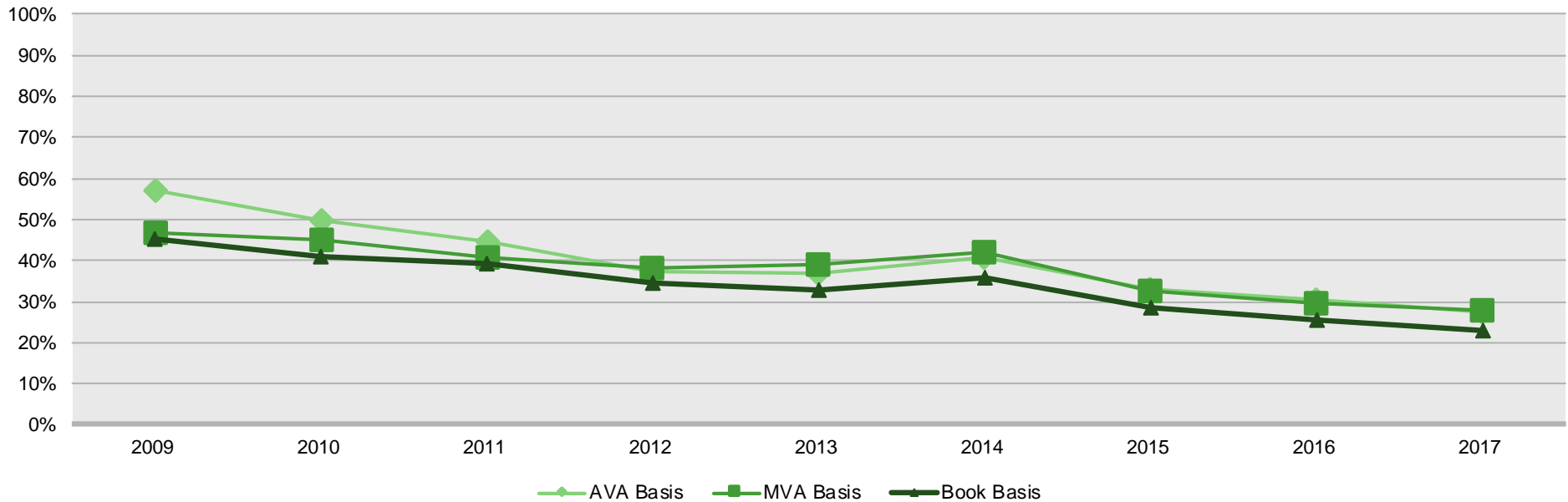
Actuarial Valuation Date	(1) Active and Inactive Member Contribution	(2) Retirees and Beneficiaries	(3) Active and Inactive Members (ER Financed Portion)	Actuarial Value of Assets	Portion (%) of Present Value Covered By Assets		
					(1)	(2)	(3)
12/31/2008	\$1,536,221,953	\$5,701,015,809	\$3,368,610,969	\$6,669,501,770	100.00%	90.04%	0.00%
12/31/2009	1,610,503,053	5,874,606,230	3,569,183,317	6,295,788,191	100.00%	79.75%	0.00%
12/31/2010	1,682,418,161	6,438,552,003	3,931,259,712	6,003,389,605	100.00%	67.11%	0.00%
12/31/2011	1,724,683,910	6,803,140,300	3,928,347,812	5,552,291,417	100.00%	56.26%	0.00%
12/31/2012	1,724,021,890	7,633,045,219	4,280,392,937	5,073,320,275	100.00%	43.88%	0.00%
12/31/2013	1,763,193,047	7,938,850,949	4,154,449,370	5,114,207,803	100.00%	42.21%	0.00%
12/31/2014	1,816,477,893	7,029,523,772	3,478,587,338	5,039,297,432	100.00%	45.85%	0.00%
12/31/2015	1,874,982,804	8,427,968,220	4,352,310,693	4,815,126,844	100.00%	34.89%	0.00%
12/31/2016	1,918,150,355	8,725,032,932	4,412,165,409	4,590,366,241	100.00%	30.63%	0.00%
12/31/2017	1,952,652,300	9,905,000,389	4,424,743,506	4,456,771,744	100.00%	25.28%	0.00%

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT IV  
Funded Ratio**

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

The chart below depicts a history of the funded ratios for this plan using the actuarial value of assets, the market value of assets and the book value of assets.



**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT V**

**Statutory Reserves as of December 31, 2017**

The table below shows the statutory reserves as of December 31, 2017 as required by State statutes. The “New in 2017” columns on the left show the Reserves for members who started receiving a pension benefit during the year and the middle columns “Continuing from 2016” show the Reserves for members who were included in this exhibit last year that continued to receive a pension benefit during 2017.

	New in 2017			Continuing from 2016			Total		
	Annuity Payment Fund	Prior Service Fund	Total	Annuity Payment Fund	Prior Service Fund	Total	Annuity Payment Fund	Prior Service Fund	Total
<b>Statutory Reserve*</b>									
Retirees	\$179,954,898	\$400,660,063	\$580,614,961	\$1,545,609,444	\$5,752,321,437	\$7,297,930,881	\$1,725,564,342	\$6,152,981,500	\$7,878,545,842
Future Surviving Spouses	34,753,893	18,126,618	52,880,511	359,218,805	453,828,590	813,047,395	393,972,698	471,955,208	865,927,906
Spouses**	19,427,301	17,993,921	37,421,222	179,105,376	158,349,611	337,454,987	198,532,677	176,343,532	374,876,209
<b>Annual Benefits</b>									
Retirees	\$16,462,606	\$23,814,798	\$40,277,404	\$192,087,032	\$578,696,981	\$770,784,013	\$208,549,638	\$602,511,779	\$811,061,417
Future Surviving Spouses	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Spouses**	2,461,861	2,570,593	5,032,454	27,965,417	27,201,171	55,166,588	30,427,278	29,771,764	60,199,042

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

\*\* Surviving spouses also include reversionary annuitants.

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT VI**

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

	<b>2017</b>	<b>2016</b>
<b>Projected Unit Credit Accrued Liability (PUCAL)</b>		
Payable to Retirees and Beneficiaries	\$9,905,000,389	\$8,725,032,932
Current Active and Inactive Employees:		
Accumulated Active and Inactive Employee Contributions	1,952,652,300	1,918,150,355
Payable to Vested and Non-Vested Employees	<u>2,878,566,198</u>	<u>2,492,004,314</u>
Total PUCAL	\$14,736,218,887	\$13,135,187,601
 <b>Net Assets Available for Benefits, Actuarial Value</b>	 \$4,456,771,744	 \$4,590,366,241
 <b>Unfunded PUCAL (PUCAL in excess of assets)</b>	 \$10,279,447,143	 \$8,544,821,360
Percent Funded	30.24%	34.95%
Unfunded PUCAL as Percent of Payroll	609.50%	518.83%
 <b>Payroll</b>	 \$1,686,532,720	 \$1,646,939,238

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT VII**

**Actuarial Reserve Liabilities as of December 31, 2017**

	<b>2017</b>	<b>2017</b>	<b>2016</b>
	<b>New Assumptions</b>	<b>Old Assumptions</b>	
<b>Accrued Liability for Active and Inactive Participants*</b>	\$6,377,395,806	\$6,380,048,684	\$6,330,315,764
<b>Reserves for:</b>			
Service Retirement Pension	\$8,811,148,340	\$8,046,795,652	\$7,756,558,336
Future Spouses of Current Retirees	649,791,536	579,809,577	559,423,903
Surviving Spouse Pension	443,026,241	412,771,554	408,038,420
Child Annuitants	<u>1,034,272</u>	<u>1,028,794</u>	<u>1,012,273</u>
<b>Total Accrued Liability</b>	16,282,396,195	15,420,454,261	15,055,348,696
<b>Actuarial Net Assets</b>	<u>4,456,771,744</u>	<u>4,456,771,744</u>	<u>4,590,366,241</u>
<b>Unfunded Actuarial Liabilities</b>	\$11,825,624,451	\$10,963,682,517	\$10,464,982,455

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



## **SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

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### **EXHIBIT VIII**

#### **50-Year Projection of Contributions, Liabilities, and Assets**

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Based on the results of the December 31, 2017, actuarial valuation, we have projected valuation results for a 50-year period.

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

In order to determine projected contributions, liabilities, and assets, certain calculations need to be made that are not normally required in a regular actuarial valuation. Benefit payout requirements, actuarial liabilities, and payroll were estimated over the 50-year period from 2018 through 2066 by projecting the membership of the Fund over the 50-year period, taking into account the impact of new entrants into the Fund over the 50-year period.

