Actuarial Valuation Report
for the
Employees' Retirement System
of the City of Baltimore

as of June 30, 2012

Produced by Cheiron

November 2012

Classic Values, Innovative Advice

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November 20, 2012

Board of Trustees
Employees' Retirement System
7 East Redwood Street
12th Floor
Baltimore, Maryland 21202-3470

Dear Members of the Board:

We are pleased to submit the June 30, 2012 actuarial valuation of the Employees' Retirement System of the City of Baltimore. This report contains information on System assets, liabilities, and contributions as well as discloses employer contribution levels.

The purpose of this report is to present the annual actuarial valuation of the Employees' Retirement System of the City of Baltimore. This report is for the use of the Employees' Retirement System's Retirement Board and its auditors in preparing financial reports in accordance with applicable law and accounting requirements.

In preparing our report, we relied on information (some oral and some written) supplied by the System's staff. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice #23 *Data Quality*.

To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

This report was prepared solely for the Employees' Retirement System of the City of Baltimore for the purposes described herein. This valuation report is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

Sincerely,
Cheiron

Kenneth Kent, FSA, FCA, MAAA	Anu Patel, FSA, MAAA
Principal Consulting Actuary	Consulting Actuary

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FOREWORD

Cheiron is pleased to provide the annual actuarial valuation report of the **Employees' Retirement System of the City of Baltimore** as of June 30, 2012. The purpose of this report is to:

1) **measure and disclose**, as of the valuation date, the financial condition of the System,
2) **report** on past and expected financial trends,
3) **determine** the recommended contributions for FYE 2014,
4) **define** the variable benefit increase to be applied on January 1, 2013, and
5) **provide specific information** and documentation to support the City's funding obligation and information required by the auditors of the System.

An actuarial valuation establishes and analyzes System assets and liabilities on a consistent basis, and traces the progress of both from one year to the next. It includes measurement of the System's investment performance as well as an analysis of actuarial liability gains and losses. This valuation report is organized as follows:

Section I presents a summary of the valuation and compares this year's results to last year's results.

Section II contains exhibits relating to the valuation of assets.

Section III shows the various measures of liabilities and required contributions and presents an analysis of the experience gains and losses over the past year and the source of changes to the unfunded actuarial accrued liability.

Section IV develops the City contribution rate determined using actuarial techniques.

Section V shows the development of the variable benefit calculation.

The appendices to this report contain a summary of the System's membership at the valuation date, a summary of the major provisions of the System, and the actuarial methods and assumptions used in the valuation.

The actuarial assumptions reflect our understanding of the likely future experience of the System, and the assumptions as a whole represent an estimate for the future experience of the System. The results of this report are dependent upon future experience conforming to these assumptions. To the extent that future experience deviates from the actuarial assumptions, the true cost of the Plan could vary from our results.

SECTION I
SUMMARY

The key results of the June 30, 2012 actuarial valuation are as follows:

- This report reflects the change in actuarial cost method adopted by the Board of Trustees. The actuarial cost method was changed from the Projected Unit Credit method to the Entry Age Normal method to make funding measurements consistent with anticipated accounting measurements as required under the new accounting standards issued by the Governmental Accounting Standards Board (GASB). This change resulted in an increase in the total lump sum cost of $0.1 million and an increase in unfunded actuarial liability of $100.2 million.

- Investments earned 1.62% on a market value basis. The expected rate of return is defined by the definition of *regular interest* in the City Code which is 6.55% for participant liability in pay status and 7.55% for all other liabilities. For comparing the actual return we determined a liability weighted expected return (taking the regular interest times a ratio of the respective present value of benefits over the total present value of benefits of the System) which aggregates these two values resulting in an expected return this year of 7.11%.

- The net investment return required for an additional variable cost-of-living increase in retiree benefits based on investment earnings was the 6.55% during FYE 2012. Additionally, the variable portion of the cost-of-living increase is limited by the Consumer Price Index for the year ending June 30, 2012, which was 1.66%. Because investment earnings were below 6.55% for FYE 2012, there is no variable benefit increase applicable.

- The actuarial asset value return was 3.89%, which produced a net loss of $49.1 million to the Fund this year when measured against the expected return of 7.11%.

- The unfunded actuarial liability increased from $530.2 million on June 30, 2011 to $681.6 million on June 30, 2012, due to the investment loss of $49.1 million, liability loss of $20.6 million and a liability increase of $100.1 million resulting from the change in funding method. Gains and losses are presented in detail in Section III of this report.

- The System's funded ratio which is the ratio of actuarial asset value to actuarial liability decreased from 72.7% last year to 67.7% this year.

- The total recommended contribution increased by 7.5% from $88,300,214 for FYE 2013 to $94,917,886 for FYE 2014 as a reflection of the prior years' experience and increased unfunded actuarial liability (UAL) as of June 30, 2012. This represents a projected increase in cost as a percent of pay from 22.47% to 24.30%. The City's portion of the cost net of Detention Services and Department of Education for FYE 2014 is $81,263,688 compared to $75,965,579 for FYE 2013. The School Board will contribute for Department of Education participants, and the State will contribute for Detention Services participants.

- The funding policy adopted by the Board provides for the unfunded actuarial liability to be amortized over a fixed period of 20 years targeting 100% funding by the fiscal year ending 2032. As of the current valuation, the remaining amortization period is 19 years.

SECTION I
SUMMARY

The tables below provide details on the development of the FYE 2014 contribution results, unfunded actuarial liabilities, and statistics on Plan membership.

Table I-1
Valuation Summary

		2011 Valuation Applies to FYE 2013 Amount	2011 Valuation % of Pay	2012 Valuation Applies to FYE 2014 Amount	2012 Valuation % of Pay
1.	**Contributions**				
	Total Normal Cost	$ 35,486,309	9.03%	$ 26,350,603	6.75%
	Expected Employee Contributions	13,405	0.00%	124,447	0.03%
	Normal Cost	$ 35,472,904	9.03%	$ 26,226,156	6.72%
	Allocation from 6/30/2000 excess earnings to pay Ordinance 01-189 normal cost	(2,716,247)	-0.69%	(2,824,896)	-0.72%
	Amortization of unfunded actuarial liability	49,192,497	12.52%	64,689,586	16.56%
	Interest to beginning of next FY	6,351,060	1.62%	6,827,040	1.75%
	Total lump sum cost	$ 88,300,214	22.47%	$ 94,917,886	24.30%
	Total covered payroll	$ 392,941,135		$ 390,557,576	
2.	**UNFUNDED LIABILITIES**				
	Actuarial Liability				
	Active	$ 727,431,374		$ 838,246,685	
	Retirees and dependents	1,169,599,360		1,228,202,331	
	Terminated vested	43,416,490		44,829,153	
	Total	$ 1,940,447,224		$ 2,111,278,169	
	Less: Actuarial value of assets	$ 1,410,211,059		$ 1,429,666,081	
	Unfunded actuarial liability	$ 530,236,165		$ 681,612,088	
	Funded Ratio	72.7%		67.7%	

SECTION I
SUMMARY

The following tables summarize changes in plan membership over the past year.

Table I-2
Active Membership Summary

	Active Members			Payroll		
	2011	**2012**	**% Increase**	**2011**	**2012**	**% Increase**
Class A	36	28	-22.22%	$ 1,412,939	$ 1,191,588	-15.67%
Class C	9,357	9,079	-2.97%	391,528,196	389,365,988	-0.55%
Total	9,393	9,107	-3.04%	$ 392,941,135	$ 390,557,576	-0.61%
Average				$ 41,833	$ 42,885	2.51%

Table I-3
Inactive Membership Summary

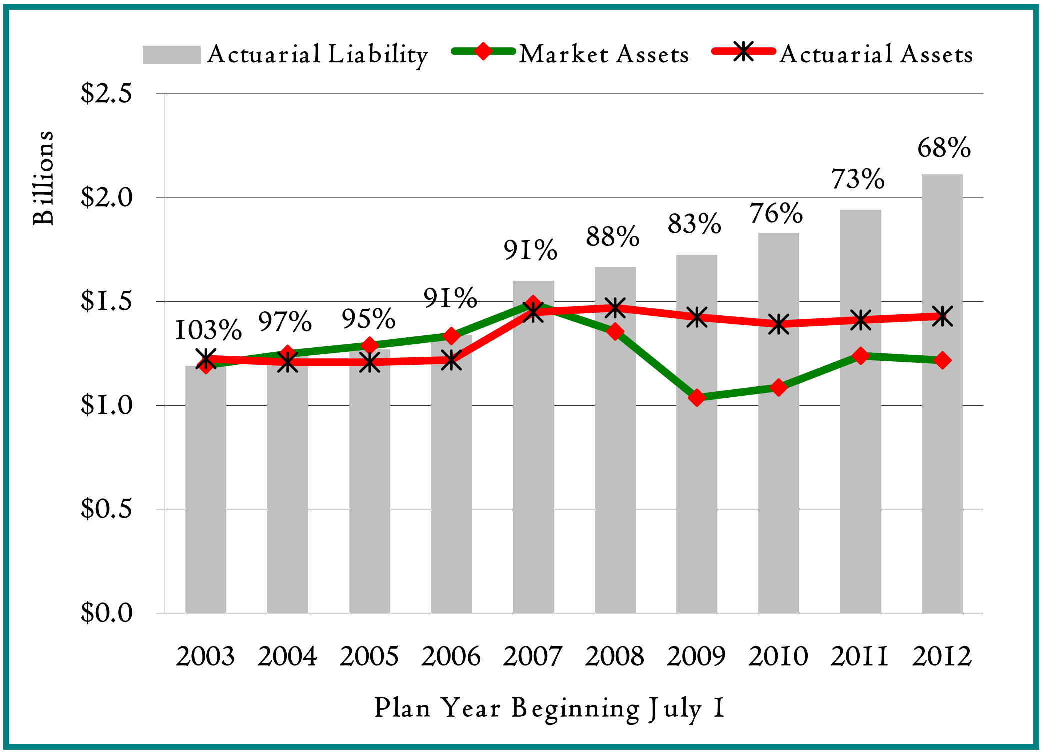
	Number of Retirees			Average Annual Benefit Amount		
	2011	**2012**	**% Increase**	**2011**	**2012**	**% Increase**
Normal Service Retirement	5,470	5,503	0.6%	$ 14,329	$ 15,169	5.9%
Discontinued Service	955	953	-0.2%	18,393	19,033	3.5%
Ordinary Disability	814	824	1.2%	8,315	8,672	4.3%
Accidental Disability	72	72	0.0%	19,086	19,995	4.8%
Social Security Equalization	10	8	-20.0%	4,933	6,313	28.0%
Beneficiaries of Above	1,244	1,254	0.8%	7,043	7,304	3.7%
Ordinary Death	108	107	-0.9%	10,467	10,927	4.4%
Special Death	20	18	-10.0%	21,087	21,915	3.9%
Total	**8,693**	**8,739**	**0.5%**	**$ 13,166**	**$ 13,843**	**5.1%**

