Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve

city of CINCINNATI RETIREMENT

Report of the Actuary on the Annual Valuation of the Retirement System for Employees of the City of Cincinnati

Pension Report

Prepared as of December 31, 2012 and Approved by the Board of Trustees on May 2, 2013

www.CavMacConsulting.com

May 24, 2013

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

Members of the Board:

We are pleased to submit the results of the pension actuarial valuation of the Retirement System for Employees of the City of Cincinnati prepared as of December 31, 2012. The purpose of this report is to provide a summary of the funded status of the System as of December 31, 2012, to recommend rates of contribution and to provide accounting information under Governmental Accounting Standards Board Statements No. 25 and No. 27 (GASB 25 and 27).

On the basis of the valuation, it is recommended that employer contributions to the System be set at a rate of 48.79% of payroll (approximately $78,101,000) for the fiscal year ending December 31, 2014. This includes $5,713,578, or 3.57% of payroll, for the 2007 Early Retirement Incentive Program (ERIP). The benefits of the System are included in the calculated contribution rate which is developed using the entry age cost method. Five-year smoothed market value of plan assets is used for the actuarial value of assets. Gains and losses are reflected in the unfunded accrued liability that is being amortized by regular annual contributions within a 30-year period.

Since the previous valuation, no changes were made to the methods, assumptions, or plan provisions.

The valuation has been prepared in accordance with the parameters set forth in Statements No. 25 and No. 27 of the Governmental Accounting Standards Board. The annual required contribution (ARC) for the City under GASB for the fiscal year ending December 31, 2014 is 48.79% of payroll, based on a 30-year period for amortization of the unfunded accrued liability. This includes $5,713,578, or 3.57% of payroll, for fiscal year 2014 to fund the Early Retirement Incentive Program.

This is to certify that the independent consulting actuary is a Member of the American Academy of Actuaries and has experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the System and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System. While not verifying the data at source, the actuary performed tests for consistency and reasonability.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

We trust that the report will meet the approval of the Board and will furnish the desired information concerning the financial condition of the System.

Respectfully submitted,

Edward J. Koebel

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

E H Gary

Eric Gary, FSA, FCA, MAAA
Chief Health Actuary

EJK/EG:bdm

\\fileserver\shared\City of Cincinnati\Pension\Valuation\2012\Report CRS 20121231.FINALdocx

TABLE OF CONTENTS

RETIREMENT SYSTEM FOR EMPLOYEES OF THE CITY OF CINCINNATI
REPORT OF THE ACTUARY
ON THE VALUATION
PREPARED AS OF DECEMBER 31, 2012

PENSION REPORT

SECTION I – SUMMARY OF PRINCIPAL RESULTS

1. For convenience of reference, the principal results of the current and preceding valuations are summarized below.

Valuation Date	December 31, 2012	December 31, 2011
Active members:		
Number*	3,017	2,948
Annualized compensation	$ 160,078,187	$ 157,813,151
Retired members and beneficiaries:		
Number	4,381	4,418
Annual allowances	$ 148,254,058	144,375,418
Number of terminated vested members	151	80
Assets:		
Market Value	$ 1,409,032,000	$ 1,353,822,000
Actuarial Value	1,367,695,506	1,466,077,334
Unfunded actuarial accrued liability	$ 862,122,656	$ 728,428,380
Amortization Period	30 years	30 years
Funded Ratio		
Market Value	63.2%	61.7%
Actuarial Value	61.3%	66.8%
Fiscal Year Ending	**December 31, 2014**	**December 31, 2013**
City annual required contribution rate (ARC):		
Normal	1.88%	2.51%
Accrued liability	43.34	36.75
Sub-total	45.22%	39.26%
ERIP**	3.57	3.19
Total	48.79%	42.45%
City annual required contribution in dollars (ARC):		
Normal	$ 3,009,000	$ 3,961,000
Accrued liability	69,378,000	57,996,000
Sub-total	$ 72,387,000	$ 61,957,000
ERIP**	5,714,000	5,042,000
Total	$ 78,101,000	$ 66,999,000

*In addition, there are 1,196 part-time employees at December 31, 2012.

**Contributions to the ERIP are $5,041,624 for the 2013 fiscal year and $5,713,578 for the 2014 fiscal year.

2. The major benefit and contribution provisions of the System as reflected in the valuation are summarized in Schedule G. No changes were made since the previous valuation.

3. Schedule E of this report outlines the full set of actuarial assumptions and methods used in the valuation. No changes were made since the previous valuation.

4. Schedule C shows the development of the actuarial value of assets. The entry age actuarial cost method was used to prepare the valuation. Schedule F contains a brief description of the actuarial cost method.

5. Comments on the valuation results as of December 31, 2012 are given in Section IV, comments on the experience and actuarial gains and losses during the valuation year are given in Section VII and further discussion of the contributions is set out in Section V.

