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

as of June 30, 2013

Produced by Cheiron

November 2013

Classic Values, Innovative Advice

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November 13, 2013

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, 2013 actuarial valuation of the Employees' Retirement System of the City of Baltimore (the System). This report contains information on the System's 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, 2013. 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 2015, and

4) **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 the 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 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.

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, 2013 actuarial valuation are as follows:

- Investments earned 12.38% 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 7.10%.

- The actuarial asset value return was 5.15%, which produced a net loss of $40.1 million to the Fund this year when measured against the expected return of 7.10%.

- The unfunded actuarial liability increased from $681.6 million on June 30, 2012 to $686.0 million on June 30, 2013, due to the investment loss of $40.1 million and liability gain of $7.0 million. 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 increased from 67.7% last year to 68.1% this year.

- The total recommended contribution increased by 2.4% from $94,917,886 for FYE 2014 to $97,170,796 for FYE 2015, before offset for new member contributions, as a reflection of the prior years' experience and increased unfunded actuarial liability (UAL) as of June 30, 2013. This represents an increase in cost as a percent of pay from 24.30% to 24.73%. The City's portion of the cost net of Detention Services and Department of Education for FYE 2015 is $82,517,352 compared to $81,263,688 for FYE 2014. 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 18 years.

- Council Bill 13-0223 passed in June 2013 introduces employee contributions for Plan C members who are not part of Detention Services or Department of Education. Employee contributions will begin at 1.0% of compensation on July 1, 2013 and will increase 1.0% each year thereafter provided members have received in aggregate an additional 2.0% compensation increase for each incremental contribution increase until employee contributions reach 5.0% of compensation. As of July 1, 2013 the 2.0% compensation increase was not effective for any participants covered by the System therefore the City contribution amounts shown in this report do not reflect these anticipated employee contributions. It is our understanding the City will adjust the fiscal 2015 contribution amount by receipts through June 30, 2014 plus estimated employee contributions throughout the year in remittance of the contribution anticipated to be made at the beginning of the fiscal year ending June 30, 2015.

SECTION I
SUMMARY

- The Bill also discontinues the variable post-retirement benefit increases effective June 30, 2013. Prior to these changes current and future retirees received, in addition to guaranteed the annual increases, a variable cost of living adjustment (COLA) in years when the investment returns exceeded 6.55%. This change has no impact on the actuarial liabilities as of June 30, 2013.

SECTION I
SUMMARY

The tables below provide details on the development of the FYE 2015 contribution results, unfunded actuarial liabilities, and statistics on Plan membership. The total lump sum costs determined as payable at the beginning of the fiscal year do not reflect member contributions, if any, which will offset these amounts and require year end true up amounts to adjust for interest.

Table I-1
Valuation Summary

	2012 Valuation Applies to FYE 2014 Amount	2012 Valuation Applies to FYE 2014 % of Pay	2013 Valuation Applies to FYE 2015 Amount	2013 Valuation Applies to FYE 2015 % of Pay
1 Contributions				
Total Normal Cost	$ 26,350,603	6.75%	$ 26,483,854	6.74%
Expected Employee Contributions	124,447	0.03%	128,185	0.03%
Normal Cost	$ 26,226,156	6.72%	$ 26,355,669	6.71%
Allocation from 6/30/2000 excess earnings to pay Ordinance 01-189 normal cost	(2,824,896)	-0.72%	(2,937,892)	-0.75%
Amortization of unfunded actuarial liability	64,689,586	16.56%	66,763,936	16.99%
Interest to beginning of next FY	6,827,040	1.75%	6,989,083	1.78%
Total lump sum cost	$ 94,917,886	24.30%	$ 97,170,796	24.73%
Total covered payroll	$ 390,557,576		$ 392,868,271	
2 Unfunded Liabilities				
Actuarial Liability				
Active	$ 838,246,685		$ 836,898,918	
Retirees and dependents	1,228,202,331		1,270,442,197	
Terminated vested	44,829,153		44,651,885	
Total	$ 2,111,278,169		$ 2,151,993,000	
Less: Actuarial value of assets	$ 1,429,666,081		$ 1,465,943,503	
Unfunded actuarial liability	$ 681,612,088		$ 686,049,497	
Funded Ratio	67.7%		68.1%	

SECTION I
SUMMARY

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

Table I-2
Active Membership Summary

	Active Members			Payroll		
	2012	2013	% Increase	2012	2013	% Increase
Class A	28	27	-3.57%	$ 1,191,588	$ 1,130,438	-5.13%
Class C	9,079	8,977	-1.12%	389,365,988	391,737,833	0.61%
Total	9,107	9,004	-1.13%	$ 390,557,576	$ 392,868,271	0.59%
Average				$ 42,885	$ 43,633	1.74%