SECTION I
SUMMARY

Historical Trends

It is important to take a step back from these latest results and view them in the context of the System's recent history. Below we present a series of charts which display key factors in the valuations of the last ten years.

Assets and Liabilities

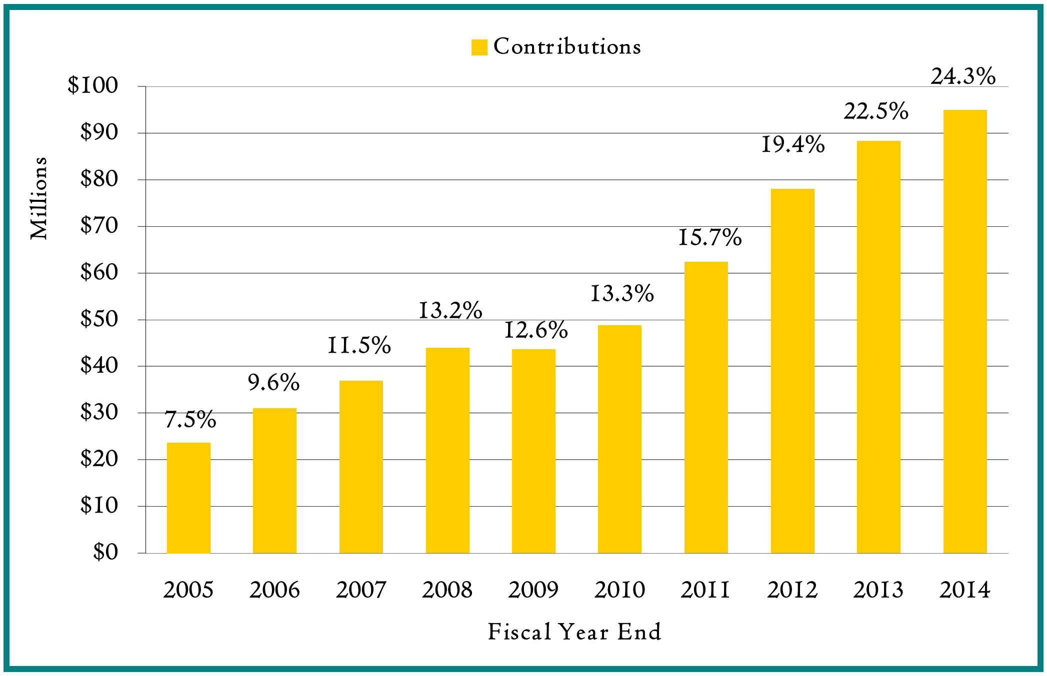


The chart above shows historical trends since 2003 for the market and actuarial value of assets compared to actuarial liability; we also show the progress of the Retirement System's funding ratios provided along the top of each bar. As you can see, the System had its highest funded percentage during this decade (103%) at July 1, 2003, just after the impact of the first market decline in 2000 through 2002 which resulted in the lower funded rates through 2006 as a function of the asset smoothing method deferring recognition of investment losses. There has been a similar but more dramatic and slower recovery from the market decline impacting the 2008/2009 time period. The increase in liability as of July 1, 2012 was mainly due to the change to the Entry Age Normal Cost funding method.

SECTION I
SUMMARY

Contribution Rates

This graph shows the historical trends for the actuarially calculated City contributions and contribution rate, denominated as a percent of payroll. Because there is a one-year lag in the determination of the City contributions, we show the actual contributions made through FYE 2012 and the estimated amounts for FYE 2013 and FYE 2014.



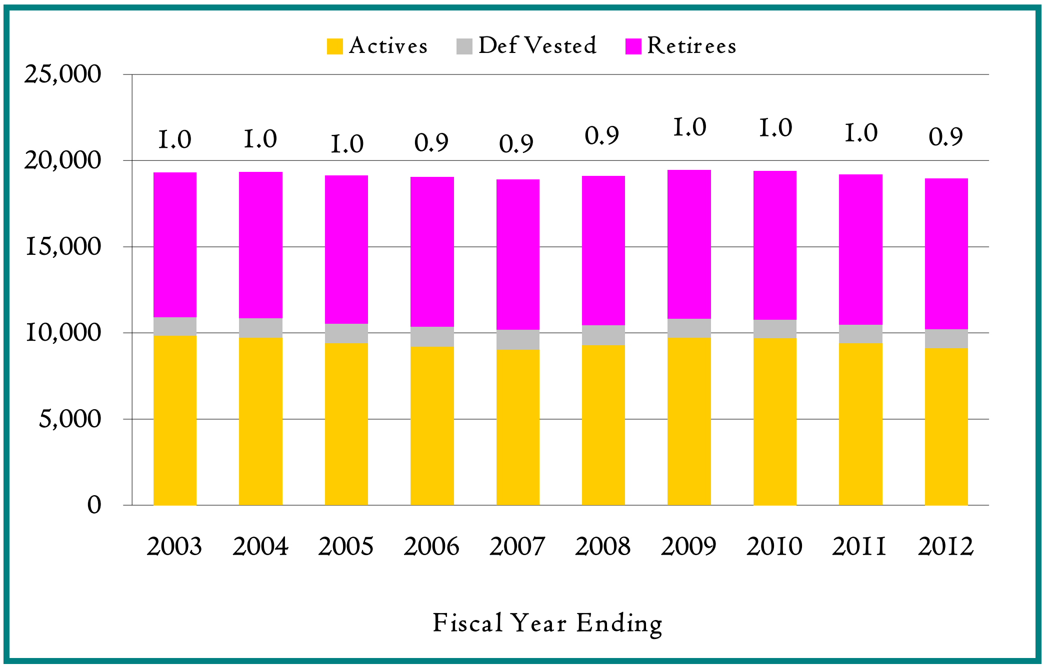
The higher costs in recent years are a reflection of an increasing unfunded actuarial liability in part due to investment losses.

SECTION I
SUMMARY

Participant Trends

As with many public employer pension funds in this country, the ratio of active to retired members is at or below one, representing the System's maturity.

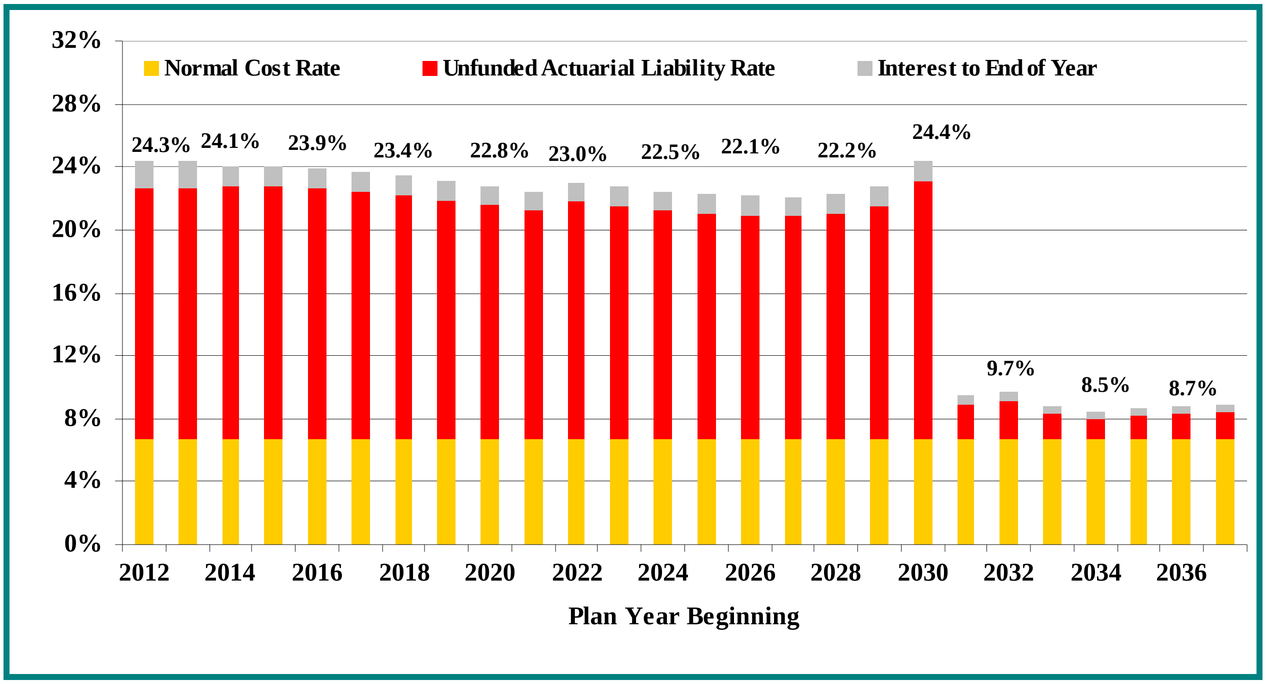
The following chart shows that the number of actives covered by the Plan has remained relatively stable over the nine-year period. The ratio of active to inactive participants as of the current valuation is 0.9. The implications of this ratio of approximately one active for each inactive participant is that the unfunded liabilities, which represent the System overall, is funded as a percent of active participant payroll.