SECTION II – MEMBERSHIP DATA

1. Data regarding the membership of the System for use as a basis of the valuation were furnished by the System. The valuation included 3,017 active members with annualized compensation totaling $160,078,187. In addition, there are 1,196 part-time employees. The majority of these part-time employees are seasonal employees that have a de minimis impact on the liabilities of the System.

2. The following table shows the number of retired members in receipt of a benefit and those members with a deferred benefit as of December 31, 2012 together with the amount of their annual retirement benefits payable under the System as of that date.

THE NUMBER AND ANNUAL BENEFITS OF RETIRED MEMBERS AND BENEFICIARIES AS OF DECEMBER 31, 2012

GROUP	NUMBER*	ANNUAL RETIREMENT BENEFITS
Participants Receiving Benefits	4,381	$ 148,254,058
Participants with a Deferred Benefit	151	2,165,579
Total	4,532	$ 150,419,637

*In addition, there are 6,112 inactive participants who are former employees who have an employee account balance in the plan but are not otherwise vested in an employer provided benefit.

3. Table 1 in Schedule H shows a reconciliation of participating members for the past plan year; Table 2 in Schedule H shows the distribution by age and years of membership service of the number of active members included in the valuation; and Table 3 shows the number and annual benefits of retired members and beneficiaries included in the valuation, distributed by age.

SECTION III – ASSETS

As of December 31, 2012, the total market value of assets amounted to $2,061,896,000, as reported by the auditor, of which $1,409,032,000 has been allocated for pension purposes. The actuarial value of assets used for the current pension valuation was $1,367,695,506. Schedule C shows the development of the actuarial value of assets as of December 31, 2012. Schedule D shows a reconciliation of the market value of asset balances from December 31, 2011 to December 31, 2012.

SECTION IV – COMMENTS ON VALUATION

1. Schedule B of this report contains the valuation balance sheet which shows the present and prospective assets and liabilities of the System as of December 31, 2012. The valuation was prepared in accordance with the actuarial assumptions set forth in Schedule E and the actuarial cost method which is described in Schedule F.

2. The valuation balance sheet shows that the System has total prospective liabilities of $2,378,036,266, of which $1,736,616,590 is for the prospective benefits payable on account of present retired members, beneficiaries of deceased members, and terminated members entitled to deferred benefits, and $641,419,676 is for the prospective benefits payable on account of present active members. Against these liabilities, the System has a total present actuarial value of assets of $1,367,695,506 as of December 31, 2012. The difference of $1,010,340,760 between the total liabilities and the total present assets represents the present value of future contributions.

3. The contributions to the System consist of normal contributions and accrued liability contributions. The valuation indicates that normal contributions at the rate of 10.88% of payroll are required under the entry age method. Of this amount, 9.00% will be paid by the members and the remaining 1.88% is payable by the City.

4. Prospective normal contributions at the rate of 10.88% have a present value of $148,218,104. When this amount is subtracted from $1,010,340,760, which is the present value of the total future contributions to be made, there remains $862,122,656 as the amount of unfunded accrued liability contributions. The development of the unfunded accrued liability is shown in Schedule A.

5. Of the $862,122,656, $42,651,782 is due to the Early Retirement Incentive Plan (ERIP) that is being funded with separate contributions by the City in the future (FY2012 through FY 2023). The schedule of ERIP contributions is as follows:

Fiscal Year	Contribution Amount*
2009*	$2,353,816
2010*	3,025,768
2011*	3,697,720
2012*	4,369,672
2013**	5,041,624
2014**	5,713,578
2015-2023**	6,177,557

*Determined by the previous actuary in letter dated May 23, 2008 and adjusted for payment timing.

**The schedule of contributions that was prepared by the previous actuary was revised such that the present value of the total payments in the table above is equal to the initial unfunded liability ($42,271,108) of the ERIP based upon the assumptions in the Plan as of the ERIP separation date.

6. As can be seen from Schedule I of our report, the System had significant actuarial losses for the year. Most of this loss came from the loss on the actuarial value of assets for the year. Although the System had a positive investment return for 2012 of 12.06%, the System still had a loss of $110 million due to the continued recognition of asset gains and losses for the past five years. This is mainly due to the 2008 economic downturn and the loss generated from the 2011 fiscal year which saw the market value of assets return only 0.88%. Please see Schedule D of our

report for a historical table of Market Value of Assets, Actuarial Value of Assets and the rates of return for each. The other components of the loss came from data adjustments and small losses in withdrawals from the System. These were offset by a gain in liabilities due to salary increases, which were lower than expected.