Table I-3
Inactive Membership Summary

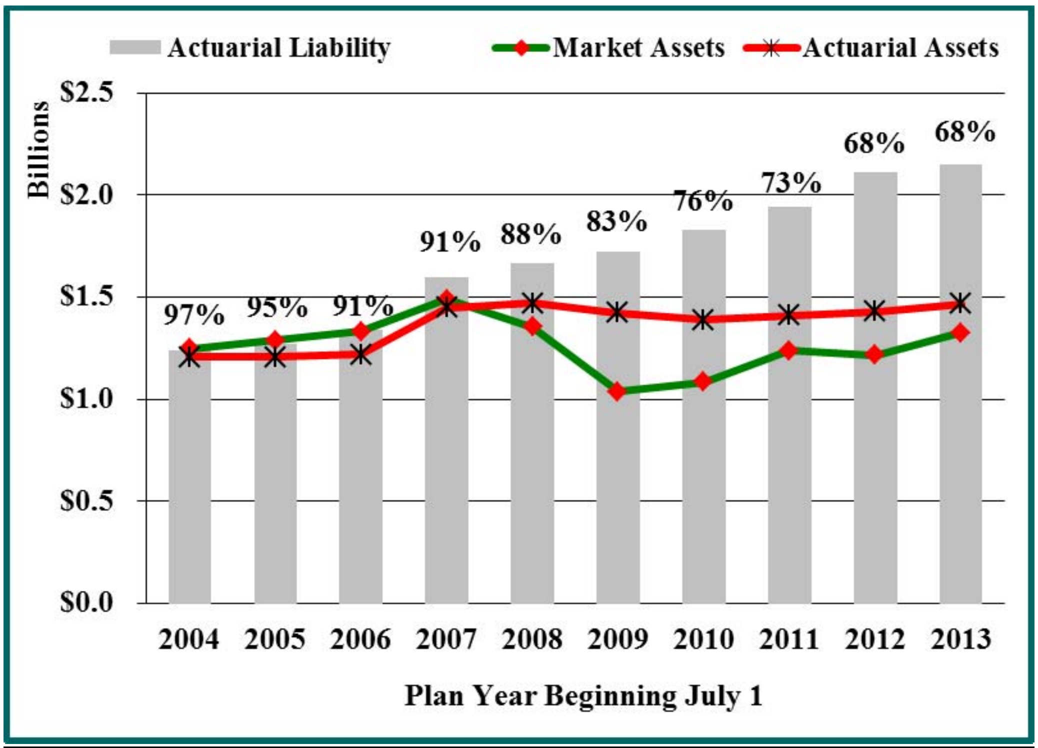
	Number of Retirees			Average Annual Benefit Amount		
	2012	2013	% Increase	2012	2013	% Increase
Normal Service Retirement	5,503	5,567	1.2%	$ 15,169	$ 15,683	3.4%
Discontinued Service	953	954	0.1%	19,033	19,470	2.3%
Ordinary Disability	824	833	1.1%	8,672	8,975	3.5%
Accidental Disability	72	69	-4.2%	19,995	20,478	2.4%
Social Security Equalization	8	8	0.0%	6,313	6,439	2.0%
Beneficiaries of Above	1,254	1,255	0.1%	7,304	7,625	4.4%
Ordinary Death	107	105	-1.9%	10,927	11,437	4.7%
Special Death	18	17	-5.6%	21,915	22,754	3.8%
Total	**8,739**	**8,808**	**0.8%**	**$ 13,843**	**$ 14,303**	**3.3%**

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



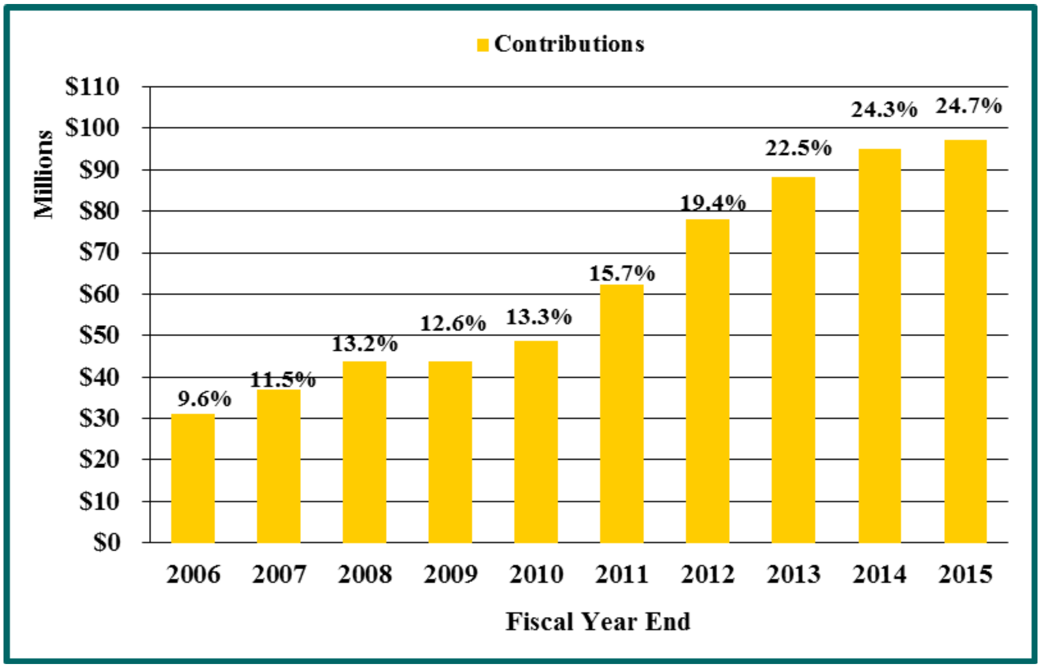
The chart above shows historical trends since 2003 for the market and actuarial value of assets compared to actuarial liability; the actuarial asset value reflects the market value plus one fifth of the aggregate investment earnings above or below the expect return. We also show the progress of the Retirement 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 (97%) on July 1, 2004, shortly 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.

While the funded ratio has declined significantly over this period, the strong funding policy adopted by the Board to amortize the unfunded liability over a decreasing period (18 years remaining for fiscal year ending June 30, 2015) should ensure improvement in this important measurement.

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 2013 and the estimated amounts for FYE 2014 and FYE 2015.