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

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT VIII (continued)**

**50-Year Projection of Contributions, Liabilities, and Assets**

Based on the December 31, 2017 actuarial valuation.  
 (All dollar amounts are in thousands. Employer Contributions are shown on a cash basis in the fiscal year they are actually paid, not receivable.  
 Actuarial Liability and asset figures as of end of year.)

Fiscal Year	Employee Contributions	Employer Contributions (Cash Basis)	Pensionable Payroll	Normal Cost	Benefit Payouts	Estimated Expenses	Total Actuarial Liability	Market Value of Assets	Actuarial Value of Assets	Unfunded Actuarial Liability	Funded Ratio
2017	\$134,765	\$161,461	\$1,686,533	\$239,956	\$888,174	\$6,473	\$16,282,396	\$4,554,018	\$4,456,772	\$11,825,624	27.4%
2018	143,986	266,000	1,735,904	223,528	939,862	6,635	16,688,126	4,386,200	4,270,624	12,417,503	25.6%
2019	148,042	344,000	1,744,619	223,679	975,004	6,801	17,086,045	4,251,290	4,138,111	12,947,934	24.2%
2020	151,889	421,000	1,755,720	223,989	1,015,209	6,971	17,470,534	4,147,129	4,085,911	13,384,623	23.4%
2021	155,691	499,000	1,768,190	224,345	1,056,750	7,145	17,839,320	4,073,436	4,073,436	13,765,884	22.8%
2022	159,474	576,000	1,781,964	224,794	1,099,384	7,324	18,190,271	4,231,677	4,231,677	13,958,594	23.3%
2023	165,053	853,487	1,818,502	228,170	1,141,466	7,507	18,525,838	4,380,524	4,380,524	14,145,313	23.6%
2024	170,690	870,987	1,855,860	231,672	1,184,076	7,694	18,844,529	4,519,223	4,519,223	14,325,306	24.0%
2025	176,335	888,880	1,892,988	235,114	1,227,838	7,887	19,143,909	4,645,762	4,645,762	14,498,146	24.3%
2026	182,036	906,663	1,930,630	238,600	1,271,524	8,084	19,422,750	4,759,670	4,759,670	14,663,080	24.5%
2027	187,806	924,691	1,968,843	242,147	1,315,924	8,286	19,678,942	4,859,664	4,859,664	14,819,278	24.7%
2028	193,686	942,994	2,007,869	245,782	1,359,279	8,493	19,912,074	4,946,347	4,946,347	14,965,727	24.8%
2029	199,665	961,686	2,048,389	249,635	1,401,768	8,705	20,121,661	5,020,497	5,020,497	15,101,163	25.0%
2030	205,695	981,093	2,089,625	253,522	1,444,357	8,923	20,305,988	5,081,525	5,081,525	15,224,463	25.0%
2031	211,819	1,000,843	2,131,863	257,523	1,485,793	9,146	20,464,602	5,130,277	5,130,277	15,334,325	25.1%
2032	218,063	1,021,074	2,175,677	261,726	1,525,360	9,375	20,597,852	5,168,700	5,168,700	15,429,152	25.1%
2033	224,523	1,042,059	2,222,199	266,273	1,562,001	9,609	20,707,360	5,200,614	5,200,614	15,506,745	25.1%
2034	231,189	1,064,341	2,271,404	271,213	1,597,486	9,849	20,793,078	5,228,253	5,228,253	15,564,825	25.1%
2035	237,911	1,087,908	2,321,509	276,246	1,630,853	10,096	20,855,635	5,253,993	5,253,993	15,601,642	25.2%
2036	244,801	1,111,906	2,373,585	281,508	1,661,139	10,348	20,896,841	5,282,002	5,282,002	15,614,840	25.3%
2037	251,887	1,136,849	2,428,058	287,094	1,689,164	10,607	20,917,888	5,316,120	5,316,120	15,601,768	25.4%
2038	259,166	1,162,939	2,484,850	292,977	1,701,759	10,872	20,933,654	5,374,053	5,374,053	15,559,601	25.7%
2039	266,702	1,190,140	2,544,611	299,353	1,723,940	11,144	20,934,371	5,449,224	5,449,224	15,485,147	26.0%
2040	274,351	1,218,763	2,605,936	305,931	1,743,801	11,422	20,921,605	5,546,102	5,546,102	15,375,503	26.5%
2041	282,201	1,248,135	2,669,479	312,815	1,760,342	11,708	20,898,175	5,670,904	5,670,904	15,227,271	27.1%

## SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

### EXHIBIT VIII (continued)

#### 50-Year Projection of Contributions, Liabilities, and Assets

Based on the December 31, 2017 actuarial valuation.

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

Fiscal Year	Employee Contributions	Employer Contributions (Cash Basis)	Pensionable Payroll	Normal Cost	Benefit Payouts	Estimated Expenses	Total Actuarial Liability	Market Value of Assets	Actuarial Value of Assets	Unfunded Actuarial Liability	Funded Ratio
2042	\$290,293	\$1,278,569	\$2,736,092	\$320,157	\$1,773,553	\$12,001	\$20,867,270	5,830,747	5,830,747	\$15,036,523	27.9%
2043	298,650	1,310,474	2,805,618	327,928	1,783,040	12,301	20,832,679	6,033,599	6,033,599	14,799,080	29.0%
2044	307,272	1,343,775	2,878,234	336,223	1,791,899	12,608	20,795,354	6,284,866	6,284,866	14,510,487	30.2%
2045	315,925	1,378,554	2,951,572	344,650	1,798,663	12,923	20,757,413	6,590,478	6,590,478	14,166,935	31.7%
2046	324,762	1,413,680	3,026,860	353,364	1,804,013	13,246	20,720,583	6,956,816	6,956,816	13,763,768	33.6%
2047	333,799	1,449,740	3,104,243	362,404	1,807,521	13,578	20,687,197	7,391,241	7,391,241	13,295,956	35.7%
2048	343,068	1,486,803	3,184,019	371,805	1,809,863	13,917	20,659,088	7,901,104	7,901,104	12,757,984	38.2%
2049	352,548	1,525,013	3,266,009	381,626	1,814,353	14,265	20,634,851	8,490,731	8,490,731	12,144,120	41.1%
2050	362,079	1,564,282	3,348,776	391,628	1,818,042	14,622	20,615,780	9,166,952	9,166,952	11,448,828	44.5%
2051	371,794	1,603,925	3,433,337	401,926	1,822,012	14,987	20,602,262	9,936,578	9,936,578	10,665,684	48.2%
2052	381,691	1,644,426	3,519,775	412,528	1,824,914	15,362	20,596,114	10,808,328	10,808,328	9,787,786	52.5%
2053	391,845	1,685,826	3,608,839	423,494	1,827,747	15,746	20,598,316	11,790,940	11,790,940	8,807,376	57.2%
2054	402,232	1,728,484	3,700,245	434,835	1,835,162	16,139	20,605,107	12,888,782	12,888,782	7,716,325	62.6%
2055	412,661	1,772,263	3,792,367	446,366	1,841,523	16,543	20,618,104	14,111,389	14,111,389	6,506,715	68.4%
2056	423,302	1,816,386	3,886,827	458,183	1,848,328	16,957	20,637,588	15,468,364	15,468,364	5,169,225	75.0%
2057	434,157	1,861,629	3,983,639	470,276	1,855,319	17,380	20,664,114	16,970,255	16,970,255	3,693,859	82.1%
2058	445,250	1,907,997	4,083,084	482,659	1,862,982	17,815	20,697,789	18,628,010	18,628,010	2,069,779	90.0%
2059	456,579	1,955,628	4,185,077	495,339	1,873,362	18,260	20,736,618	18,662,956	18,662,956	2,073,662	90.0%
2060	468,120	216,256	4,289,272	508,337	1,884,248	18,717	20,780,780	18,702,702	18,702,702	2,078,078	90.0%
2061	479,904	218,403	4,396,000	521,630	1,896,785	19,185	20,829,252	18,746,327	18,746,327	2,082,925	90.0%
2062	491,946	220,764	4,505,315	535,239	1,910,839	19,664	20,881,105	18,792,994	18,792,994	2,088,111	90.0%
2063	504,271	223,332	4,617,420	549,189	1,926,477	20,156	20,935,299	18,841,769	18,841,769	2,093,530	90.0%
2064	516,889	226,110	4,732,379	563,487	1,943,872	20,660	20,990,552	18,891,496	18,891,496	2,099,055	90.0%
2065	529,803	229,114	4,850,189	578,146	1,963,331	21,176	21,045,186	18,940,667	18,940,667	2,104,519	90.0%
2066	543,016	232,385	4,970,860	593,156	1,984,766	21,706	21,097,488	18,987,739	18,987,739	2,109,749	90.0%

