Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

city of CINCINNATI RETIREMENT

GASB STATEMENT NO. 67 REPORT

FOR THE

RETIREMENT SYSTEM FOR EMPLOYEES

OF THE CITY OF CINCINNATI

PREPARED AS OF JUNE 30, 2015

January 4, 2016

Board of Trustees
Retirement System for Employees of the City of Cincinnati
801 Plum Street
Cincinnati, OH 45202

Dear Members of the Board:

Presented in this report is information to assist the Retirement System for Employees of the City of Cincinnati (System), in meeting the requirements of the Governmental Accounting Standards Board (GASB) Statements No. 67. This report has been prepared as of June 30, 2015 (the Measurement Date) to assist the System in better understanding the requirements of GASB 67 and to identify the information to be provided by the System's actuary, Cavanaugh Macdonald Consulting (CMC).

The annual actuarial valuation used as a basis for much of the information presented in this report was performed as of December 31, 2014. The valuation was based upon data, furnished by the System, concerning active, inactive, and retired members along with pertinent financial information.

The actuarial calculations were performed by qualified actuaries according to generally accepted actuarial procedures and methods. The calculations are based on the current provisions of the System, and on actuarial assumptions that are, individually and in the aggregate, internally consistent and reasonably based on the actual experience of the System. In addition, the calculations were completed in compliance with the laws governing the System and, in our opinion, meet the requirements of GASB 67. The undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

These results are only for financial reporting and may not be appropriate for funding purposes or other types of analysis. Calculations for purposes other than satisfying the requirements of GASB 67 may produce significantly different results. Future actuarial results may differ significantly from the current results presented in this report due to such factors as changes in plan experience or changes in economic or demographic assumptions.

Respectfully submitted,

Edward J. Koebel

Edward J. Koebel, EA, FCA, MAAA
Principal and Consulting Actuary

Eric H. Gary, FSA, FCA, MAAA
Chief Healthcare Actuary

EJK/EG

S:/Cincinnati//GASB 67/ 2015 GASB 67 Report (Revised 12-30-2015).docx

TABLE OF CONTENTS

Section	Item	Page No.
I	Introduction	1
II	Financial Statement Notes	3
III	Required Supplementary Information	8

Appendix

A	Required Supplementary Information Tables	9
B	Summary of Benefit Provisions Valued	13
C	Statement of Actuarial Assumptions and Methods	20

REPORT OF THE ANNUAL GASB STATEMENT NO. 67
REQUIRED INFORMATION FOR THE
RETIREMENT SYSTEM FOR THE EMPLOYEES
OF THE CITY OF CINCINNATI

PREPARED AS OF JUNE 30, 2015

SECTION I – INTRODUCTION

The Governmental Accounting Standards Board issued Statement No. 67 (GASB 67), *"Financial Reporting for Pension Plans"*, in June 2012. This report has been prepared as of June 30, 2015. Much of the material provided in this report is based on the data, assumptions and results of the annual actuarial valuation of the System as of December 31, 2014. The results of that valuation were detailed in a report dated June 4, 2015.

GASB 67 requires a measurement of the Total Pension Liability (TPL) utilizing the Entry Age Normal actuarial funding method. If the valuation date at which the TPL is determined is before the measurement date, as is the case here, the TPL must be rolled forward to the measurement date. The Net Pension Liability (NPL) is then set equal to the rolled forward TPL minus the System's Fiduciary Net Position (FNP) (basically the market values of assets) as of the measurement date. The benefit provisions recognized in the calculation of the TPL are summarized in Schedule B. The development of the roll-forward of the TPL is shown in the table on page 7.

Among the assumptions needed for the liability calculation is a Single Equivalent Interest Rate (SEIR). To determine the SEIR, the FNP must be projected into the future for as long as there are anticipated benefits payable under the plan's provision applicable to the members and beneficiaries of the System on the Measurement Date. Future contributions were projected to be made in accordance with the City Ordinance as of the Measurement Date adopted by the City Council and Mayor. If the FNP is not projected to be depleted at any point in the future, the long term expected rate of return on plan investments expected to be used to finance the benefit payments may be used as the SEIR.

If, however, at a future measurement date, the FNP is projected to be depleted, the SEIR is determined as the single rate that will generate a present value of benefit payments equal to the sum of the present value determined by discounting all projected benefit payments through the date of depletion by the long term expected rate of return, and the present value determined by discounting those benefits after the date of depletion by a 20-year tax-exempt municipal bond (rating AA/Aa or higher) rate. The rate used, if necessary, for this purpose is the Bond Buyer General Obligation 20-year Municipal Bond Index published monthly by the Board of Governors of the Federal Reserve System. We have determined that the FNP is projected to be depleted during the projection period and a blended discount rate of 5.08% as of June 30, 2015 will meet the requirements of GASB 67.

The sections that follow provide the results of all the necessary calculations, presented in the order laid out in GASB 67 for note disclosure and Required Supplementary Information (RSI).

SECTION II – FINANCIAL STATEMENT NOTES

The actuarial related information presented herein will follow the order presented in GASB 67. There are other non-actuarial items required which are not included in this report. Paragraph numbers are provided for ease of reference.

Paragraph 30.a. (4): The data required regarding the membership of the Retirement System for Employees of the City of Cincinnati were furnished by the System. The following table summarizes the membership of the System as of December 31, 2014, the Valuation Date.

Membership

	Number
Retired participants and beneficiaries currently receiving benefits	4,319
Terminated participants and beneficiaries entitled to benefits but not yet receiving benefits	197
Inactive participants*	7,170
Active participants	
Full-Time	2,804
Part-Time	795
Total	15,285

* Participants who are former employees who have an employee account balance in the plan but are not otherwise vested in an employer provided benefit.

Paragraph 31.a. (1)-(4): As stated earlier, the NPL is equal to the TPL minus the FNP. That result as of June 30, 2015 is presented in the following table ($ thousands).

	Fiscal Year Ending June 30, 2015
Total Pension Liability	$ 2,904,463
Fiduciary Net Position	1,510,182
Net Pension Liability	$ 1,394,281
Ratio of Fiduciary Net Position to Total Pension Liability	52.00%

Paragraph 31.b.: This paragraph requires information regarding the actuarial assumptions used to measure the TPL. The set of actuarial assumptions utilized in developing the TPL are outlined in Appendix C. The total pension liability was determined based on an actuarial valuation as of December 31, 2014, using the following actuarial assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2015:

Inflation	3.0 percent
Salary increases	3.0 to 7.0 percent, including inflation for five-year select period beginning December 31, 2011; 4.0 to 7.5 percent, including inflation thereafter
Investment rate of return	5.08 percent, net of pension plan investment expense, and including inflation

Mortality	Both pre-retirement and post-retirement mortality rates were based on the RP 2000 combined mortality table, male rates set forward 2 years and female rates set forward 1 year and using a Scale AA projection to 2020. Post-disability mortality rates were based on the RP 2000 disabled retiree mortality table, female rates set back 5 years.

The actuarial assumptions used in the December 31, 2014 valuation were based on the results of the last actuarial experience study, dated October 28, 2011.

Paragraph 31.b.(1)

(a) **Discount rate**. The discount rate used to measure the total pension liability was 5.59% as of June 30, 2014 and 5.08% as June 30, 2015.