SECTION V – CONTRIBUTIONS PAYABLE

1. The contributions consist of a normal contribution and an accrued liability contribution as determined by actuarial valuation.
2. The normal contribution rate is calculated as the level percentage of payroll which, if applied for the average new member during the entire period of his anticipated covered service, would be required to meet the cost of all benefits payable on his behalf. On the basis of the valuation, the normal contribution rate was determined to be 10.88%. Of this amount, 9.00% will be paid by the members and the remaining 1.88% is payable by the City.
3. A contribution of 43.34% of payroll will liquidate the portion of the unfunded accrued liability not attributed to the ERIP within a 30-year period.
4. An additional contribution is required for the fiscal year ending December 31, 2014 of $5,713,578, or 3.57% of payroll, for the ERIP.
5. The total City contribution rate required for the fiscal year ending December 31, 2014 is, therefore, 48.79% of payroll.

6. The following table summarizes the employer contributions which were determined by the December 31, 2012 valuation and are recommended for use.

CITY ANNUAL REQUIRED CONTRIBUTIONS (ARC)
FOR FISCAL YEAR ENDING DECEMBER 31, 2014

	PERCENTAGE OF ACTIVE MEMBERS' COMPENSATION	EMPLOYER ANNUAL REQUIRED CONTRIBUTION (ARC)
Normal	1.88%	$ 3,009,000
Accrued Liability	43.34	69,378,000
Sub-Total	45.22%	$ 72,387,000
ERIP	3.57	5,714,000
Total	48.79%	$ 78,101,000

SECTION VI – ACCOUNTING INFORMATION

1. Governmental Accounting Standards Board Statements No. 25 and No. 27 set forth certain items of required supplementary information to be disclosed in the financial statements of the System and the employer. One such item is a distribution of the number of employees by type of membership, as follows:

NUMBER OF ACTIVE AND RETIRED PARTICIPANTS
AS OF DECEMBER 31, 2012

GROUP	TOTAL
Retired participants and beneficiaries currently receiving benefits	4,381
Terminated participants and beneficiaries entitled to benefits but not yet receiving benefits	151
Inactive participants*	6,112
Active Participants	
Full-Time	3,017
Part-Time	1,196
Total	14,857

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

2. Another such item is the schedule of funding progress as shown below.

SCHEDULE OF FUNDING PROGRESS
Dollar Amounts in Thousands

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b – a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b – a) / c)
12/31/2007	$1,794,406	$2,080,923	$286,517	86.2%	$182,396	157.1%
12/31/2008	1,490,497	2,094,762	604,265	71.2	164,640	367.0
12/31/2009	1,631,407	2,125,738	494,331	76.7	170,416	290.1
12/31/2010	1,565,949	2,085,987	520,038	75.1	167,589	310.3
12/31/2011	1,466,077	2,194,505	728,428	66.8	165,029	441.4
12/31/2012	1,367,695	2,229,818	862,123	61.3	167,148*	515.8

All figures prior to December 31, 2008 were reported by the previous actuary except the covered payroll figures which were reported in the City's financial statements.

*Includes $7,069,702 in part-time active employee compensation.

3. Following is the calculation of the annual pension cost and net pension obligation for the fiscal year ending December 31, 2012.

	Annual Pension Cost and Net Pension Obligation for Fiscal Year Ending December 31, 2012	
(a)	Employer annual required contribution*	$ 49,952,000
(b)	Interest on net pension obligation	9,643,000
(c)	Adjustment to annual required contribution	10,707,000
(d)	Annual pension cost (a) + (b) – (c)	$ 48,888,000
(e)	Employer contributions made for fiscal year ending December 31, 2012	33,608,000
(f)	Increase (decrease) in net pension obligation (d) – (e)	$ 15,280,000
(g)	Net pension obligation beginning of fiscal year	120,542,000
(h)	Net pension obligation end of fiscal year (f) + (g)	$ 135,822,000

* Developed from the December 31, 2010 valuation.

TREND INFORMATION
Dollar Amounts in Thousands

Year Ending	Annual Pension Cost (APC)	Percentage of APC Contributed	Net Pension Obligation (NPO)
December 31, 2010	$79,091,000	38%	$97,690,000
December 31, 2011	54,012,000	58	120,542,000
December 31, 2012	48,888,000	69	135,822,000

4. The annual required contribution (ARC) as a percentage of payroll, determined in accordance with the parameters of GASB 25/27, is shown below.

FISCAL YEAR ENDING DECEMBER 31, 2014	PERCENTAGE OF ACTIVE MEMBERS' COMPENSATION	EMPLOYER ANNUAL REQUIRED CONTRIBUTION (ARC)
Normal	1.88%	$ 3,009,000
Accrued liability	43.34	69,378,000
Sub-Total	45.22	$ 72,387,000
ERIP	3.57	5,714,000
Total	48.79%	$ 78,101,000

5. Additional information as of December 31, 2012 follows:

Valuation date	12/31/2012
Actuarial cost method	Entry age
Amortization period	Level dollar open
Remaining amortization period	30 years
Asset valuation method	Five-year smoothed market value
Actuarial assumptions:	
Investment rate of return (includes inflation)	7.50%
Projected salary increases (includes inflation)*	3.00% - 7.50%
Inflation	3.00%
Cost-of-living adjustments	2.00% - 3.00%

*Select salary increases for 5-year period beginning December 31, 2011.