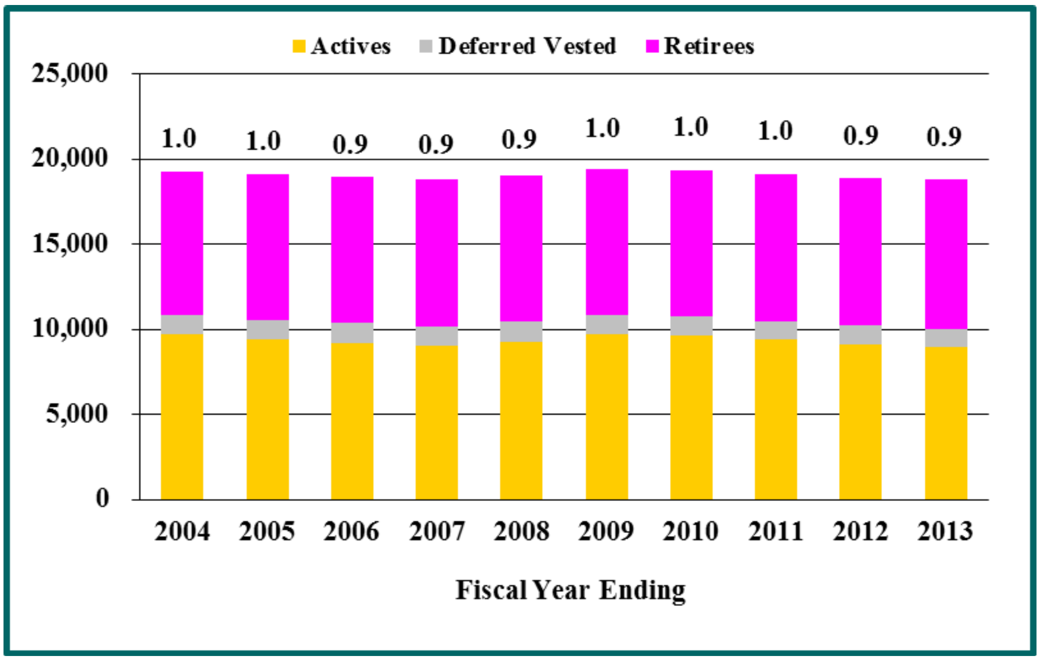
The higher costs in recent years are a reflection of an increasing unfunded actuarial liability in part due to investment losses.

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.

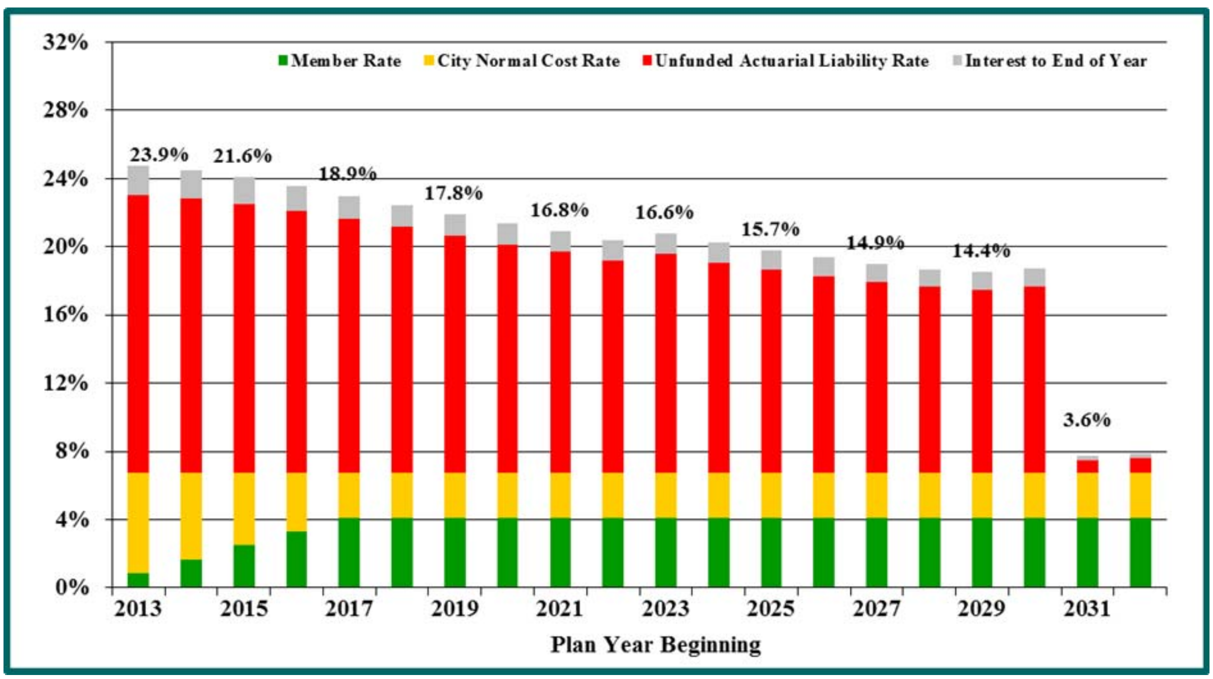
The following chart shows that the number of actives covered by the Plan has remained relatively stable over the nine-year period. The ratio of active to inactive participants as of the current valuation is 0.9. The implications of this ratio of approximately one active for each inactive participant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