(b) **Projected cash flows:** The projection of cash flows used to determine the discount rate assumed that plan member contributions of 9.0% and Employer contributions of 14.0% will be made as set out in City Council ordinance.

(c) **Long term rate of return:** The long-term expected rate of return on pension plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

(d) **Municipal bond rate:** the discount rate determination used a municipal bond rate of 4.35% as of June 30, 2014 and 3.82% as of June 30, 2015.

(e) **Periods of projected benefit payments:** Projected future benefit payments for all current plan members were projected through 2125.

(f) **Assumed asset allocation**: The target asset allocation and best estimates of arithmetic real rates of return for each major asset class as listed in the last actuarial experience study, dated October 28, 2011 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return*
Broad Fixed Income	14.00%	1.10%
High Yield	3.00%	5.60%
Broad US Equity	19.50%	6.60%
US Mid-Cap Growth	5.00%	7.80%
US Small-Cap Value	5.00%	10.60%
Developed Large-Cap	11.00%	7.80%
Non-US Small-Cap	5.00%	11.90%
Emerging Market	5.00%	11.30%
Hedge Fund – Hedged Equity	15.00%	4.70%
Real Estate - Core	7.50%	5.10%
Infrastructure	5.00%	8.30%
Private Equity - FOF	5.00%	13.20%
Total	100.00%	

*Arithmetic mean

(g): **Sensitivity analysis**: disclosure of the sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability of the System, calculated using the discount rate of 5.08 percent, as well as what the System's net pension liability calculated using a discount rate that is 1-percentage-point lower (4.08 percent) or 1-percentage-point higher (6.08 percent) than the current rate:

	1% Decrease (4.08%)	Current Discount Rate (5.08%)	1% Increase (6.08%)
System's Net Pension Liability	$1,744,163	$1,394,281	$1,100,847

Paragraph 31.c.: The date of the actuarial valuation upon which the TPL is based is December 31, 2014. An expected TPL is determined as of June 30, 2015 using standard roll forward techniques. The roll forward calculation adds the normal cost for the first half of 2015 (also called the service cost), subtracts the actual benefit payments and refunds for the six months, and then applies the expected SEIR for the period. This procedure was used to determine the TPL as of June 30, 2015, as shown in the following table:

TPL Roll-Forward ($ thousands)	**Old Assumptions (1)**	**New Assumptions (2)**
(a) Interest Rate (SEIR)	5.59%	5.08%
(b) TPL as of December 31, 2014	$2,740,492	$2,897,459
(c) Entry Age Normal Cost for the period January 1, 2015 – June 30, 2015	14,276	16,029
(d) Actual Benefit Payments and Refunds for the period January 1, 2015 – June 30, 2015	$80,704	$80,704
(e) TPL as of June 30, 2015 = [(c) x $(1 + (a))^{1/2}$] + (d) – [(e) x $(1 + (a))^{1/4}$]	$2,748,515	$2,904,463
(f) June 30, 2014 TPL Rolled Forward to June 30, 2015	2,762,723	
(g) Experience (Gain)/Loss: (1e) – (1f)	$(14,024)	
(h) Assumption (Gain)/Loss: (2e) – (1e)		$155,948

SECTION III – REQUIRED SUPPLEMENTARY INFORMATION

There are several tables of Required Supplementary Information (RSI) that need to be included in the System's financial statements:

Paragraphs 32.a.-c.: The required tables of schedules are provided in Appendix A.

Paragraph 34: The following information should be noted regarding the RSI:

Changes of benefit terms: The following changes to the plan provisions were made since last year as identified:

None.

Changes in actuarial assumptions and methods: The following changes to the actuarial assumptions were made since last year as identified:

None.

Method and assumptions used in calculations of actuarially determined contributions.

The actuarially determined contribution rates in the schedule of employer contributions are calculated as of the December 31, eighteen months prior to the fiscal year end in which contributions are reported. The following actuarial methods and assumptions were used to determine actuarial contribution rates reported in that schedule:

Actuarial cost method	Entry age
Amortization method	Level dollar, open
Remaining amortization period	30 years
Asset valuation method	5-year smoothed market
Inflation	3.0 percent
Salary increase	3.0 to 7.0 percent, including inflation for five-year select period beginning December 31, 2011; 4.0 to 7.5 percent, including inflation thereafter
Investment rate of return	7.5 percent, net of pension plan investment expense, and including inflation

APPENDIX A

REQUIRED SUPPLEMENTARY INFORMATION

(EXHIBIT A AND B FOLLOW)

Exhibit A

GASB 67 Paragraph 32.a.
SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY
($ in Thousands)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total pension liability										
Service Cost	$ 25,937	$27,785								
Interest	148,408	149,052								
Benefit changes	0	0								
Difference between expected										
and actual experience	0	(14,024)								
Changes of assumptions	(17,827)	155,948								
Benefit payments	(156,149)	(159,176)								
Refunds of contributions	(1,785)	(2,231)								
Net change in total pension liability	$ (1,416)	$157,354								
Total pension liability - beginning	$2,748,525	$2,747,109								
Total pension liability - ending (a)	$2,747,109	$2,904,463								
Plan net position										
Contributions – employer	$37,739	$29,084								
Contributions – member	15,059	16,186								
Net investment income	258,382	49,138								
Benefit payments	(156,149)	(159,176)								
Administrative expense	(1,385)	(1,570)								
Refunds of contributions	(1,785)	(2,231)								
Other	0	0								
Net change in plan net position	$ 151,861	$(68,569)								
Plan net position – beginning*	$1,426,888	$1,578,751								
Plan net position - ending (b)	$1,578,749	$1,510,182								
Net pension liability - ending (a) - (b)	$1,168,360	1,394,281								

*Adjustment was made in beginning of year Plan net position after last year's GASB 67 report was issued.

Exhibit A (Continued)

GASB 67 Paragraph 32.b.
SCHEDULE OF THE NET PENSION LIABILITY
($ in Thousands)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total pension liability	$2,747,109	$2,904,463								
Plan net position	1,578,749	1.510,182								
Net pension liability	$1,168,360	1,394,281								
Ratio of plan net position to total pension liability	57.47%	52.00%								
Covered-employee payroll	163,477	164,575								
Net pension liability as a percentage of covered-employee payroll	714.69%	847.20%								

Exhibit B

GASB 67 Paragraph 32.c.
SCHEDULE OF EMPLOYER CONTRIBUTIONS
($ in Thousands)

	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
Actuarially determined employer contribution	75,566	78,101	66,999	49,952	54,875	80,882	43,065	38,767	38,571	23,227
Actual employer contributions	29,084	37,739	37,192	33,608	31,160	30,029	26,650	23,969	31,763	24,946
Annual contribution deficiency/(excess)	46,482	40,362	29,807	16,344	23,715	50,853	16,415	14,798	6,808	(1,719)
Covered-employee payroll	164,575	163,477	167,148	167,148	165,029	167,589	170,416	164,640	182,396	175,369
Actual contributions as a percentage of covered-employee payroll	17.67%	23.09%	22.25%	20.11%	18.88%	17.92%	15.64%	14.56%	17.41%	14.22%

Notes:

Fiscal year changed in 2013 from December 31 to June 30.

APPENDIX B

SUMMARY OF BENEFIT PROVISIONS VALUED

Eligibility

All active employees of the City except for the following:

- Members of the State Police and Fireman's Disability and Pension Fund.
- Employees who are members of PERS, STRS, or the Public School Employees Retirement System.
- Elected officials.