SECTION I
SUMMARY

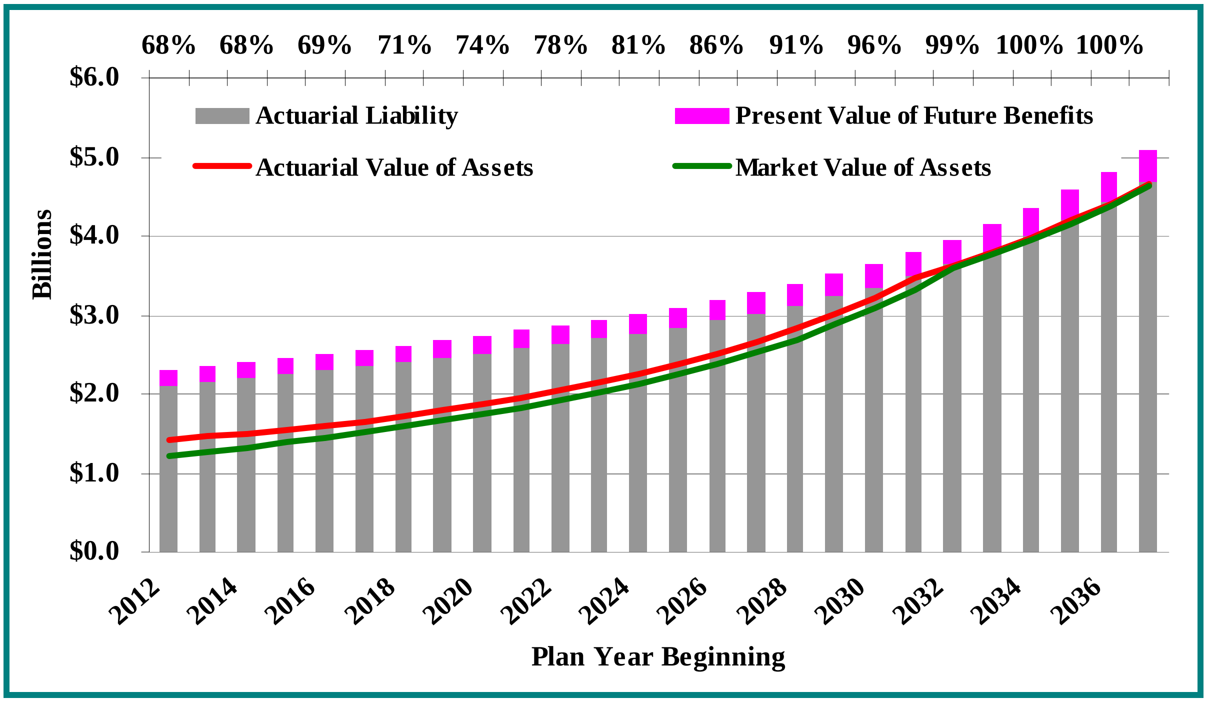
Base Line Projections

The chart on this page shows the expected progress of the System's funding status over the next 25 years measured in terms of the City's contribution rate and the funding ratio assuming the long-term return rate of 7.75%. The first chart below shows that the City's composite contribution rate is projected to first increase as the balance of the 2008/2009 investment loss gets included in the actuarial asset value and then decline as a percent of payroll as the unfunded actuarial liability (UAL) gets paid down the remaining 19-year period, if all actuarial assumptions are met, including the 7.75% anticipated investment return assumption. The increase in the UAL in year 2022 is due to the ending of the Ordinance 01-189 normal cost adjustment. After the 19-year period, the asset smoothing technique produces small losses, which are assumed to be paid in full to stay on target of 100% funded by the plan year beginning 2030.



SECTION I
SUMMARY

The next chart compares Assets and Liabilities and shows that if all actuarial assumptions are exactly met, the Plan's funded ratio shown along the top of the graph is projected to improve gradually from the current level of 68% to 100% funding in 19 years.

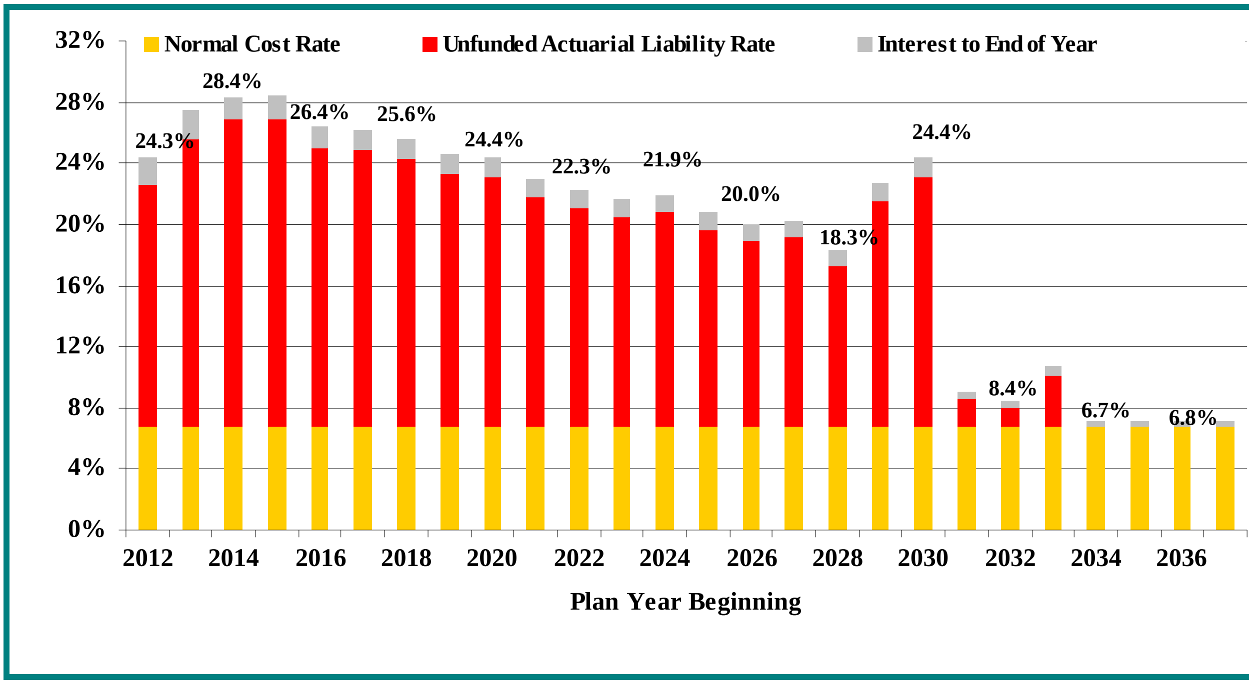


This pattern of funded status improvement is a function of the funding policy to amortize the UAL over a fixed 20-year period from 2011. It is important to also observe that the nature of the asset smoothing is for the market value to always be below the actuarial value of assets until such time that the fund experiences sufficient gains to reverse this relationship. At the end of the amortization period, the market and actuarial values are forced to be closer because it is assumed any UAL is fully funded in the year of occurrence.