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT IX**

**Development of City Contribution Requirements**

	Fiscal Year 2018	Projected Fiscal Year 2019	Projected Fiscal Year 2020	Projected Fiscal Year 2021	Projected Fiscal Year 2022	Projected Fiscal Year 2023
Preliminary Determination of City Contribution						
Projected Payroll	\$1,735,903,811	\$1,744,618,643	\$1,755,719,869	\$1,768,189,650	\$1,781,963,688	\$1,818,501,874
Statutory Contribution Rate	N/A	N/A	N/A	N/A	47.90%	47.90%
Statutory City Contribution*	\$344,000,000	\$421,000,000	\$499,000,000	\$576,000,000	\$853,486,553	\$870,986,825
Actuarially Determined Contribution	\$1,049,915,647	\$1,093,746,251	\$1,133,015,512	\$1,164,830,755	\$1,192,301,479	\$1,205,858,369
Actuarial Accrued Liability at the Beginning of the Year	\$16,282,396,195	\$16,688,126,323	\$17,086,045,252	\$17,470,534,272	\$17,839,319,930	\$18,190,271,255
Actuarial Value of Assets at the Beginning of the Year	\$4,456,771,744	\$4,270,623,603	\$4,138,110,769	\$4,085,910,845	\$4,073,436,135	\$4,231,676,795
Funded Ratio	27.37%	25.59%	24.22%	23.39%	22.83%	23.26%

*\* Per Public Act 100-0023, city contributions are a specified amount for payment years 2018 through 2022, and a level percent of payroll sufficient to bring the total assets of the Fund up to 90% of the actuarial accrued liability by the end of 2058 for all years thereafter. The city contributions are shown in the year that they will be booked. The contributions will be paid to the Fund in the following year.*

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT X.1**

**Comparison of Employer Contribution to Actuarially Determined Contribution**

<b>Plan Year Ended December 31</b>	<b>Actuarially Determined Contributions (ADC)*</b>	<b>Actual Contributions**</b>	<b>Percentage Contributed</b>
2008	\$384,169,836	\$155,832,612	40.6%
2009	436,475,587	157,697,608	36.1%
2010	506,902,840	164,302,004	32.4%
2011	634,559,144	156,525,374	24.7%
2012	705,454,416	158,380,709	22.5%
2013	834,398,482	157,704,971	18.9%
2014	848,864,496	158,797,631	18.7%
2015	686,373,727	157,716,475	23.0%
2016	970,112,414	157,444,029	16.2%
2017	1,005,456,621	261,763,635	26.0%
2018	1,049,915,647	--	--

\* Prior to 2015, this amount was the Annual Required Contribution (ARC). Includes pension and OPEB.

\*\*Receivable amount to be paid the following year.

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT X.2**

**History of Active Member Valuation Data**

<b>Actuarial Valuation Date</b>	<b>Active Members</b>	<b>Percent Increase</b>	<b>Annual Salaries</b>	<b>Percent Increase</b>	<b>Average Salary</b>	<b>Percent Increase</b>	<b>CPI Chicago*</b>
12/31/2008	32,563	(6.66)%	\$1,543,976,553	(1.31)%	\$47,415	5.73%	(0.58)%
12/31/2009	31,586	(3.00)%	1,551,973,348	0.52%	49,135	3.63%	2.54%
12/31/2010	30,726	(2.72)%	1,541,388,065	(0.68)%	50,166	2.10%	1.23%
12/31/2011	31,976	4.07%	1,605,993,339	4.19%	50,225	0.12%	2.06%
12/31/2012	31,326	(2.03)%	1,590,793,702	(0.95)%	50,782	1.11%	1.68%
12/31/2013	30,647	(2.17)%	1,580,288,709	(0.66)%	51,564	1.54%	0.51%
12/31/2014	30,160	(1.59)%	1,602,977,593	1.44%	53,149	3.07%	1.48%
12/31/2015	30,683	1.73%	1,643,480,973	2.53%	53,563	0.78%	0.00%
12/31/2016	30,296	(1.26)%	1,646,939,238	0.21%	54,362	1.49%	1.86%
12/31/2017	30,922	2.07%	1,686,532,720	2.40%	54,542	0.33%	1.66%
Average Increase/ (Decrease) Last 5 years		(0.26)%		1.18%		1.44%	1.10%

\* CPI-Chicago as of the valuation date

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT X.3**

**History of Average Pension Benefit Payments to New Retirees<sup>1</sup>**

Retirement Effective Date	Years of Service					Total	
	10 – 14	15 – 19	20 – 24	25 – 29	30 & Over		
2008	Average Monthly Benefit at Retirement	\$1,293	\$1,630	\$2,031	\$2,765	\$4,129	\$2,847
	Average Final Average Salary	\$3,980	\$3,565	\$3,981	\$4,199	\$5,285	\$4,491
	Number of Active Recipients	60	65	106	63	206	500
2009	Average Monthly Benefit at Retirement	\$1,407	\$1,790	\$2,275	\$3,255	\$4,082	\$2,969
	Average Final Average Salary	\$4,664	\$4,148	\$4,406	\$5,005	\$5,209	\$4,794
	Number of Active Recipients	57	75	153	92	231	608
2010	Average Monthly Benefit at Retirement	\$1,334	\$1,835	\$2,215	\$3,208	\$4,354	\$3,129
	Average Final Average Salary	\$4,418	\$4,311	\$4,278	\$4,945	\$5,590	\$4,933
	Number of Active Recipients	60	77	169	132	287	725
2011	Average Monthly Benefit at Retirement	\$1,350	\$1,981	\$2,432	\$3,459	\$4,696	\$3,361
	Average Final Average Salary	\$4,261	\$4,506	\$4,661	\$5,265	\$6,046	\$5,257
	Number of Active Recipients	66	88	193	185	311	843
2012	Average Monthly Benefit at Retirement	\$1,295	\$2,014	\$2,391	\$3,362	\$4,506	\$3,230
	Average Final Average Salary	\$4,400	\$4,893	\$4,533	\$5,094	\$5,737	\$5,125
	Number of Active Recipients	93	132	274	254	418	1,171
2013	Average Monthly Benefit at Retirement	\$1,304	\$1,998	\$2,348	\$3,259	\$4,446	\$3,065
	Average Final Average Salary	\$4,456	\$4,890	\$4,314	\$4,953	\$5,668	\$5,030
	Number of Active Recipients	104	106	204	216	290	920
2014	Average Monthly Benefit at Retirement	\$1,169	\$1,760	\$2,290	\$3,137	\$4,350	\$2,891
	Average Final Average Salary	\$4,161	\$4,528	\$4,597	\$4,877	\$5,644	\$4,921
	Number of Active Recipients	93	92	185	203	223	796
2015	Average Monthly Benefit at Retirement	\$1,275	\$1,959	\$2,279	\$3,405	\$4,446	\$3,048
	Average Final Average Salary	\$4,439	\$4,685	\$4,387	\$5,174	\$5,724	\$5,031
	Number of Active Recipients	68	119	171	180	227	765
2016	Average Monthly Benefit at Retirement	\$1,347	\$1,909	\$2,350	\$3,383	\$4,795	\$3,126
	Average Final Average Salary	\$5,096	\$4,836	\$4,604	\$5,199	\$6,276	\$5,306
	Number of Active Recipients	83	113	208	199	237	840
2017	Average Monthly Benefit at Retirement	\$1,306	\$1,938	\$2,480	\$3,687	\$4,889	\$3,273
	Average Final Average Salary	\$4,734	\$4,860	\$4,841	\$5,526	\$6,293	\$5,434
	Number of Active Recipients	91	122	197	247	245	902

<sup>1</sup> This schedule excludes reciprocal annuities, money purchase annuities and minimum annuities.