As part of the plan provisions from Ordinance 84-2011 that were passed by the City Council on March 16, 2011 and adopted by the Board, participants in the System were divided into the following groups:

Group	Criteria
AB	Retirees as of 7/1/2011.
C	Active members who attain 30 years of service or age 60 with 5 years of service before 7/1/2011.
D	Active members who first attain 30 years of service or age 60 with 5 years of service on or after 7/1/2011 but before 1/1/2014 and retire before 1/1/2014.
E	Active members who first attain 30 years of service or age 60 with 5 years of service on or after 7/1/2011 but before 1/1/2014 and retire on or after 1/1/2014.
F	Active members hired before 1/1/2010 and not in groups C, D, or E.
G	Active members hired on or after 1/1/2010.

Service Retirement Benefit

Groups AB, C and D:

Normal Retirement Eligibility: Age 60 with 5 years of service or 30 years of service.

Early Retirement Eligibility: Age 55 with 25 years of service.

Benefit Formula Multiplier: Members hired prior to July 12, 1998 were given a one-time irrevocable option to choose either the benefit formula using a 2.22% multiplier or the benefit formula using a 2.50% multiplier. For members hired on or after

July 12, 1998, benefits are calculated using a 2.50% multiplier.

Average Highest Compensation	Average of the highest three consecutive years of compensation.
Years of Service	Years or fractional years of full-time service rendered to the plan sponsor.
Benefit	a) An annuity which is actuarially equivalent to the accumulated contributions of the member at the time of retirement. b) A pension which together with the annuity produces a total annual retirement allowance equal to the product of the applicable benefit formula multiplier, the member's average highest compensation, and the number of years of service. Early Retirement Benefit is actuarially reduced from normal retirement age.

Group E:

Normal Retirement Eligibility	Age 65 with 5 years of service or age 60 with 30 years of service.
Reduced Normal Retirement Eligibility	Age 60 with 5 years of service or 30 years of service.

Retirement benefit is composed of as many as three components:

Part A Benefit: for service earned through December 31, 2013

Part B Benefit: for service earned on and after January 1, 2014 up to a combined 30 years of service

Part C Benefit: for service earned on or after January 1, 2014 in excess of a combined 30 years of service.

Benefit Formula Multiplier	**Part A Benefit:** Members hired prior to July 12, 1998 were given a one-time irrevocable option to choose either the benefit formula using a 2.22% multiplier or the benefit formula using a 2.50% multiplier. For members hired on

	or after July 12, 1998, benefits are calculated using a 2.50% multiplier. **Part B Benefit:** 2.20% multiplier **Part C Benefit:** 2.00% multiplier
Average Highest Compensation	**Part A Benefit:** Average of the highest three consecutive years of compensation **Part B Benefit:** Average of the highest five consecutive years of compensation **Part C Benefit:** Average of the highest five consecutive years of compensation
Years of Service	Years or fractional years of full-time service rendered to the plan sponsor.
Benefit	a) An annuity which is actuarially equivalent to the accumulated contributions of the member at the time of retirement. b) A pension which together with the annuity produces a total annual retirement allowance equal to the sum of Part A, Part B, and Part C benefits each of which is the product of the applicable benefit formula multiplier, the applicable average highest compensation, and the applicable number of years of service. Reduced Normal Retirement Part A benefits will not be actuarially reduced. Reduced Normal Retirement Part B and C benefits are actuarially reduced from normal retirement age.

Group F:

Normal Retirement Eligibility	Age 65 with 5 years of service or age 60 with 30 years of service.
Reduced Normal Retirement Eligibility	Age 60 with 5 years of service or 30 years of service.
Early Retirement Eligibility	Prior to January 1, 2014, age 55 with 25 years of service or age 57 with 15 years of service.

	On or after January 1, 2014, age 57 with 15 years of service.

Retirement benefit is composed of as many as three components:

	Part A Benefit: for service earned through June 30, 2011
	Part B Benefit: for service earned on and after July 1, 2011 up to a combined 30 years of service
	Part C Benefit: for service earned on or after July 1, 2011 in excess of a combined 30 years of service.
Benefit Formula Multiplier	**Part A Benefit:** Members hired prior to July 12, 1998 were given a one-time irrevocable option to choose either the benefit formula using a 2.22% multiplier or the benefit formula using a 2.50% multiplier. For members hired on or after July 12, 1998, benefits are calculated using a 2.50% multiplier.
	Part B Benefit: 2.20% multiplier
	Part C Benefit: 2.00% multiplier
Average Highest Compensation	**Part A Benefit:** Average of the highest three consecutive years of compensation
	Part B Benefit: Average of the highest five consecutive years of compensation
	Part C Benefit: Average of the highest five consecutive years of compensation
Years of Service	Years or fractional years of full-time service rendered to the plan sponsor.
Benefit	a) An annuity which is actuarially equivalent to the accumulated contributions of the member at the time of retirement. b) A pension which together with the annuity produces a total annual retirement allowance equal to the sum of Part A, Part B, and Part C benefits each of which is the product of the applicable benefit formula multiplier, the applicable average highest compensation, and the applicable number of years of service.

Reduced Normal Retirement Part A benefits will not be actuarially reduced.

Reduced Normal Retirement Part B and C benefits are actuarially reduced from normal retirement age.

Early Retirement Part A, B, and C benefits are actuarially reduced from normal retirement age.

Group G

Normal Retirement Eligibility	Age 67 with 5 years of service or age 62 with 30 years of service.
Early Retirement Eligibility	Age 57 with 15 years of service.
Benefit Formula Multiplier	Benefit is calculated using a 2.20% multiplier for all years of service up to 30 years and a 2.00% multiplier for all service in excess of 30 years.
Average Highest Compensation	Average of the highest five consecutive years of compensation.
Years of Service	Years or fractional years of full-time service rendered to the plan sponsor.
Benefit	a) An annuity which is actuarially equivalent to the accumulated contributions of the member at the time of retirement. b) A pension which together with the annuity produces a total annual retirement allowance equal to the product of the applicable benefit formula multiplier, the member's average highest compensation, and the number of years of service. Early Retirement Benefit is actuarially reduced from normal retirement age.

In no event shall the retirement allowance be greater than 90% of a member's average highest compensation.

In no event shall the retirement allowance be greater than that permitted by Section 415 of the Internal Revenue Code.

The average highest compensation used in the calculation of benefits depends on which benefit formula applies to the member. The formula that uses the 2.22% multiplier includes overtime compensation and the lump sum payment for unused vacation, unused sick-pay, etc. The formulas that use all other multipliers do not include overtime or the lump sum payment.

Disability Retirement Benefit

Eligibility	5 years of service.
Benefit	90% of normal retirement benefit at disability date but not less than the smaller of: (1) 25% of average highest compensation (2) 90% of the retirement benefit member would have become entitled to had he continued in service to normal retirement age without further change in average highest compensation.

Deferred Vested Retirement Benefit

Eligibility	5 years of service.
Benefit	Normal retirement benefit beginning at normal retirement age.

Preretirement Death Benefit

(1) Refund of contributions with interest.

(2) Survivor Benefits according to type of survivors if member has at least 18 months of service.

Postretirement Death Benefit

(1) Lump sum $5,000 for group AB only.