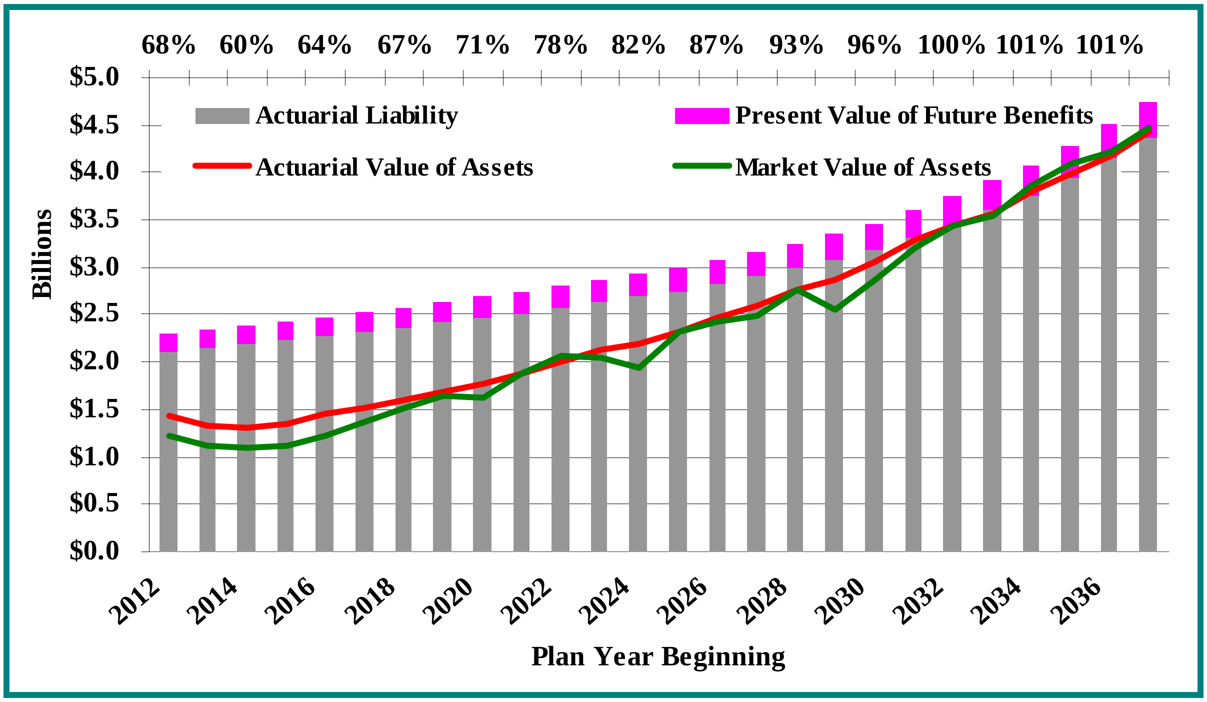
SECTION I
SUMMARY

The next two graphs show the same information as above but reflect the fact that the 7.75% investment return is not likely to actually occur each year but represents an average of more volatile returns. They are based on projected returns that while volatile produce the same average 7.75% return based on the following table.

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
-5.00%	2.00%	5.00%	11.00%	15.00%	12.00%	11.00%	1.00%	18.00%	13.00%	1.00%	-3.00%	22.00%
2025	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**
7.00%	4.00%	13.00%	-6.00%	14.00%	12.00%	7.00%	6.00%	12.00%	8.00%	6.00%	9.00%	12.00%



SECTION I
SUMMARY



This presents a more realistic view of the potential volatility of the System and highlights the long-term implications of the funding and funded status risks from market volatility.

SECTION II
ASSETS

The assets below are based on unaudited financial data furnished by the Retirement System's Office. The change in market value of assets during the valuation year ending June 30, 2012 is summarized below.

Table II-1
Assets of the Plan as of June 30, 2012

		Total Market Value
Fund Balance on June 30, 2011	$	1,238,621,977
Reconciliation adjustment to final 2011 fund balance		3,297,830
Adjusted Fund Balance on June 30, 2011	$	1,241,919,807
Contributions		
Member	$	359,028
Member Purchase Service		0
City/State	$	77,995,003
Net Investment Income		
Interest, Dividends, and Realized Capital Gains	$	19,154,163
Unrealized Gains (Losses)		6,758,532
Expenses		(6,215,546)
Total Investment Income	$	19,697,149
Administrative Expenses	$	(3,297,684)
Payments of Benefit & Refunds	$	(120,174,857)
Fund Balance on June 30, 2012	$	1,216,498,446

SECTION II
ASSETS

The chart below shows the calculation of investment gains and losses. On a market value basis, the Fund earned a 1.62% return amounting to total investment income of $19,697,149 during FY 2011-2012. Because the liabilities are valued using different discount rates for actives and inactives, we allocate this return over net actuarial liabilities of active and inactive participants separately. The investment loss on a market basis related to the inactive liabilities using the expected return rate of 6.55% was $60.0 million. The investment loss on a market basis related to the active liabilities using the expected return rate of 7.75% was $74.6 million. Combining these two losses in relation to the portion of funds in each group, results in a net System asset loss over the assumptions on a market value basis of $66.8 million.

Table II-2
Development of Investment Gain/(Loss)

1. Mean assets (see Section V)	$	1,217,711,637
2. Investment return (see Section V)		1.6200%
3. Investment Gain/(Loss)		
a. Relative to 6.55%: [(2.) – 6.55%] x (1.)	$	(60,033,184)
b. Relative to 7.75%: [(2.) – 7.75%] x (1.)	$	(74,645,723)
4. Funds as a portion of market value of assets		
a. Retired PVFB/Total PVFB		0.53483
b. (Total PVFB – Retired PVFB)/Total PVFB		0.46517
c. Total: (a.) + (b.)		1.00000
5. Total investment Gain/(Loss)		
a. Retired: (3a.) x (4a.)	$	(32,107,477)
b. Active: (3b.) x (4b.)	$	(34,723,039)
c. Total: (a.) + (b.)	**$**	**(66,830,516)**

The investment losses for FYE 2012 are taken together with past experience to determine an actuarial asset value for determining the City's contribution obligations.

SECTION II
ASSETS

The chart below shows the development of the unallocated earnings which represent the earnings above and below the valuation interest assumption. The excess earnings are calculated by the "asset averaging method" from Article 22(7) (b) of the Baltimore City Code. This method uses one-fifth of the excess earnings for the year to adjust the unfunded actuarial liability in the current year. The other four-fifths of the excess earnings is used to smooth investment experience, and occasionally has been used for purposes such as benefit improvements, contribution reductions and changes in actuarial assumptions when positive. The net unallocated accumulated earnings deficit is $(146,787,278) at June 30, 2012. This net deficit is gradually recognized in the future actuarial value of assets and impacts future contributions to the System. However, future investment gains/(losses) may ameliorate/(exacerbate) this recognition.

Table II-3
Development of Unallocated Earnings

The development of current unallocated excess/(deficit) earnings over the most recent two years is as follows:

	Valuation Date	
	6/30/2011	6/30/2012
1. Remaining net excess earnings from prior valuation	$ (266,912,265)	$ (116,653,582)
2. New investment Gain/(Loss)	129,312,514	(66,830,516)
3. Current net excess earnings (1. + 2.)	$ (137,599,751)	$ (183,484,098)
4. Variable benefit funds	(8,217,226)	0
5. One-fifth (credit) charge (3. + 4.) ÷ 5.	29,163,395	36,696,820
6. Net unallocated excess/(deficit) earnings (3. + 4. + 5.)	$ (116,653,582)	$ (146,787,278)

SECTION II
ASSETS

The chart below shows the calculation of the actuarial value of assets. The assets are smoothed using the unallocated earnings calculation. One additional item is included in the actuarial value of assets, which is the Normal Cost Reserve from Plan Changes.

Table II-4
Actuarial Value of Assets

The actuarial value of assets used to calculate the unfunded actuarial liability is developed as follows:

1. Assets in the Fund on 6/30/2012				$ 1,216,498,446
2. Net deferred recognition of unallocated excess/(deficit) earnings				$ (146,787,278)
3. Normal Cost Reserve from Plan Change				$ (21,919,857)*
4. Present value of prior year's contributions not yet paid				$ 88,300,214
5. Preliminary Actuarial value of assets on 6/30/2012 (1. – 2. + 3. + 4.)				$ 1,429,666,081 **
6. Corridor Testing:	80% of market value of assets	$	973,198,757	
	120% of market value of assets	$	1,459,798,135	
7. Final Actuarial value of assets on 6/30/2012				$ 1,429,666,081

* A reserve from the 6/30/2000 accumulated net excess earnings was established to pay the assumed increase in normal cost due to the Ordinance 01-189 improvements.

** The actuarial value of assets represents 117.5% of the market value which is down from the same measurement least year of 113.9%.

On actuarial asset value, the results are below expectation with an investment return for the year of 4.14%, which is compared to the liability weighted expected return of 7.11% (based on an 7.75% return for active participants and 6.55% return for non-active participants). This is due to the continued gradual recognition of prior year's investment losses.

SECTION II
ASSETS

The chart below shows the schedule of the Normal Cost Reserve from Plan Changes. This schedule was established during the 2001 valuation year as a means of funding a benefit enhancement by reserving the full amount of the cost at a time when the actuarial asset value exceeded the liabilities. The Normal Cost Reserve, which reflects the unamortized balance, is taken out of the actuarial value of assets until valuation year 2020, at which time, the Plan Changes will be fully amortized.

Table II-5
Normal Cost Reserve from Plan Change

June 30,	Additional Normal Cost	Normal Cost Reserve
2001	$1,835,000	$26,256,000
2002	1,908,400	26,374,680
2003	1,984,736	26,423,582
2004	2,064,125	26,393,954
2005	2,146,690	26,276,215
2006	2,232,558	26,059,887
2007	2,321,860	25,733,515
2008	2,414,734	25,284,587
2009	2,511,323	24,699,441
2010	2,611,776	23,963,167
2011	2,716,247	23,059,502
2012	2,824,897	21,919,857
2013	2,937,893	20,574,819
2014	3,055,409	19,003,788
2015	3,177,625	17,184,378
2016	3,304,730	15,092,276
2017	3,436,919	12,701,081
2018	3,574,396	9,982,135
2019	3,717,372	6,904,339
2020	3,866,067	3,433,957

SECTION III
LIABILITIES AND EXPERIENCE GAINS/(LOSSES)

The table below presents the actuarial liabilities by membership status and employer, and then allocates the assets in proportion to each employer's liabilities, to produce the unfunded actuarial liability by employer. On the following page, this unfunded liability is amortized over the remaining nineteen years, and that amount is then added to the Net Normal Cost (cost to cover the upcoming year's expected accruals less member contributions) to produce the recommended employer contributions.