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT X.4**

**History of Retirees and Beneficiaries by Type of Benefit**

Valuation Date	Annuitants				Disability		Compensation	Reciprocal	
	Employee	Spouse	Child	Reversionary*	Ordinary	Duty	Annuitants**	Employee	Spouse
12/31/2008	15,804	4,018	174		266	192	2	2,369	360
12/31/2009	15,838	4,008	167		306	220	2	2,407	356
12/31/2010	15,961	3,982	173		304	246	2	2,477	364
12/31/2011	16,230	3,910	164	129	346	264	2	2,583	364
12/31/2012	16,874	3,864	149	129	280	250	2	2,740	361
12/31/2013	17,320	3,844	141	138	227	213	2	2,793	363
12/31/2014	17,553	3,798	141	139	195	225	2	2,858	363
12/31/2015	17,697	3,757	118	134	187	213	2	2,887	369
12/31/2016	17,954	3,706	102	128	178	216	2	2,965	379
12/31/2017	18,113	3,633	114	124	162	211	2	3,024	374

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

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



**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT X.5**

**History of Average Employee Retirement Benefits Payable**

<b>Valuation Date</b>	<b>Average Annual Benefit</b>	<b>Average Current Age of Retirees</b>	<b>Average Benefit at Retirement Current Year</b>	<b>Average Age at Retirement Current Year</b>	<b>Average Service Years at Retirement Current Year</b>
12/31/2008	\$28,928	72.6	\$27,750	62.4	24.30
12/31/2009	29,960	72.8	29,843	62.9	23.90
12/31/2010	31,046	72.8	31,290	62.2	24.25
12/31/2011	32,269	72.7	34,513	62.1	24.86
12/31/2012	33,423	72.6	33,508	62.7	24.81
12/31/2013	34,357	72.6	31,177	63.0	23.55
12/31/2014	34,532	72.7	29,775	62.5	23.35
12/31/2015	36,277	72.8	31,686	62.6	23.48
12/31/2016	37,243	72.9	32,000	62.0	23.50
12/31/2017	38,372	72.9	34,413	62.0	24.16

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT X.6**

**History of Annuities 2008 – 2017**

<b>Employee Annuitants (Male and Female)</b>			
<b>Valuation Date</b>	<b>Number of Annuitants</b>	<b>Total Annuities</b>	<b>Average Annuities</b>
12/31/2008	18,173	\$525,707,352	\$28,928
12/31/2009	18,245	546,628,095	29,960
12/31/2010	18,438	572,425,992	31,046
12/31/2011	18,813	607,077,636	32,269
12/31/2012	19,614	655,556,736	33,423
12/31/2013	20,113	691,021,680	34,357
12/31/2014	20,411	704,832,876	34,532
12/31/2015	20,584	746,717,052	36,277
12/31/2016	20,919	779,089,612	37,243
12/31/2017	21,137	811,061,417	38,372
<b>Surviving Spouse and Reversionary Annuities</b>			
<b>Valuation Date</b>	<b>Number of Annuitants</b>	<b>Total Annuities</b>	<b>Average Annuities</b>
12/31/2008	4,378	\$51,954,588	\$11,867
12/31/2009	4,364	52,884,192	12,118
12/31/2010	4,346	53,920,752	12,407
12/31/2011	4,403	54,594,060	12,399
12/31/2012	4,354	55,544,340	12,757
12/31/2013	4,345	57,041,916	13,128
12/31/2014	4,300	57,976,668	13,483
12/31/2015	4,260	58,481,052	13,728
12/31/2016	4,213	59,799,086	14,194
12/31/2017	4,131	60,199,042	14,573

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT X.7**

**History of Retirees and Beneficiaries Added to Payrolls 2008 – 2017**

Valuation Date	Added to Payroll		Removed from Payroll		Payroll End of Year		Average Annual Benefit	Increase in Average Benefit
	Number	Annual Benefits*	Number	Annual Benefits	Number	Annual Benefits		
<b>Employee Annuitants (Male and Female)</b>								
12/31/2008	743	\$34,658,424	768	\$17,767,068	18,173	\$525,707,352	\$28,928	3.46%
12/31/2009	840	39,821,463	768	18,900,720	18,245	546,628,095	29,960	3.57%
12/31/2010	1,008	46,836,109	815	21,038,211	18,438	572,425,992	31,406	3.62%
12/31/2011	1,149	55,405,692	774	20,754,048	18,813	607,077,636	32,269	3.94%
12/31/2012	1,559	68,828,940	758	20,349,840	19,614	655,556,736	33,423	3.58%
12/31/2013	1,242	57,147,576	743	21,682,632	20,113	691,021,680	34,357	2.79%
12/31/2014	1,054	37,110,852	756	23,299,656	20,411	704,832,876	34,532	0.51%
12/31/2015	990	65,756,124	817	23,871,948	20,584	746,717,052	36,277	5.05%
12/31/2016	1,107	58,094,440	772	25,721,880	20,919	779,089,612	37,243	2.66%
12/31/2017	1,148	62,453,527	930	30,481,722	21,137	811,061,417	38,372	3.03%
<b>Surviving Spouse and Reversionary Annuitants</b>								
12/31/2008	260	\$3,989,592	260	\$3,142,752	4,378	\$51,954,588	\$11,867	2.40%
12/31/2009	266	3,869,064	280	2,939,460	4,364	52,884,192	12,118	2.12%
12/31/2010	269	4,329,156	287	3,292,596	4,346	53,920,752	12,407	2.38%
12/31/2011**	362	4,152,804	241	3,479,496	4,403	54,594,060	12,399	(0.06)%
12/31/2012	237	4,168,092	286	3,217,812	4,354	55,544,340	12,757	2.89%
12/31/2013	270	4,593,708	279	3,096,132	4,345	57,041,916	13,128	2.91%
12/31/2014	265	4,648,596	310	3,713,844	4,300	57,976,668	13,483	2.70%
12/31/2015	251	4,185,900	291	3,681,516	4,260	58,481,052	13,728	1.82%
12/31/2016	235	4,862,474	282	3,544,440	4,213	59,799,086	14,194	3.39%
12/31/2017	261	5,053,290	343	4,653,334	4,131	60,199,042	14,573	2.67%

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

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

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

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**EXHIBIT XI**

**Actuarial Assumptions and Actuarial Cost Method**

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**Rationale for Assumptions:**

The information and analysis used in supporting each assumption that has a significant effect on this actuarial valuation is shown in the Experience Review dated September 21, 2017, with a follow-up report dated March 12, 2018. Current data is reviewed in conjunction with each annual valuation.

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**Mortality Rates:**

*Post-retirement:*

The RP-2014 Healthy Annuitant Mortality Table, set forward two years for males and one year for females, projected generationally using scale MP-2016 (effective December 31, 2017).

*Pre-retirement:*

120% of the RP-2014 Employee Mortality Tables, projected generationally using scale MP-2016 (effective December 31, 2017).

The mortality tables specified above were determined to reasonably reflect the mortality experience of the Plan as of the valuation date. The mortality table was then adjusted to future years using generational projection under scale MP-2016 to reflect future mortality improvements.

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**Termination Rates:**

These service-based rates are based on recent experience of the Fund (effective December 31, 2017).

<u>Service</u>	<u>Rate (%)</u>	<u>Service</u>	<u>Rate (%)</u>
0 - 0.99	17.00	12 - 12.99	4.25
1 - 1.99	16.00	13 - 13.99	4.00
2 - 2.99	14.00	14 - 14.99	3.75
3 - 3.99	12.00	15 - 15.99	3.50
4 - 4.99	10.00	16 - 16.99	3.25
5 - 5.99	8.00	17 - 17.99	3.00
6 - 6.99	7.00	18 - 18.99	2.75
7 - 7.99	6.50	19 - 19.99	2.50
8 - 8.99	6.00	20 - 20.99	2.25
9 - 10.99	5.00	21+	2.00
11 - 11.99	4.50		

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**Retirement Rates:**

For employees first hired prior to January 1, 2011, rates of retirement are based on the recent experience of the Fund (effective December 31, 2017).

**Tier 1:**

<u>Service</u>	<u>Age and Service-Based Retirement Rates</u>							
	<u>50 - 54</u>	<u>55 - 59</u>	<u>60 - 64</u>	<u>65</u>	<u>66 - 67</u>	<u>68 - 69</u>	<u>70 - 79</u>	<u>80+</u>
10 - 11		0%	8%	40%	30%	30%	35%	100%
12 - 19		0%	8%	30%	15%	20%	22.5%	100%
20 - 24		8%	10%	30%	15%	20%	22.5%	100%
25 - 29		8%	10%	35%	22.5%	20%	22.5%	100%
30	20%	8%	15%	35%	22.5%	20%	22.5%	100%
31 - 32	20%	8%	15%	40%	22.5%	20%	30%	100%
33 - 34	25%	13%	15%	40%	22.5%	20%	30%	100%
35 - 39	25%	13%	15%	45%	22.5%	20%	30%	100%
40+	50%	50%	50%	50%	50%	50%	50%	100%

**Tier 2:**

For employees first hired on or after January 1, 2011 and before July 6, 2017, rates of retirement for each age from 62 to 80 were used (effective December 31, 2011).