(2) If no Joint and Survivor Option is selected, balance of member contributions not received back in retirement benefit payments prior to death.

Optional Forms of Benefit

(1) Joint and 100% Survivor Payment

(2) Joint and 50% Survivor Payment

(3) 66 2/3% Joint and Survivor Payment

(4) 80% Joint and Survivor Payment

Postretirement Increases	3% compounded annually commencing one year after retirement for groups AB and C. For all other groups, increases will be indexed to the CPI-U with a maximum of 2% per year and will be based on simple interest.

Contributions

By Members:	Each member, commencing January 1, 1978, contributes at a rate of 7% of the salary used to compute retirement benefits until his retirement. Beginning January 1, 2010, the employee contribution rate will be increased ½% per year over 4 years to reach 9% of pay.
By Employers:	The sponsoring employer makes annual contributions based on members' salaries so that, when members become eligible for benefits, reserves will have been accumulated adequate to provide the pension and other benefits payable by the plan on account of creditable service.
2007 Early Retirement Window	City employees who have 28 years or more of service credit prior to January 1, 2008 were eligible. Those electing to retire prior to January 1, 2008 were credited with two more years of service.

APPENDIX C

STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

INVESTMENT RATE OF RETURN: 5.08% per year, net of investment expenses (5.59% at beginning of fiscal year).

INFLATION ASSUMPTION: 3.00% per annum.

SALARY INCREASES: Salary increases are assumed to vary by service. In addition, salary increases are assumed to be lower for a five-year select period beginning with the December 31, 2011 valuation. Representative rates are as follows:

	Annual Increase	
Service	Select Period	Ultimate Period
0	7.0%	7.5%
5	4.5	5.0
10	3.0	4.5
20	3.0	4.5
30	3.0	4.0

SEPARATIONS FROM ACTIVE SERVICE: For death rates, RP-2000 Combined Mortality Table set forward two years for males and set forward one year for females and using a Scale AA projection to 2020 was used. Representative values of the assumed annual rates of separation from active service are as follows:

	Annual Rate of Withdrawal				Annual Rate of Disability
Age	Less than One Year of Service	Between One and Three Years of Service	Between Three and Five Years of Service	Five or More Years of Service	
20	25.0%	10.0%	7.5%	5.0%	0.01%
25	25.0	10.0	7.5	5.0	0.02
30	25.0	10.0	7.5	3.5	0.03
35	25.0	10.0	4.0	2.8	0.05
40	25.0	10.0	4.0	2.3	0.09
45	25.0	10.0	4.0	1.5	0.15
50	25.0	10.0	4.0	1.5	0.27
55	25.0	10.0	4.0	1.5	0.42
60	25.0	10.0	4.0	1.5	0.00
65	25.0	10.0	4.0	1.5	0.00
70	25.0	10.0	4.0	1.5	0.00

	Annual Rate of Retirement			
Age	Early Retirement	Less than 30 Years of Service	30 Years of Service	31+ Years of Service
	Groups C, D, E, and F			
50			45.0	30.0
55	10.0%		45.0	30.0
59	10.0		45.0	30.0
60		25.0%	30.0	25.0
61		20.0	20.0	20.0
65		20.0	20.0	20.0
70		100.0	100.0	100.0
	Group G			
57	10.0%			
60	20.0			
62	20.0		25.0%	20.0%
65	20.0		25.0	20.0
67		25.0%	25.0	20.0
69		20.0	20.0	20.0
70		100.0	100.0	100.0

DEATHS AFTER RETIREMENT: The RP-2000 Combined Mortality Table set forward two years for males and set forward one year for females and using a Scale AA projection to 2020 is used for the period after retirement and for dependent beneficiaries. The RP-2000 Disabled Mortality Table (set back 5 years for females) is used for the period after disability.

PERCENT MARRIED: 70% of male members and 30% of female members are assumed to be married with the male three years older than his spouse.

ASSETS: Market Value of Assets.

WITHDRAWAL ASSUMPTION: It is assumed that 100% of vested members who terminate with less than 15 years of service elect to withdraw their contributions and that 50% of vested members who terminate with 15 or more years of service elect to withdraw their contributions while the remaining 50% elect to leave their contributions in the plan in order to be eligible for a benefit at their retirement date.

VALUATION METHOD: Entry age actuarial cost method.

Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve

city of CINCINNATI
RETIREMENT

GASB STATEMENT NO. 68 REPORT

FOR THE

RETIREMENT SYSTEM FOR EMPLOYEES

OF THE CITY OF CINCINNATI

PREPARED AS OF JUNE 30, 2015

www.CavMacConsulting.com

Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

December 30, 2015

Board of Trustees
Retirement System for Employees of the City of Cincinnati
801 Plum Street
Cincinnati, OH 45202

Dear Members of the Board:

Presented in this report is information to assist the Retirement System for Employees of the City of Cincinnati (System) in meeting the requirements of the Governmental Accounting Standards Board (GASB) Statement No. 68. The information is presented for the period ending June 30, 2015 (the Measurement Date) to assist the System in better understanding the requirements of GASB 68 and to identify the information to be provided by the System's actuary, Cavanaugh Macdonald Consulting (CMC).

The annual actuarial valuation used as a basis for much of the information presented in this report was performed as of December 31, 2014. The valuation was based upon data, furnished by the System, concerning active, inactive and retired members along with pertinent financial information.

To the best of our knowledge, this report is complete and accurate. The necessary calculations were performed by, and under the supervision of, independent actuaries who are members of the American Academy of Actuaries with experience in performing valuations for public retirement Plans.

The calculations were prepared in accordance with the principles of practice prescribed by the Actuarial Standards Board, and, in our opinion, meet the requirements of GASB 68.

The actuarial calculations were performed by qualified actuaries according to generally accepted actuarial procedures and methods. The calculations are based on the current provisions of the Plan, and on actuarial assumptions that are, individually and in the aggregate, internally consistent and reasonably based on the actual experience of the Plan. In addition, the calculations were completed in compliance with the laws governing the Plan. The undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

3550 Busbee Pkwy, Suite 250, Kennesaw, GA 30144
Phone (678) 388-1700 • Fax (678) 388-1730
www.CavMacConsulting.com
Offices in Englewood, CO • Kennesaw, GA • Bellevue, NE

These results are only for financial reporting and may not be appropriate for funding purposes or other types of analysis. Calculations for purposes other than satisfying the requirements of GASB 68 may produce significantly different results. Future actuarial results may differ significantly from the current results presented in this report due to such factors as changes in plan experience or changes in economic or demographic assumptions.

Respectfully submitted,

Edward J. Koebel

E H Gary

Edward J. Koebel, EA, FCA, MAAA
Principal and Consulting Actuary

Eric H. Gary, FSA, FCA, MAAA
Chief Healthcare Actuary

EJK/EG

S:\City of Cincinnati\GASB 67 & 68\2015\2015 GASB 68 Report (Revised 12-30-2015).docx

TABLE OF CONTENTS

Section	Item	Page No.
I	Introduction	1
II	Summary of Principal Results	2
III	Financial Statement Notes	3
IV	Pension Expense	11
V	Required Supplementary Information	13

Appendix

A	Required Supplementary Information Tables	14
B	Summary of Benefit Provisions Evaluated	17
C	Statement of Actuarial Assumptions and Methods	24

REPORT OF THE ANNUAL GASB STATEMENT NO. 68
REQUIRED INFORMATION FOR THE
RETIREMENT SYSTEM FOR THE EMPLOYEES
OF THE CITY OF CINCINNATI

PREPARED AS OF JUNE 30, 2015

SECTION I – INTRODUCTION

The Governmental Accounting Standards Board issued Statement No. 68 (GASB 68), "Accounting and Financial Reporting For Pensions", in June 2013. This report has been prepared as of June 30, 2015. Much of the material provided in this report is based on the data, assumptions and results of the annual actuarial valuation of the System as of December 31, 2014. The results of that valuation were detailed in a report dated June 4, 2015.