SECTION I
SUMMARY

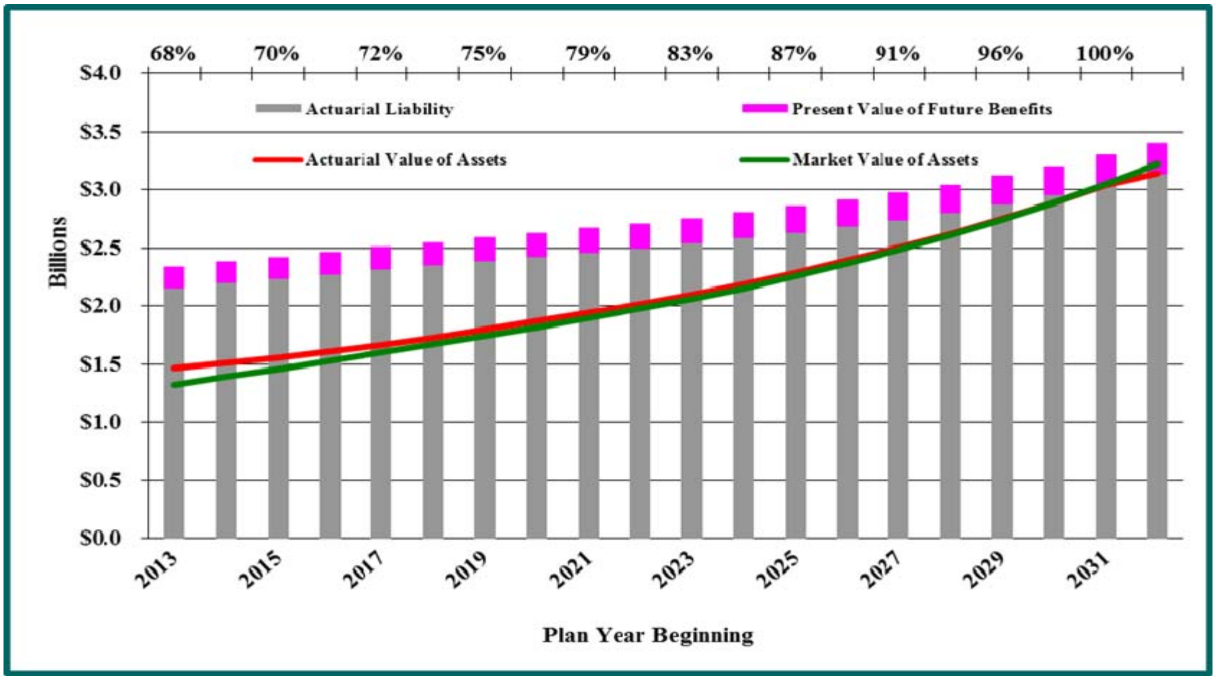
Base Line Projections

The chart on this page shows the expected progress of the System's funding status over the next 20 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 expected member contribution rate, the normal cost rate, unfunded actuarial liability rate and the City's composite contribution rate (numbers on the top of the bars). The City's total cost as a percent of payroll is projected to decrease, gradually at first as the balance of the 2008/2009 investment loss gets included in the actuarial asset value and then more rapidly as the unfunded actuarial liability (UAL) gets paid down the remaining 18-year period, if all actuarial assumptions are met, including the 7.75% anticipated investment return assumption. The decreasing trend in City contribution rates is due to shifting of costs through phase in of member contributions as well as the impact of removing the variable COLA benefit. The increase in cost to fund the UAL in year 2022 is due to the ending of the Ordinance 01-189 normal cost adjustment. After the 18-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 2031.



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 18 years.

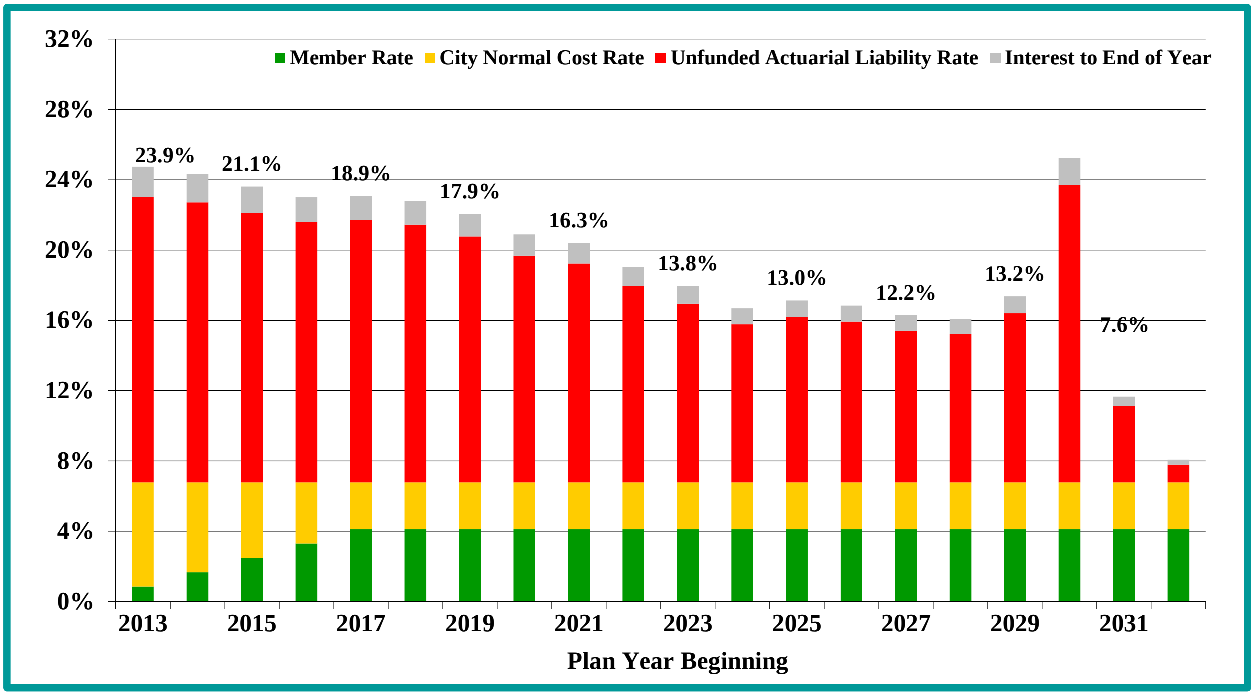


This pattern of funded status improvement is a function of the funding policy to amortize the UAL over a fixed 20-year period from 2011. It is important to also observe that the nature of the asset smoothing is for the market value to always be below the actuarial value of assets until such time that the fund experiences sufficient gains to reverse this relationship. At the end of the amortization period, the market and actuarial values merge as the actuarial value of assets gets closer to market value each year if there are no additional investment gains or losses in excess of the assumed rate projected forward.