SECTION VII – EXPERIENCE

Actual experience will never (except by coincidence) coincide exactly with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year to year fluctuations are common. Detail on the derivation of the experience gain/(loss) for the year ended December 31, 2012 is shown below.

			$ Thousands
(1)	UAAL* as of December 31, 2011	$	728,428
(2)	Total normal cost from last valuation		18,164
(3)	Total actual contributions		48,427
(4)	Interest accrual: (1) x .075 + [[(2) – (3)] x .0375]		53,498
(5)	Expected UAAL before changes: (1) + (2) – (3) + (4)	$	751,663
(6)	Change due to plan amendments		0
(7)	Change due to actuarial assumptions or methods		0
(8)	Expected UAAL after changes: (5) + (6) + (7)	$	751,663
(9)	Actual UAAL as of December 31, 2012	$	862,123
(10)	Gain/(loss): (8) – (9)	$	(110,460)
(11)	Gain/(loss) as percent of actuarial accrued liabilities at start of year ($2,194,505)		(5.0)%

*Unfunded actuarial accrued liability, prior to the restatement of the actuarial value of assets..

Valuation Date December 31	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2009	6.8%
2010	(5.5)%
2011	(7.2)%
2012	(5.0)%

SCHEDULE A

DEVELOPMENT OF THE UNFUNDED ACTUARIAL ACCRUED LIABILITY
AS OF DECEMBER 31, 2012

(1) Present value of prospective benefits:		
(a) Present active full time members	$	637,866,475
(b) Present active part time and seasonal members		3,553,201
(c) Present retired members, beneficiaries, former members entitled to deferred vested benefits and inactive members		1,736,616,590
(d) Total	$	2,378,036,266
(2) Present value of future normal contributions		148,218,104
(3) Actuarial accrued liabilities: 1(d) – (2)	$	2,229,818,162
(4) Actuarial value of assets		1,367,695,506
(5) Unfunded actuarial accrued liability (UAAL): (3) – (4)	$	862,122,656
(6) Contribution Rate as a % of Payroll		
(a) Normal Cost		1.88%
(b) UAAL		43.34%
(c) Sub-Total		45.22%
(d) ERIP		3.57%
(e) Total		48.79%
(7) Contribution in dollars		
(a) Normal Cost	$	3,009,000
(b) UAAL		69,378,000
(c) Sub-Total	$	72,387,000
(d) ERIP		5,714,000
(e) Total	$	78,101,000

SCHEDULE B

VALUATION BALANCE SHEET

Present and prospective assets and liabilities as of December 31, 2012:

ACTUARIAL LIABILITIES		
Present value of prospective benefits payable on account of present retired members, beneficiaries of deceased members, terminated members entitled to deferred benefits and inactive members		$1,736,616,590
Present value of prospective benefits payable on account of present active members		641,419,676
Total liabilities		$2,378,036,266
PRESENT AND PROSPECTIVE ASSETS		
Actuarial value of assets		$1,367,695,506
Present value of future contributions		
City and Member Normal contributions	$ 148,218,104	
Unfunded accrued liability contributions	862,122,656	
Total prospective contributions		$1,010,340,760
Total assets		$2,378,036,266

SCHEDULE C

DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS

(1)	Actuarial Value of Assets as of December 31, 2011		$ 1,466,077,334
(2)	Market Value of Assets as of December 31, 2012		$ 1,409,032,000
(3)	Market Value of Assets as of December 31, 2011		$ 1,353,822,000
(4)	Net Cash Flow During Plan Year		
	(a)	Contributions	$ 48,427,000
	(b)	Benefit Payments and Net Transfers	150,399,000
	(c)	Administrative Expenses	1,297,000
	(d)	Investment Expenses	6,128,000
	(e)	Net Cash Flow: (a) – (b) – (c) – (d)	$ (109,397,000)
(5)	Investment Income		
	(a)	Market Total: (2) – (3) – (4)(e)	$ 164,607,000
	(b)	Assumed Rate	7.50%
	(c)	Amount for Immediate Recognition	
	[(3) x (5)(b)] + [[(4)(a) – (4)(b)] x (5)(b) x 0.5] + (4)(c) + (4)(d)		$ 105,137,700
	(d)	Amount for Phased-In Recognition: (5)(a) – (5)(c)	$ 59,469,300
(6)	Recognized Amounts for Plan Year		
	(a)	Current Year: 0.20 x (5)(d)	$ 11,893,860
	(b)	First Prior Year	(19,853,392)
	(c)	Second Prior Year	13,512,648
	(d)	Third Prior Year	26,295,934
	(e)	Fourth Prior Year	(125,971,578)
	(f)	Total Recognized Investment Gain/(Loss)	$ (94,122,528)
(7)	Actuarial Value of Assets as of December 31, 2012		
	(1) + (4)(e) + (5)(c) + (6)(f)		$ 1,367,695,506
		80% of Market Value EOY	1,127,225,600
		120% of Market Value EOY	1,690,838,400
(8)	Final Actuarial Value of Assets as of December 31, 2012		$ 1,367,695,506
(9)	Rate of Return on Actuarial Value		0.25%