GASB 68 replaced GASB 27, and represented a significant departure from the requirements of that prior statement. GASB 68 created disclosure and reporting requirements that may or may not be consistent with the basis used for funding the System.

Two major changes in GASB 68 are the requirements to include a Net Pension Liability (NPL) and recognize a Pension expense (PE) in the financial statements of the participating employer.

The NPL shown in the GASB Statement Number 67 Report for the Retirement System for Employees of the City of Cincinnati prepared as of June 30, 2015 and submitted November 18, 2015 is the NPL used for purposes of GASB 68. Please refer to that report for the derivation of the NPL.

Pension Expense includes amounts for service cost (the Normal Cost under EAN for the year), interest on the NPL, changes in benefit structure, amortization of increases/decreases in liability due to actuarial experience and actuarial assumption changes, and amortization of investment gains/losses. The actuarial experience and assumption change impacts are amortized over the remaining service life of the System membership as of the Measurement Date, and investment gains/losses are amortized over five years. The development of the PE is shown in Section IV.

The unamortized portions of each year's experience, assumption changes and investment gains/losses are used to develop deferred inflows and outflows, which also must be included on the employer's balance sheet. The development of the deferred inflows and outflows is shown in Section III.

The sections that follow provide the results of all the necessary calculations, presented in the order laid out in GASB 68 for note disclosure and Required Supplementary Information (RSI).

SECTION II - SUMMARY OF PRINCIPAL RESULTS
($ IN THOUSANDS)

Valuation Date (VD):	December 31, 2014
Prior Measurement Date:	June 30, 2014
Measurement Date (MD):	June 30, 2015
Reporting Date (RD):	June 30, 2015
Single Equivalent Interest Rate (SEIR):	
Long-Term Expected Rate of Return	7.50%
Municipal Bond Index Rate at Prior Measurement Date	4.35%
Municipal Bond Index Rate at Measurement Date	3.82%
Fiscal Year in which Plan's Fiduciary Net Position is projected to be depleted from future benefit payments for current members	2031
Single Equivalent Interest Rate at Prior Measurement Date	5.59%
Single Equivalent Interest Rate at Measurement Date	5.08%
Net Pension Liability:	
Total Pension Liability (TPL)	$ 2,904,463
Fiduciary Net Position (FNP)	1,510,182
Net Pension Liability (NPL = TPL – FNP)	$ 1,394,281
FNP as a percentage of TPL	52.00%
Pension Expense (PE):	$96,935
Deferred Outflows of Resources:	$77,974
Deferred Inflows of Resources:	$57,861

SECTION III – FINANCIAL STATEMENT NOTES

The material presented herein will follow the order presented in GASB 68. Paragraph numbers are provided for ease of reference.

Paragraphs 40(a) and (b): The information required is to be supplied by the Employer.

Paragraph 40(c): The data required regarding the membership of the Retirement System for Employees of the City of Cincinnati were furnished by the System. The following table summarizes the membership of the System as of December 31, 2014, the Valuation Date.

Membership

	Number
Retired participants and beneficiaries currently receiving benefits	4,319
Terminated participants and beneficiaries entitled to benefits but not yet receiving benefits	197
Inactive participants*	7,170
Active participants	
Full-Time	2,804
Part-Time	795
Total	15,285

* Participants who are former employees who have an employee account balance in the plan but are not otherwise vested in an employer provided benefit.

Paragraphs 40(d) and (e): The information required is to be supplied by the Employer.

Paragraphs 41: This paragraph requires information regarding the actuarial assumptions used to measure the TPL. The actuarial assumptions utilized in developing the TPL are outlined in Schedule C. The total pension liability was determined by an actuarial valuation as of December 31, 2014, using the following actuarial assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2015:

Inflation	3.0 percent
Salary increases, including inflation	3.0 to 7.0 percent, for five-year select period beginning December 31, 2011; 4.0 to 7.5 percent, thereafter
Long-Term Investment Rate of Return, net of pension plan investment expense, including inflation	7.50 percent
Municipal Bond Index Rate	
Prior Measurement Date	4.35 percent
Measurement Date	3.82 percent
Year FNP is projected to be depleted	2031
Single Equivalent Interest Rate, net of pension plan investment expense, including inflation	
Prior Measurement Date	5.59 percent
Measurement Date	5.08 percent

Mortality	Both pre-retirement and post-retirement mortality rates were based on the RP 2000 combined mortality table, male rates set forward 2 years and female rates set forward 1 year and using a Scale AA projection to 2020. Post-disability mortality rates were based on the RP 2000 disabled retiree mortality table, female rates set back 5 years.

The actuarial assumptions used in the December 31, 2014 valuation were based on the results of the last actuarial experience study, dated October 28, 2011.

Paragraph 42

- **(a) Discount rate**. The discount rate used to measure the total pension liability was 5.59% as of June 30, 2014 and 5.08% as June 30, 2015.
- **(b) Projected cash flows:** The projection of cash flows used to determine the discount rate assumed that plan member contributions of 9.0% and Employer contributions of 14.0% will be made as set out in City Council ordinance.
- **(c) Long term rate of return:** The long-term expected rate of return on pension plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.
- **(d) Municipal bond rate:** The discount rate determination used a municipal bond rate of 4.35% as of June 30, 2014 and 3.82% as of June 30, 2015.
- **(e) Periods of projected benefit payments:** Projected future benefit payments for all current plan members were projected through 2125.
- **(f) Assumed asset allocation**: The target asset allocation and best estimates of arithmetic real rates of return for each major asset class as listed in the last actuarial experience study, dated October 28, 2011 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return*
Broad Fixed Income	14.00%	1.10%
High Yield	3.00%	5.60%
Broad US Equity	19.50%	6.60%
US Mid-Cap Growth	5.00%	7.80%
US Small-Cap Value	5.00%	10.60%
Developed Large-Cap	11.00%	7.80%
Non-US Small-Cap	5.00%	11.90%
Emerging Market	5.00%	11.30%
Hedge Fund – Hedged Equity	15.00%	4.70%
Real Estate - Core	7.50%	5.10%
Infrastructure	5.00%	8.30%
Private Equity - FOF	5.00%	13.20%
Total	100.00%	

*Arithmetic mean

(g): **Sensitivity analysis**: This is the disclosure of the sensitivity of the NPL to changes in the discount rate. The following presents the NPL of the System, calculated using the discount rate of 5.08 percent, as well as what the System's NPL calculated using a discount rate that is 1-percentage-point lower (4.08 percent) or 1-percentage-point higher (6.08 percent) than the current rate:

($ thousands)	1% Decrease (4.08%)	Current Discount Rate (5.08%)	1% Increase (6.08%)
System's Net Pension Liability	$1,744,163	$1,394,281	$1,100,847

Paragraph 44: This paragraph requires a schedule of changes in Net Pension Liability. The needed information is provided in the table below.