SECTION I
SUMMARY

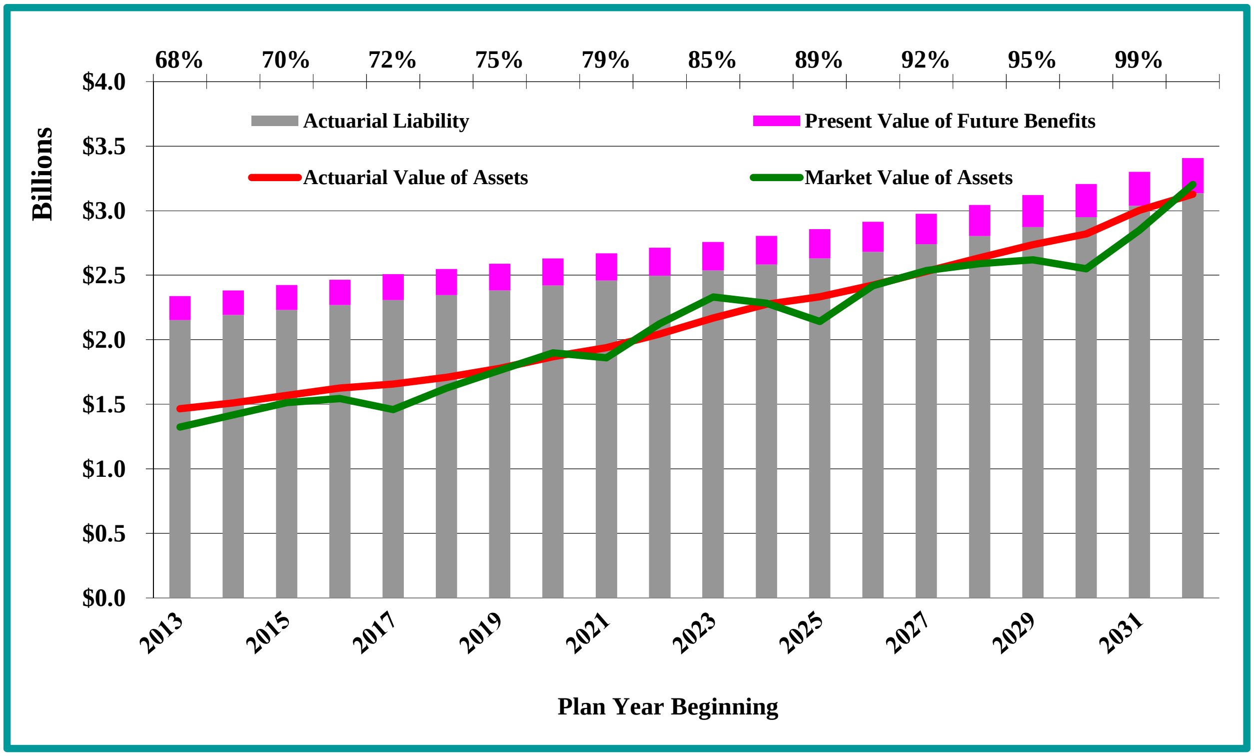
The next two graphs show the same information as above but reflect the fact that the 7.75% investment return is not likely to actually occur each year but represents an average of more volatile returns. They are based on projected returns that while volatile produce the same average 7.75% return based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

2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
10.00%	9.50%	5.00%	-2.50%	15.00%	12.00%	11.00%	1.00%	18.00%	13.00%	1.00%	-3.00%	17.00%
2026	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**
8.00%	5.00%	4.00%	0.00%	14.00%	12.00%	2.00%	6.00%	12.50%	8.00%	6.00%	9.00%	12.00%



This graph above shows the nature of the fixed amortization period and the potential for cost volatility as the fund gets closer to the target date for full funding. It is anticipated that as that date gets closer and based on plan experience additional measures may be considered to address cost volatility.

SECTION I
SUMMARY



This presents a 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, 2013 is summarized below.

Table II-1

Assets of the Plan as of June 30, 2013

	Total Market Value
Fund Balance on June 30, 2012	$ 1,216,498,446
Contributions	
Member	$ 223,720
Member Purchase Service	0
City/State	$ 88,300,214
Net Investment Income	
Interest, Dividends, and Realized Capital Gains	$ 19,611,623
Unrealized Gains (Losses)	134,395,923
Expenses	(5,828,845)
Total Investment Income	$ 148,178,701
Administrative Expenses	$ (3,554,942)
Payments of Benefit & Refunds	$ (124,912,325)
Fund Balance on June 30, 2013	$ 1,324,733,814

SECTION II
ASSETS

The chart below shows the calculation of investment gains and losses. On a market value basis, the Fund earned a 12.38% return amounting to total investment income of $148,178,701 during FY 2012-2013. 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 gain on a market basis related to the inactive liabilities using the expected return rate of 6.55% was $69.8 million. The investment gain on a market basis related to the active liabilities using the expected return rate of 7.75% was $55.4 million. Combining these two gains in relation to the portion of funds in each group, results in a net System asset gain over the assumptions on a market value basis of $63.2 million.

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

1. Market Value of assets as of June 30, 2012	$	1,216,498,446
2. Market Value of assets as of June 30, 2013	$	1,324,733,814
3. Earnings during June 30, 2012 to June 30, 2013 (including investment expenses)	$	148,178,701
4. Mean Assets [Half of ((1.) + (2.) - (3.))]	$	1,196,526,780
5. Investment return 2012-2013 [(3.) ÷ (4.)]		12.38%
6. Investment gain / (loss)		
a. Relative to 6.55%: [(5.) - 6.55%] x (4.)	$	69,757,511
b. Relative to 7.75%: [(5.) - 7.75%] x (4.)	$	55,399,190
7. Funds as a portion of market value of assets		
a. Retired PVFB/Total PVFB		0.54357
b. (Total PVFB - Retired PVFB)/Total PVFB		0.45643
c. Total: (a) + (b)		1.00000
8. Total investment gain / (loss)		
a. Retired: (6a.) x (7a.)	$	37,918,363
b. Active: (6b.) x (7b.)	$	25,285,636
c. Total: (a) + (b)	**$**	**63,203,999**