SCHEDULE D

CURRENT ASSET INFORMATION

Receipts		
(1) Contributions		$ 48,427,000
(2) Investment Income		
• Interest and Dividends	$ 32,217,000	
• Net Appreciation (Depreciation) in Fair Value of Investments	132,055,000	
• Other Investment Earnings	335,000	
• Investment Expenses	(6,128,000)	
Total Investment Income		$ 158,479,000
(3) Total Receipts		$ 206,906,000
Disbursements		
(4) Benefits Paid	$ 150,399,000	
(5) Administrative Expenses	1,297,000	
(6) Total Disbursements		$ 151,696,000
(7) Excess of Receipts Over Disbursements: (3) - (6)		$ 55,210,000
Reconciliation of Asset Balances		
(8) Market Value at December 31, 2011		$1,353,822,000
(9) Excess of Receipts Over Disbursements		55,210,000
(10) Market Value at December 31, 2012		$1,409,032,000
(11) Estimated Rate of Return on Market Value of Assets		12.06%

HISTORICAL ASSET INFORMATION
($ in thousands)

Valuation Date	Actuarial Value of Assets		Market Value of Assets	
	Amount	Rate of Return	Amount	Rate of Return
12/31/2007	$1,794,406	9.09%	$1,829,302	7.50%
12/31/2008	1,490,497	1.54	1,242,081	(27.45)
12/31/2009	1,631,407	0.16	1,370,133	18.93
12/31/2010	1,565,949	2.07	1,445,156	13.11
12/31/2011	1,466,077	0.24	1,353,822	0.88
12/31/2012	1,367,695	0.25	1,409,032	12.06

Figures prior to December 31, 2008 are based upon amounts reported in the City's financial statements.

SCHEDULE E

OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS

INVESTMENT RATE OF RETURN: 7.50% per year, net of expenses.

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: Actuarial value, as developed in Schedule C. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected market value of assets, based on the assumed valuation rate of return. The amount recognized each year is 20% of the difference between market value and expected market value. In addition, the actuarial value of assets cannot be less than 80% or more than 120% of the market value of assets.

WITHDRAWAL ASSUMPTION: It was assumed that 50% of the vested members who terminate 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. See Schedule F for a brief description of this method.

SCHEDULE F

ACTUARIAL COST METHOD

1. The valuation is prepared on the projected benefit basis, under which the present value, at the interest rate assumed to be earned in the future (currently 7.50%), of each member's expected benefits at retirement or death is determined, based on age, service and sex. The calculations take into account the probability of a member's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his terminating with a service, disability or survivor's benefit. The present value of the expected benefits payable on account of the active members is added to the present value of the expected future payments to retired members and beneficiaries to obtain the present value of all expected benefits payable from the System on account of the present group of members and beneficiaries.
2. The employer contributions required to support the benefits of the System are determined following a level funding approach, and consist of a normal contribution and an accrued liability contribution.
3. The normal contribution is determined using the entry age actuarial cost method. Under this method, a calculation is made to determine the level percentage of payroll which, if applied for the average new member during the entire period of his anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his behalf.
4. The unfunded accrued liability is determined by subtracting the present value of prospective employer normal contributions and member contributions, together with the current actuarial value of assets held, from the present value of expected benefits to be paid from the System.

SCHEDULE G

SUMMARY OF MAIN SYSTEM PROVISIONS
AS INTERPRETED FOR VALUATION PURPOSES

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.

Benefit Formula Multiplier

<u>Groups AB, C, D, benefits accrued prior to January 1, 2014 for group E, and benefits accrued prior to July 1, 2011 for group F:</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 but before January 1, 2010, benefits are calculated using a 2.50% multiplier. For members hired on or after January 1, 2010, benefits are calculated using a 2.20% multiplier.

Benefits accrued on or after January 1, 2014 for group E, benefits accrued on or after July 1, 2011 for group F, and group G:

Benefit is calculated using a 2.20% multiplier for the first 30 years of service and a 2.00% multiplier for years above 30 years of service.

Average Highest Compensation

Groups AB, C, D, benefits accrued prior to January 1, 2014 for group E, and benefits accrued prior to July 1, 2011 for group F:

Average of the highest three consecutive years of compensation.

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.

Benefits accrued on or after January 1, 2014 for group E, benefits accrued on or after July 1, 2011 for group F, and group G:

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.