<u>Age</u>	<u>Rate</u>
62	40%
63 - 69	20%
70 - 79	45%
80 +	100%

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

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**Tier 3:** For employees first hired on or after July 6, 2017, rates of retirement for each age from 62 to 80 were used (effective December 31, 2017).

<u>Age</u>	<u>Rate</u>
60	40%
61 – 69	20%
70 – 79	45%
80 +	100%

**Disability Benefit Valuation:** Disability benefits are valued in normal cost as 0.75% of projected payroll (effective December 31, 2005).

**Valuation of Inactive Participants:** Inactive members with less than 10 years of service are assumed to take an immediate refund of his or her account balance. For inactive members with 10 or more years of service, the money purchase benefit is estimated by projecting the account balance (including employer contributions, when applicable) to the earliest retirement age. This estimated money purchase benefit is increased by 15% to account for the possibility that the minimum annuity formula is more valuable. For inactive members with 10 or more service and salary information available, the minimum annuity benefit is valued, if it is more valuable than the money purchase benefit.

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**Unknown Data for Participants:** Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.

**Spouse:** 85% of members are assumed to be married, female spouses are assumed to be four years younger than male spouses, and 100% of spouses are assumed to be opposite gender (effective December 31, 1999).

**Member Contributions:** Based on payroll, adjusted to the middle of the year.

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**Net Investment Return:** 7.00% per year, net of investment expense (effective December 31, 2017)

**Inflation:** 2.50% per year (effective December 31, 2017)

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

**Salary Increases:**

These service-based rates are based on the recent experience of the Fund (effective December 31, 2017).

<b>Service</b>	<b>Rate for Years 2018 - 2022 (%)</b>	<b>Rate for 2023 and After (%)</b>
0 - 0.99	6.50	7.75
1 - 1.99	5.50	7.25
2 - 2.99	4.50	6.75
3 - 3.99	3.50	6.25
4 - 4.99	3.25	5.75
5 - 5.99	3.00	5.25
6 - 6.99	2.75	4.75
7 - 7.99	2.50	4.50
8 - 8.99	2.25	4.25
9 - 9.99	2.25	4.00
10 - 25.99	2.25	3.75
26+	1.50	3.50

**Administrative Expenses:**

Equal to actual expenses for the prior year. For purposes of the 50-year projection, future administrative expenses are assumed to increase by 2.5% each year

**Actuarial Value of Assets:**

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

**Actuarial Cost Method:**

Entry Age Normal. Under this method, a normal cost is calculated for each employee that is the level annual contribution as a percent of pay required to be made from the employee's date of hire for as long as he/she remains active so that sufficient assets will be accumulated to provide his/her benefit. The accrued liability is the difference between the present value of all future benefits and the present value of all future normal costs.



**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

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**EXHIBIT XII**

**Summary of Plan Provisions**

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

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<b>Membership:</b>	Any employee of the City of Chicago or the Board of Education employed under the provisions of the municipal personnel ordinance or any person employed by the Municipal Employees' Annuity and Benefit Fund of Chicago who is not participating in any other pension fund or retirement system is covered by the Fund. Current and former employees of the Chicago Housing Authority and the Public Building Commission who have service in this Plan or who reinstate service in this Plan, may elect to participate in this Plan with respect to their employment with the Chicago Housing Authority or the Public Building Commission under certain circumstances.
<b>Tiers:</b>	Tier 1: First hired before January 1, 2011 Tier 2: First hired from non-reciprocal Fund on or after January 1, 2011 and before July 6, 2017 Tier 3: First hired on or after July 6, 2017 or former Tier 2 members that elected to make a one-time irrevocable election to switch to Tier 3 ("elective" Tier 3)
<b>Employee Contributions:</b>	Tier 1 and Tier 2 members of the Fund are required to contribute 8.5% of pensionable salary to the Fund as follows: 6.5% for the employee's retirement annuity, 1.5% for the spouse's annuity, and 0.5% for the automatic increases in the retirement annuity. Tier 3 members of the Fund are required to contribute 11.5% of pensionable pay for 2017. Beginning in 2018, member contribution rate will be the normal cost rate, if less than 11.5%, but not lower than 8.5%. Elective Tier 3 members are required to contribute 10.5% of pensionable pay for 2018 and 11.5% of pensionable pay for each year thereafter, or normal cost rate if less, subject to an 8.5% floor.

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**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

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**Final Average Salary:**

For Tier 1 members, the final average salary is the average salary of the highest four consecutive years within the last 10 years of service prior to retirement.

For Tier 2 and Tier 3 members, the final average salary is the average pensionable salary of the highest eight consecutive years within the last 10 years of service prior to retirement. Pensionable salary is limited to \$106,800 in 2011, increased by the lesser of 3% or ½ of the change in CPI-U, not less than zero. For 2017, the salary limit was \$112,408.

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**Employee Retirement Annuity:**

Money Purchase Formula

Eligibility

Tier 1: Age 55 and 10 years of service  
Tier 2: Age 62 and 10 years of service  
Tier 3: Age 60 and 10 years of service

Amount

The annuity is based on all employee and City contributions. However, for Tier 1 members who retire before age 60 with less than 20 years of service, the annuity is based on employee contributions plus 1/10<sup>th</sup> of the City contributions for each year of service over 10.

Maximum is 60% of highest salary.

Minimum Annuity Formula

Eligibility

Tier 1, the earlier of:

- Age 60 and 10 years of service
- Age 55 and 20 years of service
- Age 50 and 30 years of service

Tier 2: Age 62 and 10 years of service  
Tier 3: Age 60 and 10 years of service

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

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Amount

The annuity is equal to 2.4% for each year of service times final average salary.

For Tier 1 members under age 60 with less than 25 years of service, the annuity is reduced by 0.25% for each month that the member is under age 60.

For Tier 2 members under age 67, the annuity is reduced by 0.50% for each month that the member is under age 67.

For Tier 3 members under age 65, the annuity is reduced by 0.50% for each month that the member is under age 65.

Maximum is 80% of final average salary.

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**Post-Retirement Increase:**

Tier 1:

An employee annuitant is eligible to receive an annual increase of 3% of the current payable annuity (compound). This increase begins in January of the year of the first payment date following the earlier of:

- 1) the later of the third anniversary of retirement or age 53, or
- 2) the later of the first anniversary of retirement or age 60

Tier 2 and Tier 3:

An employee annuitant or surviving spouse who is eligible to receive an increase in annuity benefit, shall receive an annual increase equal to the lesser of 3% or ½ of the annual unadjusted percentage increase in the Consumer Price Index-U. The increase is based on the amount of the originally granted benefit (simple). This increase begins in January of the year of the first payment date following the later of:

- 1) the attainment of age 67 for Tier 2 members or age 65 for Tier 3 members,  
or
- 2) the first anniversary of the annuity start date

## SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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### **Reversionary Annuity:**

An employee may elect to reduce his or her annuity by an amount less than or equal to \$400 to provide a reversionary annuity for a spouse, parent, child, brother, or sister, to begin upon the employee's death. The election must be made before retirement and have been in effect one year prior to death. The one-year requirement is waived if the beneficiary is the employee's spouse. The death of the employee before retirement voids this election. The reversionary annuity for a spouse when added to the spouse's annuity cannot exceed 100% of the employee's reduced annuity. The amount of the monthly reversionary annuity is determined by multiplying the amount of the monthly reduction in the employee's annuity by a factor based on the age of the employee and the difference between the ages of the employee and the reversionary annuitant at the start date of the employee's annuity.

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**Elected City Officer's Optional Plan:** An alternative plan for elected officials of 3% of final salary for the first eight years, 4% for the next four years, and 5% thereafter, subject to an 80% maximum, is available. The elected official must contribute an additional 3% of salary to receive these benefits. This plan also includes alternative widow and disability benefit formulas. This plan became effective upon approval from the IRS on September 17, 1991. Public Act 100-0023 closed this Plan to officers elected after July 6, 2017.

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### **Spouse Annuity:**

The surviving spouse annuity is the greater of the annuity under the money purchase formula or the minimum annuity formula. Surviving spouses who remarry on or after September 4, 2000, will not have their annuities terminated.

#### Money Purchase Formula

When an employee retires, the spouse's annuity is fixed, based on employee and City contributions for the spouse's annuity and a joint life age factor.

If the employee dies in service, the spouse's annuity is based on all contributions.

For 3% annuities fixed on or after August 1, 1983, the "Combined Annuity Mortality Table" shall continue to be used; however, surviving spouse's single life annuities and reversionary annuities shall be computed using the best factor (the factor producing the highest annuity), without regard to gender.

#### SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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##### Minimum Annuity Formula

If the employee retires or dies in service and is at least age 55 with 20 or more years of service, or is at least age 50 with 30 or more years of service, the spouse's annuity is equal to half the amount of the annuity the employee was entitled to receive at the time of retirement or death in service. This annuity must be reduced by 0.25% for each month the spouse is under age 55 (or age 50 if the employee had at least 25 years of service) at the time the employee retires or dies in service.

If the employee dies while receiving a retirement annuity, the spouse is eligible for an annuity of one half of the employee's annuity at death. This annuity is reduced by 0.25% for each month the spouse is under age 55 (or age 50 if the employee had at least 25 years of service) at the time of the employee's death.

If the employee dies in service with at least 10 years of service, the spouse is entitled to an annuity of half of the minimum formula annuity earned and accrued to the credit of the employee at the date of death. This annuity is not reduced due to the age of the employee or spouse. The spouse is eligible for this annuity only if the marriage was in effect for at least 10 years.

The spouse will receive a minimum annuity of \$800 per month if the employee retires with at least 10 years of service or dies in service with at least five years of service.

For Tier 2 and Tier 3 members, the annuity payable to the surviving spouse is equal to 66 2/3% of the participant's accrued retirement annuity without a reduction due to age.

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##### **Child Annuity:**

A child's annuity is provided for an unmarried child of a deceased employee who is under the age of 18, if the child was born before the withdrawal from service. The annuity is \$220 per month while the spouse of the deceased employee is alive and \$250 per month if the spouse is deceased.

#### SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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**Ordinary Disability Benefit:**

This benefit is granted for disabilities incurred other than in performance of an act of duty and is 50% of salary as of the last day worked. The first payment shall be made one month after the disablement occurs provided the employee is not then in receipt of salary. Length of time on disability is limited to a maximum of 25% of the employee's total service or five years, whichever occurs first.

The Fund contributes salary deductions for annuity purposes for the ordinary disability benefit. Such amounts contributed by the Fund after December 31, 2000, while the employee is receiving ordinary disability benefits, are not refundable to the employee and will be used for annuity purposes only.

**Duty Disability Benefit:**

Any employee who becomes disabled as the result of an injury incurred in the performance of any act of duty has a right to receive a duty disability benefit in the amount of 75% of salary at date of injury, plus \$10 a month for each unmarried child less than age 18. Child's duty disability benefit is limited to 15% of the employee's salary as of the date of injury. Duty disability benefits begin one day after the later of the last day worked or the last day paid.

If the disability has resulted from any mental disorder, physical defect or disease which existed at the time such injury was sustained, the duty disability benefit shall be 50% of salary at date of injury. Disablement because of heart attacks, strokes, or any disablement due to heart disease shall not be considered the result of an accident suffered in the performance of duty. However, the employee will receive service credit and the City will contribute salary deductions for annuity purposes if the employee is receiving Workers' Compensation.

A duty disability benefit is payable to age 65 if the disability benefits begin before age 60. For an employee who begins disability on or after age 60, disability benefits will continue for five years. A duty disability benefit which continues for more than five years and which starts before the employee's age 60, will be increased by 10% on January 1<sup>st</sup> of the sixth year.

The City contributes salary deductions for annuity purposes for the duty disability benefit. Such amounts contributed by the City after December 31, 1981, while the employee is receiving duty disability benefits, are not refundable to the employee and will be used for annuity purposes only.

**SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

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**Refunds:**

Tier 1:

An employee who resigns before age 55, or before age 60 with less than 10 years of service, is entitled to all salary deductions accumulated with interest to date of resignation, plus the 0.50% deducted for annuity increase purposes without interest.

Tier 2 and Tier 3:

An employee who resigns before age 62 (or age 60 for Tier 3) without regard to length of service, or who resigns with less than 10 years of service regardless of age, is entitled to all salary deductions accumulated with interest to date of resignation, plus the 0.50% deducted for annuity increase purposes without interest.

All Tiers:

Amounts contributed by the employee, excluding the 0.50% deductions for annuity increase, that have not been paid out as annuity are refundable to the employee's estate with interest to the date of retirement or death, if the employee died in service.

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

If unmarried at the time of retirement, the employee is entitled to a refund, with interest, of contributions made for the spouse's annuity.

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**Plan Year:**

January 1 through December 31

## SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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### EXHIBIT XIII

#### Legislative Changes in Plan Provisions

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##### 1979 Session

###### *SB 964*

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

###### *HB 1023*

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

###### *HB 2012*

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

##### 1980 Session

###### *HB 3635*

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

##### Spring 1981 Session

###### *SB 21*

- Actuarial Reporting Standards.

###### *SB 851*

- Authorizes investments in conventional mortgage pass-through securities.

###### *SB 879*

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

###### *HB 212*

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

###### *HB 213*

- \$200 refund in lieu of annuity.

###### *HB 215*



## **SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

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- Authorizes securities lending.

### **Spring 1982 Session**

#### ***SB 1147***

- Minimum reporting and actuarial information for 1984.

#### ***SB 1180***

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

#### ***SB 1452***

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

#### ***SB 1579***

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

#### ***HB 740***

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

#### ***HB 2286***

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

### **Spring 1983 Session**

#### ***SB22***

- Delegation of investment authority restrictions.

#### ***HB 380***

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

#### ***HB 514***

- 10% prudent person investment category.

## SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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### *HB 637*

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

### *HB 1144*

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

### *Federal Law and Regulation or Supreme Court Decision*

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

### **1984 Session**

- Illinois Public Employees' Pension Laws Commission abolished.

### **1985 Session**

#### *HB 561*

- 1.80, 2.00, 2.20, 2.40% benefit accrual rate for those born before January 1, 1936, and retiring after July 18, 1985.
- Reduction in age discount factor (employee and widow) from 0.5% to 0.25% for employees born before January 1, 1936, and retiring after July 18, 1985.
- Health insurance supplement up to \$25 per month if the employee is age 65 or older with at least 15 years of service (for each employee annuitant in receipt of annuity and for each employee who retires on annuity in the future).
- Disability provisions extended to age 70 in certain cases.

## **SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

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

### **1986 Session**

#### ***HB 2630***

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

### **1987 Session**

#### ***HB 2715***

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

### **1988 Session**

- No legislative changes.

## SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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### 1989 Session

#### *SB 95*

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

#### *HB 332*

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

### 1990 Session

#### *SB 136*

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

#### *SB 1951*

- Signed January 14, 1991. Beginning for withdrawals on or after January 1, 1991, annuity payments will be made as of the first day of the calendar month during the annuity payment period.
- 2.2% benefit accrual rate for employees retiring on or after July 1, 1990.
- No discount for employee age less than 60 if employee has at least 30 years of service and retires on or after July 1, 1990.
- Minimum employee annuity of \$350 and minimum spouse of \$300 under certain conditions.

## SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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

### 1991 Session

#### *HB 971*

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

### 1992 Session

#### *SB 1650*

- Signed January 25, 1993.
- Transfer provisions for County elected officers and judges.
- Early Retirement Incentive was created for withdrawals from December 31, 1992 to June 30, 1993.
  - Requires a total of 20 years of service (with at least 10 in this fund, 5 in a Reciprocal fund and up to 5 purchased under ERI).
  - Requires age 55 or older.
  - Requires an election form to be filed before June 1, 1993.
  - Retired under this Article.
  - Provides for elimination of the age discount for employees 55-60.
  - Provides for 80% maximum final average salary compared to the present 75%.

## **SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

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

### **1993 Session**

- No legislative changes.

### **1994 Session**

- No legislative changes.

### **1995 Session**

#### ***SB 114***

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

#### ***SB 424***

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

### **1996 Session**

#### ***SBJPA***

- On August 20, 1996, the Small Business Job Protection Act was signed by President Clinton.
- Treatment of governmental plans under Code Section 415:
  - Rule limiting annual benefit to 100 percent of the average of the highest three-year compensation no longer applies.
  - Excess benefit plans are permitted to provide Members with benefits in excess of the Code Section 415 limits.
  - Early retirement reduction does not apply to certain survivor and disability benefits.
  - The definition of compensation now includes elective deferrals.
  - Taxation of distributions:
    - \$5,000 death benefit exclusion was repealed for deaths after August 20, 1996.

## SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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

### 1997 Session

#### *HB 15*

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

#### *HB 313*

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

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

### ***HB 1641***

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

### **1998 Session**

#### ***HB 3515***

- Approved August 14, 1998.



#### SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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

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

### ***HB 1612***

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

### **1999 Session**

- No Changes.