The investment gains for FYE 2013 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 $(66,866,623) at June 30, 2013 and represents a significant improvement over the previous year. 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	
	6/30/2012	**6/30/2013**
1. Remaining net excess earnings from prior valuation	$ (116,653,582)	$ (146,787,278)
2. New investment Gain (Loss)	(66,830,516)	63,203,999
3. Current net excess earnings (1) + (2)	$ (183,484,098)	$ (83,583,279)
4. Variable benefit funds	0	0
5. One-fifth (credit) charge [(3) + (4)] / 5	36,696,820	16,716,656
6. Net unallocated excess/(deficit) earnings (3) + (4) + (5)	$ (146,787,278)	$ (66,866,623)

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 June 30, 2013			$	1,324,733,814	
2. Net deferred recognition of unallocated excess/(deficit) earnings			$	(66,866,623)	
3. Normal Cost Reserve from plan change			$	(20,574,820)	*
4. Present value of prior year's contributions not yet paid			$	94,917,886	
5. Preliminary actuarial value of assets on June 30, 2013 (1) - (2) + (3) + (4)			$	1,465,943,503	**
6. Corridor testing: 80% of market value assets	$	1,059,787,051			
120% of market value assets	$	1,589,680,577			
7. Final actuarial value of assets on June 30, 2013			$	1,465,943,503	
8. Ratio of actuarial asset value to adjusted market asset value				105%	

* 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 110.7% of the market value which is down from the same measurement least year of 117.5%.

On actuarial asset value, the results are below expectation with an investment return for the year of 5.15% which is compared to the liability weighted expected return of 7.10% (based on a 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	2,824,896	21,919,857
2013	2,937,892	20,574,820
2014	3,055,408	19,003,790
2015	3,177,624	17,184,382
2016	3,304,729	15,092,282
2017	3,436,918	12,701,088
2018	3,574,395	9,982,143
2019	3,717,371	6,904,348
2020	3,866,066	3,433,968

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 eighteen 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, 2013			
	Dept. of Education	**Detention Services**	**All Others**	**Total**
Number of Participants				
Active	1,668	9	7,327	9,004
Service retired				6,546
Disabled				885
Terminated vested				1,042
Dependents				1,377
Total Participants				18,854
Annual compensation of active participants	$ 69,375,749	$ 524,808	$ 322,967,714	$ 392,868,271
Average Age	49.90	59.56	49.88	49.89
Average Service	12.22	31.80	14.28	13.92
Development of Unfunded Actuarial Liability				
Actuarial Liability				
Active	$ 110,143,230	$ 2,823,585	$ 723,932,103	$ 836,898,918
Retirees and dependents				1,270,442,197
Terminated vested				44,651,885
Total liabilities				$ 2,151,993,000
Actuarial value of assets				
Active	$ 19,853,105	$ 508,946	$ 130,487,370	$ 150,849,421
Retirees and dependents				1,270,442,197
Terminated vested				44,651,885
Total assets				1,465,943,503
Unfunded actuarial liability *	$ 90,290,125	$ 2,314,639	$ 593,444,733	$ 686,049,497

* 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 2013 Experience Gain/(Loss)

	Actuarial Liability	Actuarial Value of Assets	Unfunded Actuarial Liability
1. Value as of June 30, 2012	$ 2,111,278,169	$ 1,429,666,081	$ 681,612,088
a.) Actives at 7.75%	$ 838,246,685		
b.) Inactives and TV at 6.55%	$ 1,273,031,484		
2. Additions			
a.) Normal Cost	$ 26,226,156		$ 26,226,156
b.) Expected Employer Contributions		$ 88,300,214	$ (88,300,214)
c.) Expected Member Contributions		$ 124,447	$ (124,447)
3. Decreases			
a.) Benefit Payments	$ (124,912,325)	$ (124,912,325)	$ 0
4. Expected Interest			
a.) On 1 for one year	$ 148,347,680	$ 110,799,121	$ 37,548,559
b.) On 2a for one year	$ 2,032,527	$ 0	$ 2,032,527
c.) On 2b for one year*	$ 0	$ 6,843,267	$ (6,843,267)
d.) On 2c for 1/2 year	$ 0	$ 4,732	$ (4,732)
e.) On 3a for 1/2 year	$ (4,025,998)	$ (4,750,038)	$ 724,040
5. Expected Value June 30, 2013: (sum 1-4)	$ 2,158,946,209	$ 1,506,075,499	$ 652,870,710
6. Change in methods/assumptions	$ 0	$ 0	$ 0
7. Change in benefits	$ 0	$ 0	$ 0
8. Expected value after changes: (sum 5-7)	$ 2,158,946,209	$ 1,506,075,499	$ 652,870,710
9. Actual Value as of June 30, 2013	$ 2,151,993,000	$ 1,465,943,503	$ 686,049,497
10. Actuarial (Gain)/Loss: (8 -9)	$ (6,953,209)	$ 40,131,996	$ 33,178,787
11. Total (Gain)/Loss: (6 + 7 + 10)	$ (6,953,209)	$ 40,131,996	$ 33,178,787

* Assumes contributions made at year end.

SECTION III
LIABILITIES AND EXPERIENCE GAINS/(LOSSES)

Table III-3
Development of 2013 Experience Gain/(Loss)

1. Unfunded Actuarial Liability at June 30, 2012	$	681,612,088
2. Additions (normal cost and contribution)		(62,198,505)
3. Interest accrued*		33,457,127
4. Expected Unfunded Actuarial Liability at June 30, 2013 (1) + (2) + (3)	$	652,870,710
5. Actual Unfunded Actuarial Liability at June 30, 2013	$	686,049,497
6. Total Gain/(Loss) at June 30, 2013 (4) - (5)	$	(33,178,787)

* Interest rate depends on active versus inactive.