Normal Retirement Benefit

Eligibility

Groups AB, C, D, benefits accrued prior to January 1, 2014 for group E, and benefits accrued prior to July 1, 2011 for group F:

For members hired before January 1, 2010: age 60 with 5 years of service or 30 years of service.

Benefits accrued on or after January 1, 2014 for group E, and benefits accrued on or after July 1, 2011 for group F:

Age 65 with 5 years of service or age 60 with 30 years of service.

Group G:

Age 67 with 5 years of service or age 62 with 30 years of service.

Benefit

a) An annuity provided by the number equal in value to the member's contributions with interest 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 multiplier, the member's average highest compensation, and the number of years of service.

In no event shall the retirement allowance be less than $4.00 per month multiplied by the member's years of credited service not in excess of 25 years.

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

Early Retirement Benefit

Eligibility

Members retiring before July 1, 2011:

Age 55 with 25 years of service.

Effective July 1, 2011, members hired before January 1, 2010:

If retired prior to January 1, 2014:

Age 55 with 25 years of service or age 57 with 15 years of service.

If retired on or after January 1, 2014:

Age 57 with 15 years of service.

Effective July 1, 2011, members hired on or after January 1, 2010:

Age 57 with 15 years of service.

Benefit

Normal retirement benefit reduced according to actuarial equivalence from normal retirement age.

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.

SCHEDULE H

TABLE 1

STATUS RECONCILIATION OF PARTICIPATING MEMBERS

	Active Full Time	Active Part Time	Receiving Benefits	Deferred Benefits	Total
Participants as of December 31, 2011	2,948	1,170	4,418	80	8,616
A. Receiving Benefits	(83)	(3)	97	(11)	
B. Terminated Vested	(18)	(4)		22	
C. Terminated Non-Vested	(30)	(373)			(403)
D. Deaths	(6)		(137)		(143)
E. Rehires	18	51		(2)	67
F. New Participants	188	503			691
G. Part Time to Full Time	63	(63)			
H. Full Time to Part Time	(15)	15			
I. Refunds	(48)	(100)		(1)	(149)
J. Data Corrections			3	63	66
Participants as of December 31, 2012	3,017	1,196	4,381	151	8,745

In addition, there are 6,112 inactive participants who are former employees who have an employee account balance in the plan but are not otherwise vested in an employer provided benefit.

SCHEDULE H
(Continued)