Table III-1
Liability By Employee Group

	As of June 30, 2012			
	Dept. of Education	Detention Services	All Others	Total
Number of Participants				
Active	1,671	11	7,425	9,107
Service retired				6,464
Disabled				896
Terminated vested				1,100
Dependents				1,379
Total Participants				18,946
Annual compensation of active participants	$ 64,395,434	$ 626,385	$ 325,535,757	$ 390,557,576
Average Age	49.85	58.82	49.70	49.74
Average Service	12.28	30.89	14.26	13.92
Development of Unfunded Actuarial Liability				
Actuarial Liability				
Active	$ 105,953,334	$ 3,217,347	$ 729,076,004	$ 838,246,685
Retirees and dependents				1,228,202,331
Terminated vested				44,829,153
Total liabilities				$ 2,111,278,169
Actuarial value of assets				
Actives	$ 19,798,417	$ 601,193	$ 136,234,987	$ 156,634,597
Retirees and dependents				1,228,202,331
Terminated vested				44,829,153
Total assets				$ 1,429,666,081
Unfunded actuarial liability*	$ 86,154,917	$ 2,616,154	$ 592,841,017	$ 681,612,088

* Unfunded actuarial liability was allocated in proportion to each employee group actuarial active liability.

SECTION III
LIABILITIES AND EXPERIENCE GAINS/(LOSSES)

The table below presents the change in actuarial liabilities during the plan year. In general, the unfunded actuarial liability (UAL) of any retirement system is expected to change at each subsequent valuation for a variety of reasons. In each valuation, we report on those elements of change in the UAL which are of particular significance, potentially affecting the long-term financial outlook of the System. Below we present key changes in liabilities and assets since the last valuation.

Table III-2
Development of 2012 Experience Gain/(Loss)

	Actuarial Liability	Actuarial Value of Assets	Unfunded Actuarial Liability
1. Value as of June 30, 2011	$ 1,940,447,224	$ 1,410,211,059	$ 530,236,165
a. Actives at (7.75%)	727,431,374		
b. Inactives and TV at (6.55%)	1,213,015,850		
2. Additions			
a. Normal Cost	$ 35,472,904	$	$ 35,472,904
b. Expected Employer Contributions		77,995,002	(77,995,002)
c. Expected Member Contributions		13,405	(13,405)
3. Decreases			
a. Benefit Payments	$ (120,174,857)	$ (120,174,857)	$ 0
4. Expected Interest			
a. On 1 for one year	$ 135,828,470	$ 109,291,357	$ 26,537,113
b. On 2a for one year	2,749,150	0	2,749,150
c. On 2b for one year*	0	6,044,613	(6,044,613)
d. On 2c for ½ year	0	510	(510)
e. On 3a for ½ year	(3,873,307)	(4,569,886)	696,579
5. Expected Value June 30, 2012: (sum 1-4)	$ 1,990,449,584	$ 1,478,811,203	$ 511,638,381
6. Change in methods/assumptions	$ 100,193,758	$ 0	$ 100,193,758
7. Change in benefits	$ 0	$ 0	$ 0
8. Expected value after changes: (sum 5-7)	$ 2,090,643,342	$ 1,478,811,203	$ 611,832,139
9. Actual Value as of June 30, 2012	$ 2,111,278,169	$ 1,429,666,081	$ 681,612,088
10. Actual (Gain)/Loss:	$ 20,634,827	$ 49,145,122	$ 69,779,949
11. Total (Gain)/Loss: (6+7+10)	$ 120,828,585	$ 49,145,122	$ 169,973,707

* Assumes contributions made at year end.

SECTION III
LIABILITIES AND EXPERIENCE GAINS/(LOSSES)

Table III-3
Development of 2012 Experience Gain/(Loss)

1. Unfunded Actuarial Liability at 6/30/2011	$	530,236,165
2. Additions (normal cost and contribution)		(42,535,503)
3. Interest accrued*		23,937,719
4. Expected Unfunded Actuarial Liability at 6/30/2012 (1. + 2. + 3.)	$	511,638,381
5. Actual Unfunded Actuarial Liability at 6/30/2012	$	681,612,088
6. Total Gain/(Loss) at 6/30/2012 (4. – 5.)	$	(169,973,707)

* Interest rate depends on active versus inactive.

Table III-4
Elements of Actuarial Assets – Gain/(Loss)

1. Change in unallocated earnings – Gain/(Loss)	$	30,133,696
2. Change in Normal Cost Reserve – Gain/(Loss)		1,139,645
3. Asset Return – Gain/(Loss)		(80,418,463)
4. Total Actuarial Assets – Gain/(Loss)	$	(49,145,122)

Table III-5
Elements of Actuarial Liability – Gain/(Loss)

1. Age and Service Retirements - Gain/(Loss)	$	(3,885,183)
2. Disability Retirements - Gain/(Loss)		(3,942,459)
3. Death in Service Benefits - Gain/(Loss)		(2,907,223)
4. Withdrawal from Employment - Gain/(Loss)		(2,806,133)
5. Pay Increases - Gain/(Loss)		11,617,298
6. Death after Retirement - Gain/(Loss)		1,350,246
7. New Entrants - Gain/(Loss)		(4,455,648)
8. Method Change - Gain/(Loss)		(100,193,758)
9. Variable Benefit Gain/(Loss)		(17,675,619)
10. Other - Gain/(Loss)		2,069,894
11. Total Actuarial Liability - Gain/(Loss) (sum 1. to 8.)	$	(120,828,585)

SECTION IV
CONTRIBUTIONS

This table presents the components that make up the costs by employer including the normal cost reflective of the value of the benefits earned during the year, employee contributions for members under Class A membership, the proportional shares of the amortization cost to pay off the unfunded actuarial liability and the special credit normal cost defined in Ordinance 01-189, all brought forward with interest for the one year delay in funding to the next fiscal year beginning. Note that under the current funding policy, the unfunded actuarial liability is amortized over a fixed period of 20 years starting from fiscal year beginning 2011. As of the current valuation, the remaining amortization period is 19 years.

Table IV-1
Contribution Summary

	As of June 30, 2012				
	Dept of Education	Detention Services	All Others	Total	% Payroll
Total Normal Cost	$ 4,594,448	$ 35,598	$ 21,720,557	$ 26,350,603	6.75%
Expected Employee Contributions	15,005	0	109,442	124,447	0.03%
Net Normal Cost	$ 4,579,443	$ 35,598	$ 21,611,115	$ 26,226,156	6.72%
19-year amortization of Unfunded Actuarial Liability	$ 8,176,683	$ 248,291	$ 56,264,612	$ 64,689,586	16.56%
Allocation from 6/30/2000 excess earnings to pay Ordinance 01-189 normal cost	$ (357,063)	$ (10,842)	$ (2,456,991)	$ (2,824,896)	-0.72%
Net plan cost at 7/1/2012	$ 12,399,063	$ 273,047	$ 75,418,736	$ 88,090,846	22.56%
Interest to 7/1/2013	$ 960,927	$ 21,161	$ 5,844,952	$ 6,827,040	1.75%
Net plan cost at 7/1/2013	$ 13,359,990	$ 294,208	$ 81,263,688	$ 94,917,886	24.30%

SECTION V
VARIABLE BENEFIT

Below is the development of the variable benefit. The amended retirement ordinance provides for an automatic increase in benefits to certain retirees and beneficiaries of 1.5% for under age 65 and 2.0% for 65 and older, plus whenever the market value investment performance exceeds 6.55%, an additional variable benefit increase is granted up to a total when combined with the guaranteed increases of the CPI (Consumer Price Index) for the year. During FYE 2012, the Fund earned 1.62% on a market value basis. The CPI for the year ending June 30, 2012 is 1.66%. As determined below, there is no additional benefit increase applicable for the current year for any participants other than the guaranteed 1.50%/2.00% cost-of-living adjustment.

Table V-1
Variable Increase Calculation

1. Market Value of assets as of 6/30/2011	$	1,238,621,977
2. Market Value of assets as of 6/30/2012	$	1,216,498,446
3. Earnings during 6/30/2011 to 6/30/2012 (including expenses)	$	19,697,149
4. Mean Assets		
Half of [1. + 2. – 3.]	$	1,217,711,637
5. Investment return 2011-2012 (3. ÷ 4.)		1.62%
6. Earnings between 6.55% and 7.75%		
(Excess of (5.) over 6.55%, but not more than 1.2%) ÷ (5.) x (3.)	$	0
7. Present Value of Retirees and Beneficiaries on 6/30/2012	$	1,228,202,331
8. Total Present Value of Benefits on 6/30/2012	$	2,296,440,079
9. Present Value of Future Normal Cost on 6/30/2012	$	185,161,910
10. Market Value of Assets on 6/30/2012	$	1,216,498,446
11. Retired Life portion of Market Value of Assets on 6/30/2012	$	749,648,350
12. Current Year Assets available for Variable Increase		
[(6.) x (11.) ÷ (10.)]	$	0
13. Prior Year Carryover Earnings Increase for Variable Increase	$	0
14. Total Assets available for Variable Increase [12. + 13.]	$	0
15. Cost to provide each additional 1%	$	11,470,207
16. Compound Increase [(14.) ÷ (15.)] x 1%		0.00%
17. Consumer Price Index for year ending 6/30/2012		1.66%

SECTION V
VARIABLE BENEFIT

Table V-1		
Variable Increase Calculation for Members age 65 and Older		
18. Net maximum variable increase (CPI – 2.0% [guaranteed COLA])		0.00%
19. Cost to provide each additional 1% for retirees 65 and older	$	6,800,883
20. Variable increase for eligible members age 65 and older [minimum of 18. or (14. divided by 19. x 1%)]		**0.00%**
21. Cost to provide variable increase for members age 65 and older [19. x 20. x 100]	$	0
Variable Increase Calculation for Members Under age 65		
22. Assets available for Variable Increase for under age 65 [14. - 21.]	$	0
23. Net maximum variable increase (CPI - 1.5% [guaranteed COLA])		0.16%
24. Cost to provide each additional 1% for members under age 65	$	4,669,324
25. Variable increase for eligible members under age 65 [minimum of 23. or (22. divided by 24. x 1%)]		**0.00%**
26. Cost to provide variable increase for members under age 65 [22. x 25. x 100]	$	0
27. Total cost to provide variable increase [21. + 26.]	$	0
28. Net carryover Earnings Increase Account [27. – 14.]	$	0
The variable benefit increase, if any is applied to members with benefits in payment status on June 30, 2011.		