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

1. Change in unallocated earnings - Gain/(Loss)	$	(79,920,655)
2. Change in Normal Cost Reserve - Gain/(Loss)		1,345,037
3. Asset Return - Gain/(Loss)		38,443,622
4. Total Actuarial Assets - Gain/(Loss) (1) + 2) + (3)	$	(40,131,996)

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

1. Age and Service Retirements - Gain/(Loss)	$	(6,585,053)
2. Disability Retirements - Gain/(Loss)		(1,689,395)
3. Death in Service Benefits - Gain/(Loss)		(3,095,908)
4. Withdrawal from Employment - Gain/(Loss)		(2,795,786)
5. Pay Increases - Gain/(Loss)		18,090,584
6. Death after Retirement - Gain/(Loss)		3,619,987
7. New Entrants - Gain/(Loss)		(2,011,170)
8. Assumption Changes - Gain/(Loss)		0
9. Variable Benefit - Gain/(Loss)		0
10. Other - Gain/(Loss)		1,419,950
11. Total Actuarial Liability - Gain/(Loss) (sum (1) to (10))	$	6,953,209

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 expected member contributions for Class C members have not been reflected below. It is our understanding that the City will adjust for these based upon actual amounts received at year end. 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 18 years.

Table IV-1
Contribution Summary

	As of June 30, 2013				
	Dept. of Education	Detention Services	All Others	Total	% of Pay
Total Normal Cost	$ 4,974,733	$ 29,752	$ 21,479,369	$ 26,483,854	6.74%
Expected Employee Contributions	20,409	0	107,776	128,185	0.03%
Net Normal Cost	$ 4,954,324	$ 29,752	$ 21,371,593	$ 26,355,669	6.71%
18-year amortization of Unfunded Actuarial Liability	$ 8,786,719	$ 225,253	$ 57,751,964	$ 66,763,936	16.99%
Allocation from 6/30/2000 excess earnings to pay Ordinance 01-189 normal cost	$ (386,652)	$ (9,912)	$ (2,541,328)	$ (2,937,892)	-0.75%
Net plan cost at 7/1/2013	$ 13,354,391	$ 245,093	$ 76,582,229	$ 90,181,713	22.95%
Interest to 7/1/2014	1,034,965	18,995	5,935,123	6,989,083	1.78%
Net plan cost at 7/1/2014	$ 14,389,356	$ 264,088	$ 82,517,352	$ 97,170,796	24.73%

APPENDIX A
PLAN MEMBERSHIP

The data for this valuation was provided electronically in Excel 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, 2013. 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, 2013
- Reconciliation of terminated vested members as of June 30, 2013
- Reconciliation of retirees and beneficiaries as of June 30, 2013
- Age/service and age/salary/service distribution for active members as of June 30, 2013
- Counts and average benefit amount by age for retirees, beneficiaries and disabled members as of June 30, 2013

APPENDIX A
PLAN MEMBERSHIP

Reconciliation of Active ERS Members		Class A	Class C	Total
A. Active Members as of June 30, 2012		**28**	**9,079**	**9,107**
B. Exits:				
1. Terminations:	Non-vested	0	300	300
	Vested	0	87	87
2. Transfers Out		0	0	0
3. Leaves:	Military	0	0	0
	Other	0	0	0
4. Prior Incorrect inclusions		0	2	2
5. Deaths:	Ordinary with no Survivor	0	22	22
	Accidental with Survivor	0	0	0
	Ordinary with Survivor	0	7	7
6. Retirements:	Service	3	293	296
7. Disablements:	Ordinary	0	23	23
	Accidental	0	0	0
	Accidental - Special	0	0	0
	Pending	0	0	0
8. Other Exits:		0	0	0
9. Subtotal (all exits):		3	734	737
C. Remaining Active (A. - B.9)		**25**	**8,345**	**8,370**
D. Entrances:				
1. New Entrants		0	616	616
2. Prior Omissions		2	16	18
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):		2	632	634
E. Active Members as of June 30, 2013 (C. + D.5)		**27**	**8,977**	**9,004**
F. Members included in the valuation as of June 20, 2013 (E. + Pending Disablements in B.7)		**27**	**8,977**	**9,004**

APPENDIX A
PLAN MEMBERSHIP

Reconciliation of Terminated Vested ERS Members	
A. Terminated Vested Members as of June 30, 2012	**1,100**
B. Exits:	
1. Retirements	66
2. Restorations	9
3. Transfers Out of State Plan	0
4. Prior Incorrect Inclusions	1
5. Disabilities	3
6. Deaths	47
7. Lump Sum Payment	31
8. Other Exits	0
9. Subtotal (all exits):	157
C. Remaining Terminated Vested (A. - B.7)	**943**
D. Entrances:	
1. New Terminations	88
2. Prior Omissions	11
3. Subtotal (all entrances)	99
E. Terminated Vested as of June 30, 2013	**1,042**

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, 2012	**6,464**	**1,121**	**896**	**258**	**8,739**
B. Exits:					
1. Beneficiary Payments Ceased	0	0	0	2	2
2. Returned to Active Membership	0	0	0	0	0
3. Prior Incorrect Inclusion	5	1	0	0	6
4. Deaths: Primary with no Survivor	181	0	25	0	206
Beneficiary	0	85	0	24	109
Primary with Survivor	92	0	17	0	109
5. Subtotal (all exits):	278	86	42	26	432
C. Remaining Members (A - B.5)	**6,186**	**1,035**	**854**	**232**	**8,307**
Adjustments		(1)		1	0
Adjusted Remaining Members	**6,186**	**1,034**	**854**	**233**	**8,307**
D. Entrances:					
1. New Retirements: Primary	282	0	22	0	304
2. Retired from Terminated Vested	66	0	3	0	69
3. Active Death: Beneficiary	0	0	0	0	0
4. Beneficiary Assumes Payments	0	93	0	17	110
5. Prior Omissions	12	0	6	0	18
6. Ex-Spouse Receiving Payments	0	0	0	0	0
7. Subtotal (all entrances):	360	93	31	17	501
E. Members as of June 30, 2013 (C + D.7)	**6,546**	**1,127**	**885**	**250**	**8,808**