TABLE 2

SCHEDULE OF ACTIVE MEMBERS BY AGE AND SERVICE
AS OF DECEMBER 31, 2012

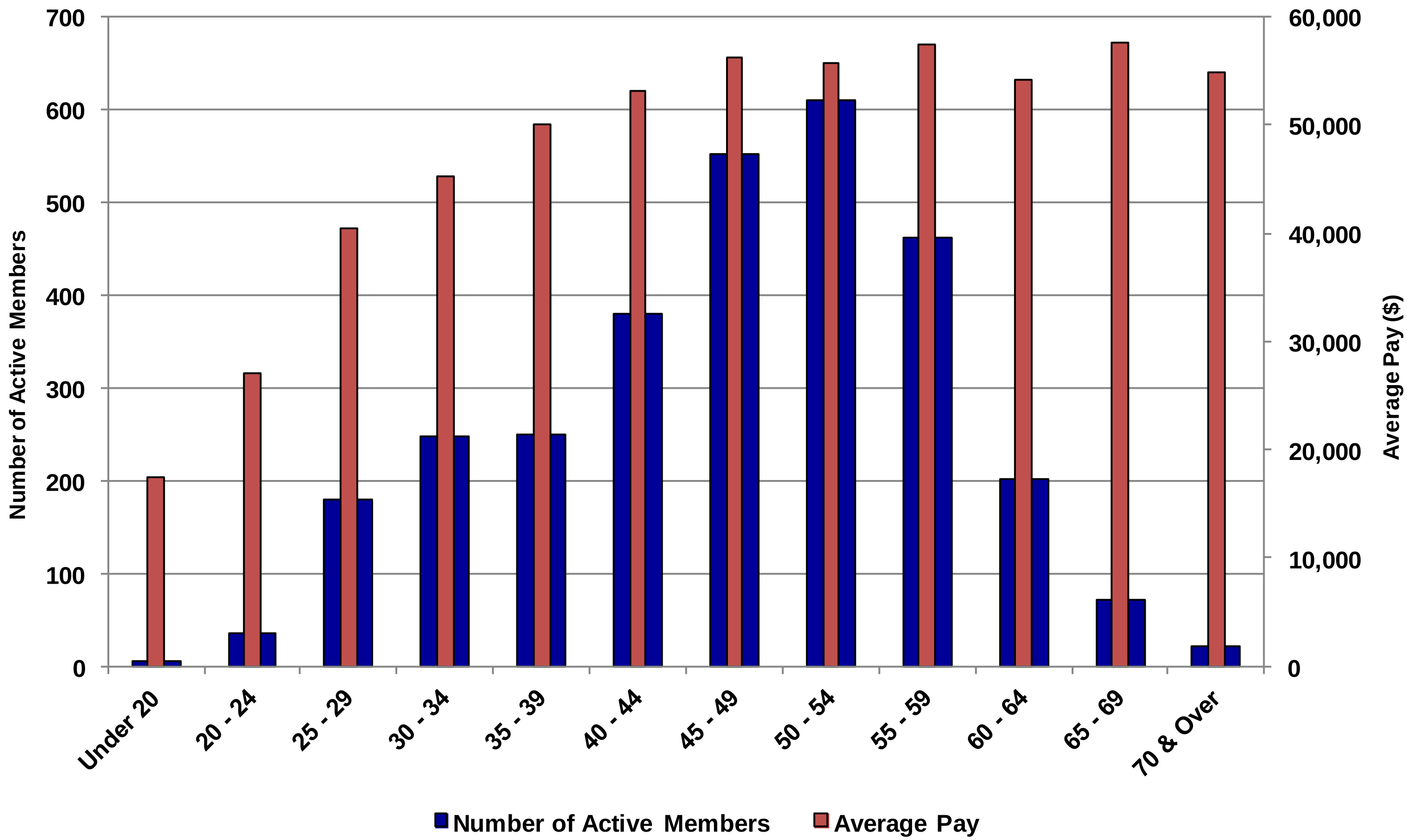
	Completed Years of Service							
Age	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30+	Total
Under 20	5							5
Avg Pay	17,483							17,483
20 - 24	34	2						36
Avg Pay	26,330	40,361						27,109
25 - 29	143	36	1					180
Avg Pay	39,278	45,444	38,995					40,510
30 - 34	135	71	39	2				247
Avg Pay	43,850	45,922	47,737	61,115				45,199
35 - 39	83	75	68	23	1			250
Avg Pay	46,439	48,626	53,894	56,825	43,037			50,065
40 - 44	91	92	91	54	48	4		380
Avg Pay	50,950	54,527	50,531	52,202	61,071	49,044		53,152
45 - 49	65	61	90	80	189	67		552
Avg Pay	50,052	50,250	53,221	60,187	58,740	60,311		56,279
50 - 54	49	59	72	70	188	143	30	611
Avg Pay	48,411	46,766	49,241	52,816	57,338	62,049	66,685	55,690
55 - 59	38	41	52	51	129	118	34	463
Avg Pay	45,989	63,569	52,111	53,863	56,067	61,736	67,659	57,513
60 - 64	18	20	33	31	51	35	13	201
Avg Pay	57,977	41,772	53,250	49,497	54,717	55,935	73,861	54,125
65 - 69	11	8	8	11	14	14	5	71
Avg Pay	37,692	101,180	50,903	53,389	57,271	52,307	68,060	57,647
70 & Over	2		2	3	5	3	6	21
Avg Pay	10,072		41,166	54,696	45,903	106,397	55,952	54,809
Total	674	465	456	325	625	384	88	3,017
Avg Pay	44,305	51,003	51,438	54,748	57,457	60,948	67,467	53,059

Average Age 47.00 Average Service 14.17

SCHEDULE H
(Continued)

CHART 1

DISTRIBUTION OF ACTIVE MEMBERS BY AGE
AS OF DECEMBER 31, 2012



SCHEDULE H
(Continued)