APPENDIX A
PLAN MEMBERSHIP

The data for this valuation was provided electronically in Excel and text formats by the Retirement System Office. Cheiron did not audit any of the data, however the data was reviewed to ensure that it complies with generally accepted actuarial standards. The data for active and inactive participants is as of June 30, 2012. Where data elements were missing, dates of hire, dates of birth, and benefit accrual level assumptions were made to fill-in the blanks. The assumed values are included in Appendix B.

The following pages contain a summary of the data provided.

- Reconciliation of active members as of June 30, 2012
- Reconciliation of terminated vested members as of June 30, 2012
- Reconciliation of retirees and beneficiaries as of June 30, 2012
- Age/service and age/salary/service distribution for active members as of June 30, 2012
- Counts and average benefit amount by age for retirees, beneficiaries and disabled members as of June 30, 2012

APPENDIX A
PLAN MEMBERSHIP

Reconciliation of Active ERS Members			Class A	Class C	Total
A.	**Active Members as of June 30, 2011**		**36**	**9,357**	**9,393**
B.	**Exits:**				
	1. Terminations:	Non-vested	0	318	318
		Vested	0	72	72
	2. Transfers Out		0	0	0
	3. Leaves:	Military	0	0	0
		Other	0	5	5
	4. Prior Incorrect inclusions		3	1	4
	5. Deaths:	Ordinary with no Survivor	0	29	29
		Accidental with Survivor	0	0	0
		Ordinary with Survivor	0	2	2
	6. Retirements:	Service	5	272	277
	7. Disablements:	Ordinary	0	36	36
		Accidental	0	0	0
		Accidental – Special	0	1	1
		Pending	0	0	0
	8. Other Exits:		0	2	2
	9. Subtotal (all exits):		8	738	746
C.	**Remaining Active (A. – B.9)**		**28**	**8,619**	**8,647**
D.	**Entrances:**				
	1. New Entrants		0	453	453
	2. Prior Omissions		0	7	7
	3. Transfers In		0	0	0
	4. Restorations:	Pending	0	0	0
		Leave	0	0	0
		Retirement	0	0	0
		Disability – Ordinary	0	0	0
		Disability – Special	0	0	0
		Other Termination	0	0	0
	5. Subtotal (all entrances):		0	460	460
E.	**Active Members as of June 30, 2012 (C. ÷ D.5)**		**28**	**9,079**	**9,107**
F.	**Members included in the valuation as of June 20, 2012 (E. + Pending Disablements in B.7)**		**28**	**9,079**	**9,107**

APPENDIX A
PLAN MEMBERSHIP

Reconciliation of Terminated Vested ERS Members		
A.	**Terminated Vested Members as of June 30, 2011**	**1,097**
B.	**Exits:**	
	1. Retirements	57
	2. Restorations	12
	3. Transfers Out of State Plan	0
	4. Prior Incorrect Inclusions	0
	5. Disabilities	1
	6. Deaths	0
	7. Lump Sum Payment	0
	8. Other Exits	41
	9. Subtotal (all exits):	111
C.	**Remaining Terminated Vested (A. – B.7)**	986
D.	**Entrances:**	
	1. New Entrants	103
	2. Prior Omissions	11
	3. Subtotal (all entrances)	114
E.	**Terminated Vested Members as of June 30, 2012**	1,100

APPENDIX A
PLAN MEMBERSHIP

Reconciliation of Retired ERS Members and their Beneficiaries

	Retired		Disabled		
	Primary	**Beneficiary**	**Primary**	**Beneficiary**	**Total**
A. Members as of June 30, 2011	**6,435**	**1,119**	**886**	**253**	**8,693**
B. Exits:					
1. Beneficiary Payments Ceased	0	0	0	0	0
2. Returned to Active Membership	0	0	0	0	0
3. Prior Incorrect Inclusion	7	0	1	0	8
4. Deaths: Primary with no Survivor	212	0	24	0	236
Beneficiary	0	87	0	13	100
Primary with Survivor	88	0	19	0	107
5. Subtotal (all exits):	307	87	44	13	451
C. Remaining Members (A. – B.5)	**6,128**	**1,032**	**842**	**240**	**8,242**
Adjustments					
Adjusted Remaining Members	**6,128**	**1,032**	**842**	**240**	**8,242**
D. Entrances:					
1. New Retirements: Primary	271	0	37	0	308
2. Retired from Terminated Vested	57	0	1	0	58
3. Active Death: Beneficiary	0	0	0	0	0
4. Beneficiary Assumes Payments	0	88	0	19	107
5. Prior Omissions	8	0	16	0	24
6. Ex-Spouse Receiving Payments	0	0	0	0	0
7. Subtotal (all entrances):	336	88	54	19	497
E. Members as of June 30, 2012 (C. + D.7)	**6,464**	**1,120**	**896**	**259**	**8,739**

APPENDIX A
PLAN MEMBERSHIP

AGE/SERVICE DISTRIBUTION OF ACTIVE PARTICIPANTS

ACTIVE PARTICIPANTS AS OF JUNE 30, 2012

	COMPLETED YEARS OF CREDITED SERVICE									
AGE	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Up	Total
Under 25	42	0	0	0	0	0	0	0	0	42
25-29	290	92	3	0	0	0	0	0	0	385
30-34	336	266	35	0	0	0	0	0	0	637
35-39	283	292	163	32	0	0	0	0	0	770
40-44	295	277	226	112	62	1	0	0	0	973
45-49	247	329	244	145	212	102	2	0	0	1,281
50-54	220	295	268	199	254	223	129	2	0	1,590
55-59	161	217	244	179	226	228	272	77	2	1,606
60-64	123	163	157	83	148	147	187	122	60	1,190
65-69	32	73	59	51	57	49	51	33	32	437
70 & Up	22	29	27	16	20	22	27	9	24	196
Total	2,051	2,033	1,426	817	979	772	668	243	118	**9,107**

Average Age = 49.74 Average Service = 13.92

APPENDIX A
PLAN MEMBERSHIP

AGE/SERVICE DISTRIBUTION OF ACTIVE PARTICIPANTS

ACTIVE PARTICIPANTS AS OF JUNE 30, 2012

AVERAGE EARNINGS

AGE	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Up	Total
Under 25	$ 29,743	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 29,743
25-29	36,030	32,841	44,163	0	0	0	0	0	0	35,331
30-34	40,514	39,948	35,721	0	0	0	0	0	0	40,015
35-39	44,217	44,235	46,602	39,670	0	0	0	0	0	44,539
40-44	40,081	39,521	43,537	46,208	45,300	52,836	0	0	0	41,775
45-49	44,010	39,641	41,367	45,911	48,368	46,306	44,150	0	0	43,504
50-54	40,223	40,182	33,536	41,148	46,086	49,318	49,978	69,700	0	42,245
55-59	40,545	38,711	38,678	39,281	44,333	48,499	52,467	52,913	54,195	44,164
60-64	45,645	37,944	43,905	44,281	44,089	48,220	51,228	52,078	51,959	46,245
65-69	43,331	36,154	42,920	41,531	46,485	52,446	47,866	48,788	48,530	44,622
70 & Up	24,894	25,287	30,647	36,572	34,477	50,610	39,895	44,579	39,269	35,293
Total	$ 40,684	$ 39,530	$ 40,385	$ 42,473	$ 45,610	$ 48,709	$ 50,755	$ 51,763	$ 48,486	$ 42,885

Total Earnings = $ 390,557,576 Average Earnings = $ 42,885

APPENDIX A
PLAN MEMBERSHIP

Schedule of Benefit Recipients by Attained Age and Type of Retirement - ERS
June 30, 2012 - Primary Members

	TYPE OF RETIREMENT					
AGE	NR	ER	DS	ODis	ADis	Total
Under 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	1	0	1
30-34	0	0	0	1	0	1
35-39	0	0	0	4	0	4
40-44	0	0	1	14	0	15
45-49	3	0	9	45	3	60
50-54	34	0	65	119	4	222
55-59	192	165	156	177	9	699
60-64	459	355	191	179	6	1,190
65-69	697	398	166	102	9	1,372
70-74	616	334	122	84	11	1,167
75-79	509	364	113	54	11	1,051
80-84	409	242	85	25	9	770
85 & Up	550	184	45	19	10	808
Total	3,469	2,042	953	824	72	**7,360**
Average Annual Benefit	$ 20,183	$ 6,617	$ 19,033	$ 8,672	$ 19,995	$ 14,980