### **2000 Session**

#### ***HB 1583***

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

### **2001 Session**

#### ***EGTRRA***

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

### **2002 Session**

#### ***SB 314***

- Effective July 1, 2002.

#### SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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

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

##### ***HB 5168***

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

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

### **2003 Session**

#### ***SB 1701***

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

### **2004 Session**

#### ***HB 600***

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

#### SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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

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### **2005 Session**

#### ***SB 23***

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

#### ***SB 253***

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

#### ***SB 1446***

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

#### ***HB 227***

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

### **2006 Session**

- No Changes.

### **2007 Session**

#### ***HB 49***

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

#### ***SB 1169***

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

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

### ***SB 1380***

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

### **2008 Session**

- No Changes.

### **2009 Session**

#### ***SB 2520***

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

#### ***HB 2557***

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

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### *SB 364*

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



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

### ***SB 1440***

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

### ***SB 1705***

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

## **2010 Session**

### ***Public Act 96-0889 (SB 1946)***

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

#### SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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

##### ***Public Act 96-1490 (SB 550)***

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

## SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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

### 2011 Session

#### *Public Act 97-0530 (SB 1672)*

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

#### *Public Act 97-0609 (SB 1831)*

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

#### *Public Act 97-0504 (HB 1670)*

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

## SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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

### 2012 Session

#### *Public Act 97-0651 (HB 3813)*

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

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### *Public Act 97-0967 (HB 3969)*

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

### 2013 Session

#### *Public Act 98-0043 (HB 1584)*

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

#### *Public Act 98-0433 (HB 2620)*

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

### 2014 Session

#### *Public Act 98-0641 (SB 1922) (Ruled unconstitutional by Illinois Supreme Court on March 24, 2016. See next page)*

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

## SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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

### ***Public Act 98-1022 (SB 452)***

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

### **2015 Session**

### ***Public Act 99-0462 (SB 1334)***

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

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

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

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

## SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago

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### 2016 Session

#### *Public Act 99-0683 (HB 6030)*

- Approved July 29, 2016
- Requires every pension fund or retirement system under the Code to develop and implement, by no later than June 30, 2017, a process to identify annuitants who are deceased. The process shall require the pension fund or retirement system to check for any deceased annuitants at least once per month and shall include the use of commonly accepted methods to identify persons who are deceased, which include but are not limited to, the use of a third party entity that specializes in the identification of deceased persons, the use of data provided by the Social Security Administration, the use of data provided by the Department of Public Health's Office of Vital Records, or the use of any other method that is commonly used by other states to identify deceased persons.

### 2017 Session

#### *Public Act 100-0023 (SB 0042)*

- Approved July 6, 2017 (effective date)
- Creates a new tier of benefit eligibility and contribution requirements for members (Tier 3) who first become members on or after the effective date of the Act. Benefit structure would be consistent with a Tier 2 member, except as reflected below:
  - Members would contribute 11.5%
  - Beginning January 1, 2018, members would contribute the lesser of 11.5% or the normal cost of the accrued benefit calculated on an annual basis; not less than 8.5%
  - Qualified members would be able to retire at 65 years of age undiscounted and 60 to 64 years of age discounted
- A Tier 2 member would have from October 1 to November 15, 2017 to make an irrevocable election to become a Tier 3 member
- Creates an optional benefits structure for certain Tier 2 members. Must be passed by resolution or ordinance by the governing body of the local government.
- Requires law department employees first hired after the effective date of the Act to be members of the Fund.
- The City of Chicago will increase contributions to the Fund from 2018 to 2022 (ramp period) and then begin paying a required contribution to achieve 90% funding in 40 years (2058).
- The Fund's ability to subrogate a disability injury of a member that was caused by a third party
- Closes the Alternative Annuity for City Officers Plan to officers who first become an elected officer after the effective date of the Act.

#### **SECTION 4: Reporting Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

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- Felony conviction. Any refund to a person who was convicted of a felony that was in relation to their service as a municipal employee, shall be reduced by any benefit received by the person prior to the calculation of the refund. This relates to persons who first became members after the effective date of the Act.

##### ***Public Act 100-0334 (HB0350)***

- Approved and effective August 25, 2017
- Provides for the forfeiture of benefits for any person who otherwise would receive a survivor benefit who is convicted of any felony relating to or arising out of or in connection with the service of the member from whom the benefit results
- Provides that this legislation will not affect any right to survivor benefits prior to the effective date of this Act.

##### ***Public Act 100-0542 (SB1714)***

- Approved and effective November 8, 2017
- Amends the General Provisions Article 1 of the Illinois Pension Code
- Requires an investment consultant to annually disclose to the Board (of a retirement system, pension fund, or investment board) the following:
  - Total searches conducted for investment services in the prior year
  - Total searches conducted for investment services in the prior year that include minority owned, female owned, or businesses owned by persons with a disability (MWDBE), number of MWDBE recommendations made, and amounts awarded to the MWDBE
  - Requires a consultant to disclose any compensation or economic opportunity received in the last 24 months from any investment advisors recommended to or retained by the Board (of a retirement system, pension fund, or investment board).
  - Requires consideration of these disclosures before awarding any contract for consulting services.



## SECTION 5: GASB 67 and 68 Information for Municipal Employees' Annuity and Benefit Fund of Chicago

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### EXHIBIT 1

#### Net Pension Liability

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The components of the net pension liability at December 31, 2017, were as follows:

Total pension liability	\$16,282,396,195
Plan fiduciary net position	4,554,018,287
Net pension liability	11,728,377,908
Plan fiduciary net position as a percentage of the total pension liability	27.97%

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*Actuarial assumptions.* The total pension liability was determined by an actuarial valuation as of December 31, 2017, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.50%
Salary increases	3.50% to 7.75% (1.50% to 6.50% for 2018–2022), varying by years of service
Investment rate of return	7.00%, net of investment expense
Municipal bond index	3.44%, based on the Bond Buyer 20-Bond Index of general obligation municipal bonds as of December 31, 2017
Cost of living adjustments	Tier 1: 3% compound Tier 2 & 3: the lesser of 3% or one-half of the change in CPI, simple

Post-retirement mortality rates were based on the RP-2014 Healthy Annuitant Mortality Tables, set forward two years for males and one year for females, and projected generationally using scale MP-2016. Pre-retirement mortality rates were based on 120% of the RP-2014 Employee Mortality Tables projected generationally using scale MP-2016.

The actuarial assumptions used in the December 31, 2017, valuation were based on the results of an experience study for the period January 1, 2012, through December 31, 2016.

**SECTION 5: GASB 67 and 68 Information for Municipal Employees' Annuity and Benefit Fund of Chicago**

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*Discount rate:* The discount rate used to measure the total pension liability was 7.00%. The projection of cash flows used to determine the discount rate assumed member contributions will be made according to the contribution rate applicable for each member's tier and that employer contributions will be made as specified by Public Act 100-0023. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions and contributions from future plan members that are intended to fund the service costs of future plan members and their beneficiaries are not included. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

*Sensitivity of the net pension liability to changes in the discount rate.* The following presents the net pension liability as of December 31, 2017, calculated using the discount rate of 7.00%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.00%) or 1-percentage-point higher (8.00%) than the current rate:

	<b>1% Decrease (6.00%)</b>	<b>Current Discount Rate (7.00%)</b>	<b>1% Increase (8.00%)</b>
Net pension liability as of December 31, 2017	\$13,807,800,455	\$11,728,377,908	\$10,006,089,666

**SECTION 5: GASB 67 and 68 Information for Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT 2**

**Schedules of Changes in Net Pension Liability**

	<b>2017</b>	<b>2016</b>
<b>Total pension liability</b>		
Service cost	\$572,533,631	\$619,743,849
Interest	915,710,984	878,369,406
Change of benefit terms	0	0
Differences between expected and actual experience	(177,754,999)	(127,119,398)
Changes of assumptions	(7,431,191,282)	(578,920,424)
Benefit payments, including refunds of employee contributions	<u>(888,173,535)</u>	<u>(859,671,662)</u>
<b>Net change in total pension liability</b>	(\$7,008,875,201)	(\$67,598,229)
<b>Total pension liability – beginning</b>	<u>23,291,271,396</u>	<u>23,358,869,625</u>
<b>Total pension liability – ending (a)</b>	<u>\$16,282,396,195</u>	<u>\$23,291,271,396</u>
<b>Plan fiduciary net position</b>		
Contributions – employer*	\$261,763,635	\$149,718,491
Contributions – employee	134,764,920	130,390,848
Net investment income	610,515,096	281,419,146
Benefit payments, including refunds of employee contributions	(888,173,535)	(859,671,662)
Administrative expense	(6,473,006)	(7,056,784)
Other	<u>5,393,581</u>	<u>0</u>
<b>Net change in plan fiduciary net position</b>	\$117,790,691	(\$305,199,961)
<b>Plan fiduciary net position – beginning</b>	<u>4,436,227,596</u>	<u>4,741,427,557</u>
<b>Plan fiduciary net position – ending (b)</b>	\$4,554,018,287	\$4,436,227,596
<b>Fund's net pension liability – ending (a) – (b)</b>	<u>\$11,728,377,908</u>	<u>\$18,855,043,800</u>
<b>Plan fiduciary net position as a percentage of the total pension liability</b>	27.97%	19.05%
<b>Covered employee payroll</b>	\$1,686,532,720	\$1,646,939,238
<b>Fund's net pension liability as percentage of covered employee payroll</b>	695.41%	1,144.85%