TABLE 3

SCHEDULE OF RETIRED MEMBERS AND BENEFICIARIES
AS OF DECEMBER 31, 2012

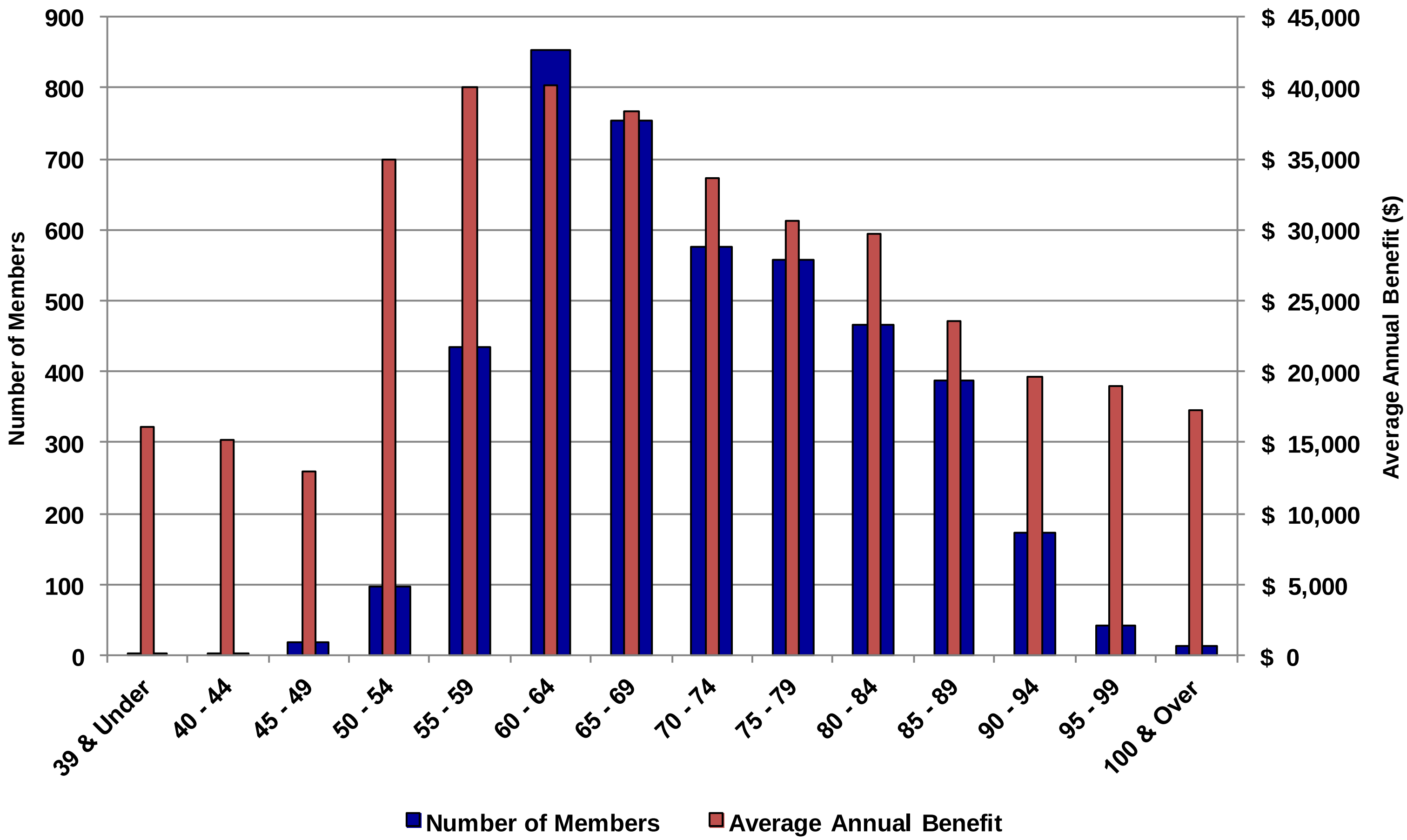
Attained Age	Number of Members	Total Annual Benefits	Average Annual Benefit
39 & Under	3	$ 48,298	$ 16,099
40 - 44	3	45,585	15,195
45 - 49	17	219,900	12,935
50 - 54	98	3,423,434	34,933
55 - 59	435	17,411,201	40,026
60 - 64	853	34,301,375	40,213
65 - 69	755	28,905,043	38,285
70 - 74	577	19,387,330	33,600
75 - 79	557	17,064,205	30,636
80 - 84	466	13,863,828	29,751
85 - 89	388	9,152,928	23,590
90 - 94	174	3,409,902	19,597
95 - 99	42	795,854	18,949
100 & Over	13	225,175	17,321
Total	**4,381**	**$ 148,254,058**	**$ 33,840**

In addition, there are 151 deferred vested employees and beneficiaries entitled to deferred annual benefits totaling $2,165,579.

<u>**SCHEDULE H**</u>
(Continued)

CHART 2

**DISTRIBUTION OF RETIRED MEMBERS AND BENEFICIARIES
AS OF DECEMBER 31, 2012**



SCHEDULE I

ANALYSIS OF FINANCIAL EXPERIENCE

Gains & Losses in Accrued Liabilities
Resulting from Difference Between
Assumed Experience & Actual Experience
($ Thousands)

Type of Activity	$ Gain (or Loss) For Year Ending 12/31/2012	$ Gain (or Loss) For Year Ending 12/31/2011
Age & Service Retirements. If members retire at older ages, there is a gain. If younger ages, a loss.	$ 5,465	$ (3,146)
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	622	237
Death-in-Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	(822)	(851)
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	(1,869)	(333)
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	10,524	7,942
New Members. Additional unfunded accrued liability will produce a loss.	(1,157)	(483)
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	(109,967)	(124,904)
Death After Retirement. If retirants live longer than assumed, there is a loss. If not as long, a gain.	(269)	1,029
Other. Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	(12,987)	(28,752)
Gain (or Loss) During Year From Experience	$ (110,460)	$ (149,261)
Non-Recurring Items. Adjustments for plan amendments, assumption changes, or method changes.	0	(46,973)
Composite Gain (or Loss) During Year	$ (110,460)	$ (196,234)