NR - Service Retirement
ER - Early Retirement
DS - Discontinued Service
ODis - Ordinary Disability
ADis - Accidental Disability

APPENDIX A
PLAN MEMBERSHIP

Schedule of Benefit Recipients by Attained Age and Type of Retirement - ERS
June 30, 2012 - Beneficiaries

	TYPE OF RETIREMENT							
AGE	NR	ER	DS	ODis	ADis	ODth	ADth	Total
Under 20	2	1	1	8	0	2	0	14
20-24	1	0	1	2	0	0	0	4
25-29	1	0	1	1	0	0	0	3
30-34	0	0	0	0	0	0	0	0
35-39	0	0	1	0	0	0	0	1
40-44	0	0	1	0	1	0	0	2
45-49	2	3	1	5	0	1	0	12
50-54	13	4	3	9	1	6	0	36
55-59	27	8	3	22	0	10	0	70
60-64	52	20	9	44	1	11	0	137
65-69	57	23	16	33	1	15	0	145
70-74	81	44	12	34	4	15	2	192
75-79	111	53	12	27	1	18	3	225
80-84	127	39	10	25	7	11	2	221
85 & Up	207	41	8	30	2	18	11	317
Total	681	236	79	240	18	107	18	**1,379**
Average Annual Benefit	$ 8,976	$ 3,689	$ 10,067	$ 5,028	$ 9,653	$ 10,927	$ 21,915	$ 7,776

NR - Service Retirement
ER - Early Retirement
DS - Discontinued Service
ODis - Ordinary Disability
ADis - Accidental Disability
ODth - Ordinary Death
ADth - Accidental Death

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

Entry Age Normal Method

Liabilities and contributions shown in this report are computed using the Entry Age Normal method of funding. Under this method the normal cost is computed as the level annual percentage of pay required to fund the retirement benefits between each member's date of hire and assumed retirement.

A description of the calculation follows:

The normal cost is based upon the normal cost rate determined by taking the value, as of entry age into the plan, of each member's projected future benefits. This value is then divided by the value, also at entry age, of each member's expected future salary producing a normal cost rate that should remain relatively constant over a participant's career. The normal cost rate is multiplied by current salary to determine each member's normal cost. Finally, the normal cost is reduced by the member contribution to produce the employer normal cost.

The actuarial liability is the difference between the present value of future benefits and the present value of future normal cost. The unfunded actuarial liability is the difference between the actuarial liability and the actuarial value of assets.

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Assumptions and Methods

Method of Funding: The Entry Age Normal Funding Method was approved by the Board of Trustees effective date of 7/1/2012.

The current unfunded actuarial liability is amortized as a level dollar figure over 20 years. The 20-year period decreases each year from 2011 until 2031, at which time the unfunded liability will be fully paid.

Asset Valuation: The actuarial value of assets is equal to the market value, adjusted for investment surpluses and deficits over a five-year period. This calculation is done in the following steps:

1. The investment gain or loss for the current year is calculated; this equals the actual investment earnings during the year minus the expected earnings. Expected earnings are calculated using a weighted average of the pre- and post-retirement interest rate assumptions multiplied by the mean market value of assets during the year.

2. The current net excess earnings are computed by adding the investment gain or loss for the current year to the remaining excess earnings for the prior valuation. One fifth of the excess earnings are recognized in the actuarial value as of the current valuation and four fifths are deferred to future years.

3. The actuarial value of assets will not be greater than 120% nor less than 80% of the market value of assets as of the valuation date.

Discount Rate: 7.75% compounded annually until retirement except employee accumulations; 6.55% compounded annually after retirement (effective 6/30/2011).

Investment Return: A liability weighted return on assets is expected on the basis that a 7.75% return is achieved on the portion of assets attributable to active participants, and a 6.55% return is assumed for non-active based assets. The weighted expected return this year is 7.11%.

Social Security Wage Base: 3.00% per year compounded annually (effective 6/30/2011)

Inflation: 2.75% (effective 6/30/2011)

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

Salary Increases: Salary increases are assumed to vary with age. Sample rates are as follows:

Age	Salary
20	6.70%
25	6.35
30	5.78
35	5.20
40	4.68
45	4.23
50	4.00
55	4.00
60	4.00
65	4.00
69	4.00

Cost-of-Living Adjustment Assumption: 1.5% for inactives in pay status under age 65 and 2.0% over age 65, plus variable based on excess returns assumed to be zero.

Percent Married: Males 90%, females 80%.

Spouse Age: A husband is assumed to be 4 years older than his wife.

Remarriage Rates: None

Expenses: Administration and investment expenses are assumed to be paid out of investment earnings. It is assumed that the Fund will have sufficient earnings to pay these expenses and meet the interest assumption.

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

Withdrawal:

Service	Rate
0	14.50%
1	14.25
2	10.50
3	8.25
4	7.00
5	6.75
6	6.25
7	5.75
8	5.75
9	5.00
10	4.75
11	4.75
12	4.75
13	4.25
14	4.25
15+	4.25

Disability:

The Line-of-Duty disability rates for Classes A and B were effective 6/30/1999; Class C disability rates and Non-Line-Of-Duty rates are effective 6/30/2002.

Age	Non-Line-of-Duty Disability	Line-of-Duty Disability (Classes A&B)	Line-of-Duty Disability (Class C)
25	0.00050	0.00004	0.00008
30	0.00059	0.00004	0.00008
35	0.00115	0.00008	0.00016
40	0.00236	0.00008	0.00016
45	0.00425	0.00012	0.00024
50	0.00675	0.00020	0.00039
55	0.01043	0.00024	0.00047
60	0.00579	0.00027	0.00055
65	0.00130	0.00038	0.00076
69	0.00078	0.00039	0.00078

Workers compensation offset is included in the above rates.

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

Pre-Retirement Mortality:

1. Non-line-of-Duty - 1994 Uninsured Pensioners Generational Mortality table (Male + 4, Female + 1) with generational projections using 50% of the AA scale projected to 2016.

2. Line-of-Duty - 0.005% at all ages (effective 6/30/1999).

Age	Non-Line-of-Duty Death* Male	Non-Line-of-Duty Death* Female	Line-of-Duty Death*
25	0.000797	0.000295	0.00005
30	0.000890	0.000381	0.00005
35	0.001048	0.005200	0.00005
40	0.001506	0.007660	0.00005
45	0.002343	0.001025	0.00005
50	0.003908	0.001548	0.00005
55	0.006929	0.002647	0.00005
60	0.012840	0.005341	0.00005
65	0.021779	0.010165	0.00005
69	0.031273	0.014398	0.00005

* Rates for individuals who are the age shown as of June 30, 2012.

Post-Retirement Mortality:

1. Retirees and Beneficiaries:
   Males and Females - 1994 Uninsured Pensioners Generational Mortality table (Male + 4, Female + 1) projected using 50% of the AA scale projected to 2016.

2. Disabled members:
   Sample rates (rates first effective 6/30/2002).

Age	Retirees and Beneficiaries* Male	Retirees and Beneficiaries* Female	Disabled Members Male	Disabled Members Female
55	0.00693	0.00265	0.05392	0.02529
60	0.01284	0.00534	0.06435	0.03138
65	0.02178	0.01017	0.07679	0.04088
70	0.03396	0.01568	0.09558	0.05568
75	0.05599	0.02616	0.12298	0.07841
80	0.09165	0.04563	0.16115	0.11274

* Rates for individuals who are the age shown as of June 30, 2012

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

Service Retirement: Early Retirement prior to the later of age 60 and eligibility for Normal Retirement (earlier of age 65 with 5 years of service and 30 years of service).

	Rates of Retirement		
Age	**Less than 30 yos**	**30 yos**	**More than 30 yos**
45–54	0.00	0.20	0.10
55-56	0.06	0.20	0.10
57	0.06	0.20	0.10
58	0.06	0.20	0.10
59	0.06	0.20	0.10
60	0.07	0.20	0.15
61	0.10	0.20	0.20
62	0.17	0.20	0.40
63-64	0.15	0.20	0.20
65	0.20	0.20	0.35
66	0.20	0.20	0.25
67	0.17	0.20	0.25
68	0.17	0.20	0.20
69	0.20	0.20	0.20
70	1.00	1.00	1.00

Normal Retirement is assumed on or after the later of age 60 and eligibility for Normal Retirement (earlier of age 65 with 5 years of service and 30 years of service).

Joint and Survivor Forms of Payment: The 40% Joint & Survivor form of payment is assumed for all benefits. All benefits with Joint & Survivor Forms of Payment for retirees had their survivor benefits increased by 4% to account for children's benefits.

Data Assumptions: The data provided for this valuation had several participants missing salaries. We assumed the average salary by service for these participants.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

Highlights

It has been represented to us that there were no changes in plan provisions from the 2011 valuation.

Effective Date

The System was effective January 1, 1926 and has been periodically amended.

Eligibility

Any regular and permanent officer, agent, or employee of the City with the exception of those required to join the Maryland State or any other Retirement System shall become a Class C member of the Employees' Retirement System upon completion of one year of service. The Board of Estimates may authorize prospective membership for any class of part-time employees. There are three classes of members as follows:

1. Class A – Members who were hired before July 1, 1979, and entered membership on or after January 1, 1954, or who elected, prior to April 1, 1954, to contribute at the higher Class A rate. Any Class B member may elect to become a Class A member by bringing his accumulated contributions and interest up to what they would be if he had elected Class membership on January 1, 1954.