\*Receivable amount to be paid the following year

**SECTION 5: GASB 67 and 68 Information for Municipal Employees' Annuity and Benefit Fund of Chicago**

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

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

**EXHIBIT 3**

**Reconciliation of Net Pension Liability**

	<b>Increase/(Decrease) For Fiscal Year Ending December 31, 2017</b>		
	<b>Total Pension Liability (a)</b>	<b>Plan Fiduciary Net Position (b)</b>	<b>Net Pension Liability (a) – (b)</b>
<b>Balances at beginning of year</b>	\$23,291,271,396	\$4,436,227,596	\$18,855,043,800
<b>Changes for the year</b>			
Service cost	572,533,631		572,533,631
Interest	915,710,984		915,710,984
Differences between expected and actual experience	(177,754,999)		(177,754,999)
Contributions – employer		261,763,635	(261,763,635)
Contributions – member		134,764,920	(134,764,920)
Other income		5,393,581	(5,393,581)
Net investment income		610,515,096	(610,515,096)
Benefit payments, including refunds of employee contributions	(888,173,535)	(888,173,535)	0
Administrative expense		(6,473,006)	6,473,006
Change of assumptions	(7,431,191,282)		(7,431,191,282)
Changes of benefit terms	<u>0</u>	<u>0</u>	<u>0</u>
<b>Net changes</b>	(7,008,875,201)	117,790,691	(7,126,665,892)
<b>Balances at end of year</b>	<u>\$16,282,396,195</u>	<u>\$4,554,018,287</u>	<u>\$11,728,377,908</u>

**SECTION 5: GASB 67 and 68 Information for Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT 4**

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

	<b>Year Established</b>	<b>Original Balance</b>	<b>Original Amortization Period</b>	<b>Amortization Amount</b>	<b>Outstanding Balance at December 31, 2017</b>
<b>Outflows</b>					
Investment	2015	\$248,137,086	5	\$49,627,417	\$99,254,835
Assumption	2015	8,711,754,654	5	1,742,350,931	3,484,701,861
Investment	2016	46,575,261	5	9,315,052	27,945,157
<b>Total outflows</b>				<b>\$1,801,293,400</b>	<b>\$3,611,901,853</b>
<b>Inflows</b>					
Demographic	2015	\$109,835,037	5	\$21,967,007	\$43,934,016
Demographic	2016	127,119,398	5	25,423,880	76,271,638
Assumption	2016	578,920,424	5	115,784,085	347,352,254
Demographic	2017	177,754,999	5*	35,551,000	142,203,999
Assumption	2017	7,431,191,282	5*	1,486,238,256	5,944,953,026
Investment	2017	296,275,191	5	59,255,038	237,020,153
<b>Total inflows</b>				<b>\$1,744,219,266</b>	<b>\$6,791,735,086</b>

\* The average expected remaining service lives of all members is 5 years, determined as of January 1, 2017. This amount is equal to the total expected remaining service of 342,064 years, divided by total employees that are provided with pensions through the plan of 72,306 (as shown in the table below), rounded to the nearest integer year.

	<b>Expected Remaining Service</b>	<b>Counts</b>	<b>Average of the Expected Remaining Service</b>
Actives Members	342,064	30,296	11.29
Inactive Members		16,876	-
Retirees and Beneficiaries		25,134	-
<b>Total Employees</b>	<b>342,064</b>	<b>72,306</b>	<b>4.73</b>

**SECTION 5: GASB 67 and 68 Information for Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT 4 (continued)**

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

At December 31, 2017, deferred outflows of resources and deferred inflows of resources related to pensions are:

	<b>Deferred Outflows of Resources</b>	<b>Deferred Inflows of Resources</b>
Difference between expected and actual experience	\$0	\$262,409,653
Changes of assumptions	3,484,701,861	6,292,305,280
Net differences between projected and actual earnings on pension plan investments	0	109,820,161
<b>Total</b>	<u><b>\$3,484,701,861</b></u>	<u><b>\$6,664,535,094</b></u>

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

<b>Year ended December 31:</b>	
2018	\$57,074,134
2019	57,074,132
2020	(1,712,937,203)
2021	(1,581,044,296)
2022	-
Thereafter	-

**SECTION 5: GASB 67 and 68 Information for Municipal Employees' Annuity and Benefit Fund of Chicago**

**EXHIBIT 5**

**Pension Expense**

	<b>Fiscal Year Ending December 31, 2017</b>	<b>Fiscal Year Ending December 31, 2016</b>
<b>Components of pension expense</b>		
Service cost	\$572,533,631	\$619,743,849
Interest on the total pension liability	915,710,984	878,369,406
Projected earnings on plan investments	(314,239,905)	(327,994,407)
Contributions – member	(134,764,920)	(130,390,848)
Other income*	(5,393,581)	0
Administrative expense	6,473,006	7,056,784
Current year recognition of:		
Changes of assumptions	140,328,590	1,626,566,846
Difference between expected and actual experience	(82,941,887)	(47,390,887)
Difference between projected and actual earnings on pension plan investment	(312,569)	58,942,469
Change of benefit terms	<u>0</u>	<u>0</u>
<b>Total pension expense</b>	<b>\$1,097,393,349**</b>	<b>\$2,684,903,212</b>

*\*OPEB income due to eliminating retiree health insurance subsidy for Fund staff members*

*\*\*Decrease in pension expense for year ended December 31, 2017 was primarily due to the increase in the GASB blended discount rate as a result of the increased future funding provided by Public Act 100-0023*

**SECTION 5: GASB 67 and 68 Information for Municipal Employees' Annuity and Benefit Fund of Chicago**

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**EXHIBIT 6**

**Schedule of Employer Contributions**

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<b>Year Ended December 31</b>	<b>Actuarially Determined Contributions</b>	<b>Contributions in Relation to the Actuarially Determined Contributions</b>	<b>Contribution Deficiency (Excess)</b>	<b>Covered Actual Employee Payroll</b>	<b>Contributions as a Percentage of Covered Employee Payroll</b>
2014	\$839,038,303	\$149,746,748	\$689,291,555	\$1,602,977,593	9.34%
2015	\$677,200,246	\$149,225,191	\$527,975,055	\$1,643,480,973	9.08%
2016	\$961,769,955	\$149,718,491	\$812,051,464	\$1,646,939,238	9.09%
2017	\$1,005,456,621	\$261,763,635	\$743,692,986	\$1,686,532,720	15.52%

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**SECTION 5: GASB 67 and 68 Information for the Municipal Employees' Annuity and Benefit Fund of Chicago**

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**Notes to EXHIBIT 6**

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<b>Valuation date</b>	Actuarially determined contribution amount is determined as of December 31, with appropriate interest to the end of the year.
<b>Methods and assumptions used to establish “actuarially determined contribution” rates:</b>	
<b>Actuarial cost method</b>	Entry Age Actuarial cost method
<b>Amortization method</b>	30-year open, level dollar amortization
<b>Asset valuation method</b>	5-year smoothed market
<b>Actuarial assumptions:</b>	
Investment rate of return	7.00%, net of investment expense
Projected salary increases	3.50% to 7.75% (1.50% to 6.50% for 2018–2022), varying by years of service
Mortality	Post-retirement mortality rates were based on the RP-2014 Healthy Annuitant Mortality Tables, set forward two years for males and one year for females, and projected generationally using scale MP-2016. Pre-retirement mortality rates were based on 120% of the RP-2014 Employee Mortality Tables projected generationally using scale MP-2016.
Cost of living adjustments	Tier 1: 3% compound Tier 2 & 3: The lesser of 3% or one-half of the change in CPI, simple
<b>Other assumptions:</b>	Same as those used in the December 31, 2017, actuarial funding valuations.

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