CHANGES IN THE NET PENSION LIABILITY
($ thousands)

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
Balances at June 30, 2014	$2,747,109	$1,578,751	$1,168,358
Changes for the year:			
Service cost	27,785		27,785
Interest	149,052		149,052
Changes of assumptions	155,948		155,948
Difference between expected and actual experience	(14,024)		(14,024)
Contributions - employer		29,084	(29,084)
Contributions - employee		16,186	(16,186)
Net investment income		49,138	(49,138)
Benefit payments, including refunds of employee contributions	(161,407)	(161,407)	0
Administrative expense		(1,570)	1,570
Other changes	0	0	0
Net changes	157,354	(68,569)	225,923
Balances at June 30, 2015	$2,904,463	$1,510,182	$1,394,281

Paragraph 45(a): The date of the actuarial valuation upon which the TPL is based is December 31, 2014. An expected TPL is determined as of June 30, 2015 using standard roll forward techniques. The roll forward calculation adds the normal cost for the first half of 2015 (also called the service cost), subtracts the actual benefit payments and refunds for the six months, and then applies the expected SEIR for the period. This procedure was used to determine the TPL as of June 30, 2015, as shown in the following table:

TPL Roll-Forward ($ thousands)	Old Assumptions (1)	New Assumptions (2)
(a) Interest Rate (SEIR)	5.59%	5.08%
(b) TPL as of December 31, 2014	$2,740,492	$2,897,459
(c) Entry Age Normal Cost for the period January 1, 2015 – June 30, 2015	14,276	16,029
(d) Actual Benefit Payments and Refunds for the period January 1, 2015 – June 30, 2015	$80,704	$80,704
(e) TPL as of June 30, 2015 $= [(c) \times (1 + (a))^{1/2}] + (d) - [(e) \times (1 + (a))^{1/4}]$	$2,748,515	$2,904,463
(f) June 30, 2014 TPL Rolled Forward to June 30, 2015	2,762,723	
(g) Experience (Gain)/Loss: (1e) – (1f)	$(14,024)	
(h) Assumption (Gain)/Loss: (2e) – (1e)		$155,948

Paragraph 45(c): There have been no changes in actuarial assumptions and methods used in the measurement of the total pension liability since the prior measurement date.

Paragraph 45(d): There have been no changes in benefit terms used in the measurement of the total pension liability since the prior measurement date.

Paragraph 45(f): There have been no known changes between the measurement date of the net pension liability and reporting date that are expected to have a significant effect on the net pension liability.

Paragraph 45(g): The information required is to be supplied by the Employer.

Paragraph 45(h): Since certain expense items are amortized over closed periods each year, the deferred portions of these items must be tracked annually. If the amounts serve to reduce pension expense they are labeled deferred inflows. If they will increase pension expense they are labeled deferred outflows. The amortization of these amounts is accomplished on a level dollar basis, with no interest included in the deferred amounts. Experience gains/losses and the impact of changes in actuarial assumptions, if any, are amortized over the average remaining service life of the active and inactive System members at the beginning of the fiscal year. Investment gains and losses are amortized over a fixed five year period.

The table below provides a summary of the deferred inflows and outflows as of June 30, 2015.

($ thousands)	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$0	$7,012
Changes of assumptions	77,974	9,517
Net difference between projected and actual earnings on plan investments	0	41,332
Employer contributions subsequent to the Measurement Date	0	$0
Total	$77,974	$57,861

Paragraph 45(i): Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ended June 30:	
2016	$48,706
2017	(22,256)
2018	(19,307)
2019	12,970
2020	0
Thereafter	0

SECTION IV – PENSION EXPENSE

As noted earlier, the Pension Expense (PE) consists of a number of different items. GASB 68 refers to the first as Service Cost which is the Normal Cost using the Entry Age Normal (EAN) actuarial funding method. The second item is interest on the beginning of year TPL and the cash flows during the year at the SEIR rate of return in effect as of the previous measurement date.

The next three items refer to any changes that occurred in the TPL due to:

- benefit changes,
- actual versus expected experience or
- changes in actuarial assumptions.

Benefit changes, which are reflected immediately in PE, can be positive, if there is a benefit improvement for existing System members, or negative if there is a benefit reduction. For the year ended June 30, 2015, there were no benefit changes to be recognized.

The next items to be recognized are the portion of current year changes in TPL due to actual versus expected experience for the year and the portion of current year changes in TPL due to changes in actuarial assumptions. The portion to recognize in the current year is determined by spreading the total change over the average expected remaining service life of the entire System membership. The remaining service life of active members is the average number of years they are expected to remain active. For the year ended June 30, 2015 this number is 10.13. The remaining service life of the inactive members is, of course, zero. Therefore, the figure to use for the amortization is the weighted average of these two amounts, or 2.00. The table below provides the calculation of the average remaining future service life.

Category	Number (1)	Average Years of Future Service Life (2)
a. Active Members	2,957	10.13
b. Inactive Members	12,046	0.00
c. Total	15,003	
Weighted Average Years of Future Service Life [(a1 x a2) + (b1 x b2)]/c1		2.00

Member contributions for the year and projected earnings on the FNP, again at the rate used to calculate the liabilities, are subtracted from the amount determined thus far. The current year portions of previously determined experience, assumption, and investment earnings amounts, recognized as deferred inflows and outflows (see Section III) are included next. Deferred inflows are subtracted from the PE while deferred outflows are added to the PE. Finally, administrative expenses and other miscellaneous items are included.

The calculation of the Pension Expense is shown in the following table.

Pension Expense
For the Year Ended
($ thousands)

Service Cost	$27,785
Interest on the total pension liability	149,052
Current-period benefit changes	0
Expensed portion of current-period difference between expected and actual experience in the total pension liability	(7,012)
Expensed portion of current-period changes of assumptions	77,974
Member contributions	(16,186)
Projected earnings on plan investments	(113,992)
Expensed portion of current-period differences between actual and projected earnings on plan investments	12,971
Administrative expense	1,570
Other	0
Recognition of beginning deferred outflows of resources as pension expense	0
Recognition of beginning deferred inflows of resources as pension expense	(35,227)
Pension Expense	$96,935

SECTION V – REQUIRED SUPPLEMENTARY INFORMATION

There are several tables of Required Supplementary Information (RSI) that need to be included in the System's financial statements:

Paragraphs 46(a) and (b): The required tables are provided in Schedule A and the information is as of the Measurement Dates.

Paragraph 46(c): The required table is provided in Schedule A and the information is as of the Employer's Fiscal Year Ends.

Paragraph 47: In addition the following should be noted regarding the RSI:

Changes of benefit terms. None.

Changes in actuarial assumptions and methods: None.