APPENDIX A
PLAN MEMBERSHIP

AGE/SERVICE DISTRIBUTION OF ACTIVE PARTICIPANTS
ACTIVE PARTICIPANTS AS OF JUNE 30, 2013

	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	33	1	0	0	0	0	0	0	0	34
25-29	270	110	1	0	0	0	0	0	0	381
30-34	338	263	46	0	0	0	0	0	0	647
35-39	270	324	164	43	0	0	0	0	0	801
40-44	233	275	224	127	47	1	0	0	0	907
45-49	227	339	235	176	133	116	2	0	0	1,228
50-54	179	325	259	218	177	255	111	1	0	1,525
55-59	122	250	237	227	191	261	255	76	0	1,619
60-64	99	182	164	123	102	171	177	121	45	1,184
65-69	29	73	64	56	48	64	51	44	41	470
70 & Up	11	39	31	18	23	24	24	12	26	208
Total	1,811	2,181	1,425	988	721	892	620	254	112	**9,004**

Average Age = 49.89 Average Service = 13.92

APPENDIX A
PLAN MEMBERSHIP

AGE/SERVICE DISTRIBUTION OF ACTIVE PARTICIPANTS
ACTIVE PARTICIPANTS AS OF JUNE 30, 2013

AVERAGE EARNINGS

AGE	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Up	Total
Under 25	$ 31,114	$ 31,314	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 31,120
25-29	38,253	31,715	66,950	0	0	0	0	0	0	36,441
30-34	43,915	40,287	37,050	0	0	0	0	0	0	41,952
35-39	47,529	43,724	46,304	41,436	0	0	0	0	0	45,412
40-44	45,247	40,693	44,406	47,604	45,934	43,594	0	0	0	44,022
45-49	44,437	38,780	40,625	45,483	47,824	48,543	39,775	0	0	43,043
50-54	43,707	40,088	36,445	42,169	46,389	50,024	50,310	81,800	0	43,356
55-59	42,144	37,513	39,024	40,365	42,651	48,093	51,836	53,949	0	43,822
60-64	48,011	38,514	44,613	43,748	46,742	49,420	53,191	52,209	53,484	47,143
65-69	39,468	37,601	41,493	41,082	48,302	51,694	47,403	48,580	51,487	44,975
70 & Up	29,356	24,996	35,155	36,235	37,009	44,389	44,649	40,748	41,718	36,546
Total	$ 43,538	$ 39,319	$ 41,129	$ 43,038	$ 45,512	$ 49,112	$ 51,268	$ 51,676	$ 50,022	$ 43,633

Total Earnings = $ 392,868,271 Average Earnings = $ 43,633

APPENDIX A
PLAN MEMBERSHIP

Schedule of Benefit Recipients by Attained Age and Type of Retirement - ERS
June 30, 2013 - 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	2	0	2
35-39	0	0	0	5	1	6
40-44	0	0	0	15	0	15
45-49	1	0	9	37	2	49
50-54	33	0	51	103	4	191
55-59	174	169	141	181	8	673
60-64	458	354	187	194	7	1,200
65-69	714	400	180	105	8	1,407
70-74	667	346	137	81	10	1,241
75-79	529	333	119	57	10	1,048
80-84	384	259	75	30	9	757
85 & Up	564	190	55	22	10	841
Total	3,524	2,051	954	833	69	**7,431**
Average Annual Benefit	$ 20,872	$ 6,730	$ 19,470	$ 8,975	$ 20,478	$ 15,451

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, 2013 - Beneficiaries

	TYPE OF RETIREMENT							
AGE	NR	ER	DS	ODis	ADis	ODth	ADth	Total
Under 20	1	1	2	7	0	2	0	13
20-24	2	0	0	4	0	0	0	6
25-29	1	0	0	1	0	0	0	2
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	1	0	0	0	2
45-49	2	2	1	3	1	1	0	10
50-54	8	7	1	13	0	6	0	35
55-59	27	7	5	17	1	13	0	70
60-64	56	18	9	43	0	9	0	135
65-69	58	29	14	31	3	13	0	148
70-74	83	41	18	37	2	17	2	200
75-79	112	50	12	30	1	14	3	222
80-84	123	48	12	20	8	14	1	226
85 & Up	200	47	6	26	1	16	11	307
Total	673	250	82	233	17	105	17	**1,377**
Average Annual Benefit	$ 9,558	$ 4,066	$ 9,239	$ 5,077	$ 10,549	$ 11,437	$ 22,754	$ 8,102

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 20% of the five year aggregate investment surpluses and deficits. 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 net assets are then adjusted to account for the Normal Cost Reserve held for the plan changes made during 2001.

4. The present value of the prior year's City contributions is added to the net assets to account for the one year lag between required contributions and when the contributions are actually received.

5. 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).

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

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 7.10%.
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.

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.

Job Elimination Benefit: A liability load of 1.75% is applied to active retirement benefits to account for the value of this benefit.

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 10 years.

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	0.000520	0.00005
40	0.001506	0.000766	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, 2013.

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).

	Retirees and Beneficiaries*		Disabled Members	
Age	Male	Female	Male	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, 2013

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).

Terminated vested participants are assumed to retire at age 65.

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

The following plan provisions were changed since the 2012 actuarial valuation:

1. Plan C members (excluding Department of Education and Detention Services) start making contributions as of July 1, 2013 at 1.0% of compensation increasing each year by 1.0% until they reach 5.0% of compensation.
2. Variable post retirement increases for in pay participants resulting from investment performance exceeding 6.55% are removed as of June 30, 2013.

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 (except participants of Detention Services and Department of Education) begin making contributions at 1.0% of compensation starting July 1, 2013 increasing 1.0% each year until they reach 5.0% of compensation. Plan A and Plan B members currently contribute at the rate of 4% of earnable compensation And contributions are not required upon attaining age 60 and completing 35 years of service. Interest is credited on contributions at a rate of 5.25% per annum for Plan A and B members and 3.00% for Plan C members.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

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.

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.

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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.

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

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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.

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.

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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.