2. Class B – Members as of January 1, 1954 who did not elect Class A membership – there are no remaining active Class B participants as of June 30, 2011.

3. Class C – Members who were hired on or after July 1, 1979, or any other members who may have elected to transfer during various open transfer periods.

Member Contributions

Class C members make no contributions. All other members currently contribute at the rate of 4% of earnable compensation. Contributions are not required upon attaining age 60 and completing 35 years of service. Interest is credited on contributions at a rate of 5.5% per annum.

Compensation

Earnable compensation is the annual salary authorized for the member, not including overtime, differential pay, environmental pay, hazardous duty pay, pay for conversion of leave or other fringe benefits, or any like additional payment. Average Final Compensation is the average of the member's annual earnable compensation on January 1 for the three successive years of service when the member's earnable compensation is the highest or, if the member is in service on January 1 for less than three successive years, than the average during total service.

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Covered Compensation

The covered compensation (for Class C only) is the average of the FICA wage base for the 35 year period ending with the calendar year which ends immediately prior to the earlier of: (1) January 1, employment; or (2) January 1, of the calendar year in which the member attains age 65.

Military Service Credit

A. Military Service Prior to Employment:
   1. Classes A and B
      A maximum of 3 years service credit is granted provided the member has acquired 10 years of service and has reached the age of 60 or has acquired 20 years of service, regardless of age.

   2. Class C
      A maximum of 3 years service credit is granted provided the member has acquired 10 years of service and has reached the age of 62 or has acquired 20 years of service, regardless of age.

B. Military Service Within Employment:
   1. Classes A and B
      Upon retirement or death, any member who, because of military duty, had a break in employment shall receive service credit for the period of absence as provided by the Veterans' Reemployment Rights Act.

Retirement Eligibility

A. Service Retirement:
   1. Classes A and B – Age 60 with 5 years of service or 30 years of membership service.

   2. Class C – Age 65 with 5 years of service or 30 years of service, regardless of age. Early retirement allowed at age 55 with 5 years of service payable at age 65 or reduced for payment before 65.

B. Non-Line-of-Duty Disability Retirement:
   Five years of membership service and determined by a hearing examiner to be mentally or physically incapacitated for the performance of duty and that incapacity is likely to be permanent.

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C. Line-of-Duty Disability Retirement:
   Totally and permanently incapacitated for duty as the result of an accident while in performance of duty and certified by a hearing examiner as mentally or physically incapacitated for the performance of duty and that such incapacity is likely to be permanent.

D. Dismemberment Disability Retirement:
   1. Class C – Loss of any 2 or more of hands, feet, sight of eye(s) as a direct result of bodily injury from an accident while in actual performance of duty as determined by a hearing examiner.

Termination of Employment

1. Classes A and B
   a. Eligible for Termination Retirement Allowance, deferred to age 60, upon completion of (1) 15 years of membership service, or (2) 5 years of service, if removed from a position without fault.
   b. Eligible for a Termination Retirement Allowance, payable immediately, upon completing 20 years of service, if removed from a position without fault.
   c. Eligible for a refund of accumulated contributions if not eligible for any other benefits.

2. Class C
   a. Eligible for a Termination Retirement Allowance, deferred to age 65, upon completion of (1) 10 years of service, or (2) 5 years of service, if removed from a position without fault.
   b. Eligible for an immediate benefit if removed without fault after 20 years of service.

Retirement Allowances

A. Service Retirement:
   1. Classes A and B
      The sum of:
      a. An annuity of the actuarial equivalent of a member's accumulated contributions; and
      b. A pension, which together with the annuity shall equal 1.935% (Class A) or 1.785% (Class B) of Average Final Compensation times years of service.

   2. Class C
      A pension of (1) 1.60% of Average Final Compensation, times years of service up to 30 years, plus (2) 0.25% of Average Final Compensation in excess of Covered Compensation, times years of service up to 30 years, plus (3) 1.85% of Average Final Compensation, times years of service in excess of 30 years.

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B. Early Retirement:

1. Class C

   If a member is age 55 with 5 years of service, the member may retire at any time, with a benefit reduced for early commencement. The reduction factor is 1/180 for each of the first 60 months prior to age 65 and 1/360 for each additional month preceding age 65. If the member has 30 years of service at retirement, then there is no reduction factor applied to the benefit.

C. Non-Line-of-Duty Disability Retirement:

1. Classes A and B

   A benefit equal to the service retirement benefit if age 60; otherwise, an annuity of the actuarial equivalent of a member's accumulated contributions plus a pension which, together with the annuity, shall equal 1.90% (Class A) or 1.75% (Class B) of Average Final Compensation times years of service.

   The member will receive the benefit as calculated above if the benefit exceeds 25% of the member's Average Final Compensation. Otherwise, the member shall receive 25% of the member's Average Final Compensation.

   This benefit is offset by:

   a. Worker's compensation (excluding amounts paid to third parties);
   b. Earnings in excess of base amount (current earnable compensation in same job grade and step adjusted for longevity) with a $1.00 reduction for each $2.00 of the first $5,000 of excess and a $2.00 reduction for each $5.00 of additional excess earnings.

2. Class C

   The ordinary disability pension shall be equal to the greater of:

   a. The member's accrued service retirement benefit; or
   b. 15% of the member's average final compensation.

   This benefit is offset by:

   a. Worker's compensation (excluding amounts paid to third parties);
   b. Unemployment compensation.

D. Line-of-Duty Disability Retirement:

An annuity of the actuarial equivalent of a member's accumulated contributions, plus a pension equal to 66-2/3% of Average Final Compensation.

This benefit is offset by:

Same offsets are applied as for non-line of duty disability.

E. Dismemberment Disability Retirement:
   1. Class C
      A pension, equal to 100% of Average Final Compensation. Same offsets as for Class C Line-of-Duty Disability benefits.

F. Termination Retirement Allowance (Deferred Payment):
   Determined the same as for Service Retirement, but based on membership service and Average Final Compensation at the time of termination.

G. Termination Retirement Allowance (Immediate Payment):
   Determined the same as if the member had retired with a non-line-of-duty retirement allowance.

Option Methods of Receiving Benefit Payments

A. Maximum Service Retirement:
   Joint & Survivor form of payment to unmarried spouse or dependent children until the last marries, dies or attains age 18 (age 22 if a full-time student). The percent continued to the spouse is 40%.

B. Cash refund to retiree's beneficiary based on present value of allowance at retirement less payments made.

C. Joint and 100% to Contingent Beneficiary

D. Joint and 50% to Contingent Beneficiary

E. Some other periodic benefit subject to the approval of the Board of Trustees

   These options are available for service, termination, non-line-of-duty disability and line-of-duty disability retirement. Any option and / or beneficiary may be changed by the retired member within 30 days after retirement.

Non-Line-of-Duty-Death Benefits

1. Class A and B
   - The member's accumulated contributions will be returned; plus, if one or more years of membership service, 50% of the greater of Average Final Compensation or current annual earnable compensation, or
   - If (1) eligible for service retirement, or (2) would have become eligible for service retirement within 90 days, or (3) if retired on account of service, non-line-of-duty disability, or line-of-duty disability and dies within 30 days of retirement, or (4) entitled to a deferred allowance at age 60; and the member's designated beneficiary is his spouse

with whom he has been living for at least 5 years or his partner(s), such beneficiary may elect, in lieu of paragraph (1) above, an allowance equal to the greater of 40% of the participant's accrued benefit or the amount that would have been paid under the Joint and 100% Contingent Option.

This benefit is offset by worker's compensation (excluding amounts paid to third parties). If no beneficiary and if intestate without heirs, then contributions shall remain part of the System.

2. Class C
   - If (1) eligible for service retirement, or (2) would have become eligible for service retirement within 90 days, or (3) if retired on account of service, ordinary disability, or accidental disability and dies within 30 days of retirement, or (4) entitled to a deferred allowance at age 65, or (5) has 20 years of service and dies anytime between effective retirement date at age 65 and no later than 30 days following the attainment of age 65; and the member's designated beneficiary shall receive an allowance equal to the greater of 40% of the participant's accrued benefit or the amount that would have been paid under the Joint and 100% Contingent Option, or
   - If (1) not eligible under paragraph (1) above, and (2) if one or more years of service, 50% of the greater of Average Final Compensation or current annual earnable compensation, shall be paid as a lump sum.

Line-of-Duty Death Benefits

If a member's death was the result of injuries in the line of duty, a refund of contributions shall be payable, if applicable. In addition, an annual pension of 100% of current earnable compensation (not less than $10,000 on June 30, 1994) shall be payable to:

A. The spouse, provided there is no voluntary separation agreement renouncing rights of inheritance during her widowhood;
B. If no eligible spouse, or if the spouse dies or remarries, the child or children equally until age 18 (age 22 if full-time student(s));
C. If no eligible spouse or child surviving, then to the deceased's father and / or mother equally, or to the survivor;
D. For Classes A and B, any member who retires and dies within 30 days after the effective date of line-of-duty disability retirement shall receive the above benefits if death is the result of injuries in the line of duty.

This benefit is offset by worker's compensation (excluding amounts paid to third parties). If no beneficiary and if intestate without heirs, then contributions shall remain part of the System.

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Post-Retirement Benefit Increases

Annual post-retirement benefit increases of a fixed 1.5% for participants in pay status under age 65 and 2.0% for participants in pay status age 65 and over.

Post-Retirement Benefit Increases (Variable Increase)

Additional increases may be provided when investment performance exceeds 6.55% provided for all participants in pay status for more than 18 months.