Method and assumptions used in calculations of actuarially determined contributions. The actuarially determined contribution rates in the schedule of employer contributions are calculated as of December 31, eighteen months prior to the end of the fiscal year in which contributions are reported (as of December 31, 2013 for the fiscal year 2015 contributions). The following actuarial methods and assumptions were used to determine actuarial contribution rates reported in that schedule:

Actuarial cost method	Entry age
Amortization method	Level dollar, open
Remaining amortization period	30 years
Asset valuation method	5-year smoothed market
Inflation	3.0 percent
Salary increase	3.0 to 7.0 percent, including inflation for five-year select period beginning December 31, 2011; 4.0 to 7.5 percent, including inflation thereafter
Investment rate of return	7.5 percent, net of pension plan investment expense, and including inflation

APPENDIX A

REQUIRED SUPPLEMENTARY INFORMATION

SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY
($ thousands)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total pension liability										
Service Cost	$ 25,937	$27,785								
Interest	148,408	149,052								
Benefit changes	0	0								
Difference between expected and actual experience	0	(14,024)								
Changes of assumptions	(17,827)	155,948								
Benefit payments	(156,149)	(159,176)								
Refunds of contributions	(1,785)	(2,231)								
Net change in total pension liability	$ (1,416)	$157,354								
Total pension liability - beginning	$2,748,525	$2,747,109								
Total pension liability - ending (a)	$2,747,109	$2,904,463								
Plan net position										
Contributions – employer	$37,740	$29,084								
Contributions – member	15,059	16,186								
Net investment income	258,382	49,138								
Benefit payments	(156,149)	(159,176)								
Administrative expense	(1,384)	(1,570)								
Refunds of contributions	(1,785)	(2,231)								
Other	0	0								
Net change in plan net position	$ 151,863	$(68,569)								
Plan net position – beginning	$1,426,888	$1,578,751								
Plan net position - ending (b)	$1,578,751	$1,510,182								
Net pension liability - ending (a) - (b)	$1,168,358	1,394,281								

SCHEDULE OF THE NET PENSION LIABILITY
($ thousands)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total pension liability	$2,747,109	$2,904,463								
Plan net position	1,578,751	1.510,182								
Net pension liability	$1,168,358	1,394,281								
Ratio of plan net position to total pension liability	57.47%	52.00%								
Covered-employee payroll	163,477	164,575								
Net pension liability as a percentage of covered-employee payroll	714.69%	847.20%								

SCHEDULE OF EMPLOYER CONTRIBUTIONS
($ thousands)

	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
Actuarially determined employer contribution	75,566	78,101	66,999	49,952	54,875	80,882	43,065	38,767	38,571	23,227
Actual employer contributions	29,084	37,739	37,192	33,608	31,160	30,029	26,650	23,969	31,763	24,946
Annual contribution deficiency/(excess)	46,482	40,362	29,807	16,344	23,715	50,853	16,415	14,798	6,808	(1,719)
Covered-employee payroll	164,575	163,477	167,148	167,148	165,029	167,589	170,416	164,640	182,396	175,369
Actual contributions as a percentage of covered-employee payroll	17.67%	23.09%	22.25%	20.11%	18.88%	17.92%	15.64%	14.56%	17.41%	14.22%

Notes:

Fiscal year changed in 2013 from December 31 to June 30.

APPENDIX B

SUMMARY OF BENEFIT PROVISIONS VALUED

Eligibility

All active employees of the City except for the following:

- Members of the State Police and Fireman's Disability and Pension Fund.
- Employees who are members of PERS, STRS, or the Public School Employees Retirement System.
- Elected officials.

As part of the plan provisions from Ordinance 84-2011 that were passed by the City Council on March 16, 2011 and adopted by the Board, participants in the System were divided into the following groups:

Group	Criteria
AB	Retirees as of 7/1/2011.
C	Active members who attain 30 years of service or age 60 with 5 years of service before 7/1/2011.
D	Active members who first attain 30 years of service or age 60 with 5 years of service on or after 7/1/2011 but before 1/1/2014 and retire before 1/1/2014.
E	Active members who first attain 30 years of service or age 60 with 5 years of service on or after 7/1/2011 but before 1/1/2014 and retire on or after 1/1/2014.
F	Active members hired before 1/1/2010 and not in groups C, D, or E.
G	Active members hired on or after 1/1/2010.

Service Retirement Benefit

Groups AB, C and D:

Normal Retirement Eligibility — Age 60 with 5 years of service or 30 years of service.

Early Retirement Eligibility — Age 55 with 25 years of service.

Benefit Formula Multiplier — Members hired prior to July 12, 1998 were given a one-time irrevocable option to choose either the benefit formula using a 2.22% multiplier or the benefit formula using a 2.50% multiplier. For members hired on or after July 12, 1998, benefits are calculated using a 2.50% multiplier.

Average Highest Compensation	Average of the highest three consecutive years of compensation.
Years of Service	Years or fractional years of full-time service rendered to the plan sponsor.
Benefit	a) An annuity which is actuarially equivalent to the accumulated contributions of the member at the time of retirement. b) A pension which together with the annuity produces a total annual retirement allowance equal to the product of the applicable benefit formula multiplier, the member's average highest compensation, and the number of years of service. Early Retirement Benefit is actuarially reduced from normal retirement age.

<u>Group E:</u>

Normal Retirement Eligibility	Age 65 with 5 years of service or age 60 with 30 years of service.
Reduced Normal Retirement Eligibility	Age 60 with 5 years of service or 30 years of service.

Retirement benefit is composed of as many as three components:

<u>Part A Benefit:</u> for service earned through December 31, 2013

<u>Part B Benefit:</u> for service earned on and after January 1, 2014 up to a combined 30 years of service

<u>Part C Benefit</u>: for service earned on or after January 1, 2014 in excess of a combined 30 years of service.

Benefit Formula Multiplier	**<u>Part A Benefit:</u>** Members hired prior to July 12, 1998 were given a one-time irrevocable option to choose either the benefit formula using a 2.22% multiplier or the benefit formula using a 2.50% multiplier. For members hired on or after July 12, 1998, benefits are calculated using a 2.50% multiplier.

	Part B Benefit: 2.20% multiplier
	Part C Benefit: 2.00% multiplier
Average Highest Compensation	**Part A Benefit:** Average of the highest three consecutive years of compensation
	Part B Benefit: Average of the highest five consecutive years of compensation
	Part C Benefit: Average of the highest five consecutive years of compensation
Years of Service	Years or fractional years of full-time service rendered to the plan sponsor.
Benefit	a) An annuity which is actuarially equivalent to the accumulated contributions of the member at the time of retirement. b) A pension which together with the annuity produces a total annual retirement allowance equal to the sum of Part A, Part B, and Part C benefits each of which is the product of the applicable benefit formula multiplier, the applicable average highest compensation, and the applicable number of years of service. Reduced Normal Retirement Part A benefits will not be actuarially reduced. Reduced Normal Retirement Part B and C benefits are actuarially reduced from normal retirement age.

Group F:

Normal Retirement Eligibility	Age 65 with 5 years of service or age 60 with 30 years of service.
Reduced Normal Retirement Eligibility	Age 60 with 5 years of service or 30 years of service.
Early Retirement Eligibility	Prior to January 1, 2014, age 55 with 25 years of service or age 57 with 15 years of service. On or after January 1, 2014, age 57 with 15 years of service.

Retirement benefit is composed of as many as three components:

	Part A Benefit: for service earned through June 30, 2011
	Part B Benefit: for service earned on and after July 1, 2011 up to a combined 30 years of service
	Part C Benefit: for service earned on or after July 1, 2011 in excess of a combined 30 years of service.
Benefit Formula Multiplier	**Part A Benefit:** Members hired prior to July 12, 1998 were given a one-time irrevocable option to choose either the benefit formula using a 2.22% multiplier or the benefit formula using a 2.50% multiplier. For members hired on or after July 12, 1998, benefits are calculated using a 2.50% multiplier.
	Part B Benefit: 2.20% multiplier
	Part C Benefit: 2.00% multiplier
Average Highest Compensation	**Part A Benefit:** Average of the highest three consecutive years of compensation
	Part B Benefit: Average of the highest five consecutive years of compensation
	Part C Benefit: Average of the highest five consecutive years of compensation
Years of Service	Years or fractional years of full-time service rendered to the plan sponsor.
Benefit	a) An annuity which is actuarially equivalent to the accumulated contributions of the member at the time of retirement.
	b) A pension which together with the annuity produces a total annual retirement allowance equal to the sum of Part A, Part B, and Part C benefits each of which is the product of the applicable benefit formula multiplier, the applicable average highest compensation, and the applicable number of years of service.
	Reduced Normal Retirement Part A benefits will not be actuarially reduced.

Reduced Normal Retirement Part B and C benefits are actuarially reduced from normal retirement age.

Early Retirement Part A, B, and C benefits are actuarially reduced from normal retirement age.

Group G

Normal Retirement Eligibility	Age 67 with 5 years of service or age 62 with 30 years of service.
Early Retirement Eligibility	Age 57 with 15 years of service.
Benefit Formula Multiplier	Benefit is calculated using a 2.20% multiplier for all years of service up to 30 years and a 2.00% multiplier for all service in excess of 30 years.
Average Highest Compensation	Average of the highest five consecutive years of compensation.
Years of Service	Years or fractional years of full-time service rendered to the plan sponsor.
Benefit	a) An annuity which is actuarially equivalent to the accumulated contributions of the member at the time of retirement. b) A pension which together with the annuity produces a total annual retirement allowance equal to the product of the applicable benefit formula multiplier, the member's average highest compensation, and the number of years of service. Early Retirement Benefit is actuarially reduced from normal retirement age.

In no event shall the retirement allowance be greater than 90% of a member's average highest compensation.

In no event shall the retirement allowance be greater than that permitted by Section 415 of the Internal Revenue Code.

The average highest compensation used in the calculation of benefits depends on which benefit formula applies to the member. The formula that uses the 2.22% multiplier includes overtime compensation and the lump sum payment for unused vacation, unused sick-pay, etc. The formulas that use all other multipliers do not include overtime or the lump sum payment.

Disability Retirement Benefit

Eligibility	5 years of service.
Benefit	90% of normal retirement benefit at disability date but not less than the smaller of: (1) 25% of average highest compensation (2) 90% of the retirement benefit member would have become entitled to had he continued in service to normal retirement age without further change in average highest compensation.

Deferred Vested Retirement Benefit

Eligibility	5 years of service.
Benefit	Normal retirement benefit beginning at normal retirement age.

Preretirement Death Benefit

(1) Refund of contributions with interest.

(2) Survivor Benefits according to type of survivors if member has at least 18 months of service.

Postretirement Death Benefit

(1) Lump sum $5,000 for group AB only.

(2) If no Joint and Survivor Option is selected, balance of member contributions not received back in retirement benefit payments prior to death.

Optional Forms of Benefit

(1) Joint and 100% Survivor Payment

(2) Joint and 50% Survivor Payment

(3) 66 2/3% Joint and Survivor Payment

(4) 80% Joint and Survivor Payment

Postretirement Increases	3% compounded annually commencing one year after retirement for groups AB and C. For all other groups, increases will be indexed to the CPI-U with a maximum of 2% per year and will be based on simple interest.

Contributions

By Members:	Each member, commencing January 1, 1978, contributes at a rate of 7% of the salary used to compute retirement benefits until his retirement. Beginning January 1, 2010, the employee contribution rate will be increased ½% per year over 4 years to reach 9% of pay.
By Employers:	The sponsoring employer makes annual contributions based on members' salaries so that, when members become eligible for benefits, reserves will have been accumulated adequate to provide the pension and other benefits payable by the plan on account of creditable service.
2007 Early Retirement Window	City employees who have 28 years or more of service credit prior to January 1, 2008 were eligible. Those electing to retire prior to January 1, 2008 were credited with two more years of service.

APPENDIX C

STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

INVESTMENT RATE OF RETURN: 5.08% per year, net of investment expenses (5.59% at beginning of fiscal year).

INFLATION ASSUMPTION: 3.00% per annum.

SALARY INCREASES: Salary increases are assumed to vary by service. In addition, salary increases are assumed to be lower for a five-year select period beginning with the December 31, 2011 valuation. Representative rates are as follows:

	Annual Increase	
Service	**Select Period**	**Ultimate Period**
0	7.0%	7.5%
5	4.5	5.0
10	3.0	4.5
20	3.0	4.5
30	3.0	4.0

SEPARATIONS FROM ACTIVE SERVICE: For death rates, RP-2000 Combined Mortality Table set forward two years for males and set forward one year for females and using a Scale AA projection to 2020 was used. Representative values of the assumed annual rates of separation from active service are as follows:

	Annual Rate of Withdrawal				Annual Rate of Disability
Age	**Less than One Year of Service**	**Between One and Three Years of Service**	**Between Three and Five Years of Service**	**Five or More Years of Service**	
20	25.0%	10.0%	7.5%	5.0%	0.01%
25	25.0	10.0	7.5	5.0	0.02
30	25.0	10.0	7.5	3.5	0.03
35	25.0	10.0	4.0	2.8	0.05
40	25.0	10.0	4.0	2.3	0.09
45	25.0	10.0	4.0	1.5	0.15
50	25.0	10.0	4.0	1.5	0.27
55	25.0	10.0	4.0	1.5	0.42
60	25.0	10.0	4.0	1.5	0.00
65	25.0	10.0	4.0	1.5	0.00
70	25.0	10.0	4.0	1.5	0.00

Age	Early Retirement	Less than 30 Years of Service	30 Years of Service	31+ Years of Service
	Annual Rate of Retirement			
	Groups C, D, E, and F			
50			45.0	30.0
55	10.0%		45.0	30.0
59	10.0		45.0	30.0
60		25.0%	30.0	25.0
61		20.0	20.0	20.0
65		20.0	20.0	20.0
70		100.0	100.0	100.0
	Group G			
57	10.0%			
60	20.0			
62	20.0		25.0%	20.0%
65	20.0		25.0	20.0
67		25.0%	25.0	20.0
69		20.0	20.0	20.0
70		100.0	100.0	100.0

DEATHS AFTER RETIREMENT: The RP-2000 Combined Mortality Table set forward two years for males and set forward one year for females and using a Scale AA projection to 2020 is used for the period after retirement and for dependent beneficiaries. The RP-2000 Disabled Mortality Table (set back 5 years for females) is used for the period after disability.

PERCENT MARRIED: 70% of male members and 30% of female members are assumed to be married with the male three years older than his spouse.

ASSETS: Market Value of Assets.

WITHDRAWAL ASSUMPTION: It is assumed that 100% of vested members who terminate with less than 15 years of service elect to withdraw their contributions and that 50% of vested members who terminate with 15 or more years of service elect to withdraw their contributions while the remaining 50% elect to leave their contributions in the plan in order to be eligible for a benefit at their retirement date.

VALUATION METHOD: Entry age actuarial cost method.