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Classic Values, Innovative Advice

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

as of June 30, 2015

Produced by Cheiron

November 2015

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Classic Values, Innovative Advice.

November 2, 2015

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, 2015 actuarial valuation of the Employees' Retirement System of the City of Baltimore (the System). This report contains information on the System's assets and liabilities, as well as discloses employer contribution levels. Financial disclosures are provided in a separate Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 report.

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 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
Principal Consulting Actuary

Anu Patel, FSA, MAAA
Principal Consulting Actuary

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, 2015. 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 2017, 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 represent our best estimate, in cooperation with the Board's views, 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 Baltimore City Code requires an experience study of the System to be performed at least once every four years. The actuarial assumptions used in this report have been updated to reflect the new assumptions approved by the Retirement Board, as presented in the Experience Study Results and Recommendations Report performed in August 2015. The following outlines the basic assumption changes. For a more detailed description of these assumption changes, refer to Appendix B of this report or the experience study report.

- Changes to demographic assumption changes, including updates to the termination rates, retirement rates, disability rates and an assumption for new entrants
- Updated mortality rates to RP 2000 tables with projections for future improvements
- Categorized terminated vested participants with active participants for discount rate purposes in calculating actuarial liability
- Added explicit administrative expenses to the annual cost calculation
- Decrease in future salary increases
- Decrease in inflation assumption from 2.75% to 2.65%

The employers' annual contributions to this System are determined as the sum of the net normal cost, reflecting a provision for administrative expenses, and an amortization of the System's unfunded actuarial liability. The employer contribution rate will change when benefits are modified or assumptions are changed. The rate also changes in response to actuarial gains and losses on either the assets or the liabilities of the System. This report was prepared using census data and financial information as of July 1, 2015 as provided to us by the System and does not reflect any subsequent changes in the membership or assets.

The key results of the June 30, 2015 actuarial valuation are as follows:

- Investments earned 4.25% 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 7.75% 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 for active and deferred vested participants versus participants in pay status over the total present value of benefits of the System) which results in a blended expected discount rate this year of 7.09%.

- The actuarial asset value return was 6.92%, which produced a net loss of $16.5 million to the Fund this year when measured against the expected asset return of 7.75%.

- The unfunded actuarial liability decreased from $670.0 million on June 30, 2014 to $637.5 million on June 30, 2015. There was an asset loss of $16.5 million (based on actuarial assets) and a liability loss of $2.1 million. Gains and losses are presented in detail in Section III of this report.

- The unfunded actuarial liability decreased by $3.8 million due to changes in actuarial assumptions resulting from the 2014 experience study.

SECTION I
SUMMARY

- There was still an overall anticipated decrease in the unfunded liability due to Plan contributions plus investment income being higher than the annual accruals and benefits being paid out of the Plan, impact of gains and losses and changes in assumptions.

- The System's funded ratio, which is the ratio of actuarial asset value to actuarial liability improved from 69.7% last year to 71.7% this year.

- Employee contributions for Plan C members, who are not part of Detention Services or Department of Education began at 1.0% of compensation on July 1, 2013 and continue to increase by 1.0% each year thereafter until employee contributions reach 5.0% of compensation. The expected member contribution rate for Plan C members is 3% of pay for FYE 2016.

- Due to timing differences between when member contributions first became effective and when the City made payments into the System for FYE 2014 and FYE 2015, the City contribution was not offset for Plan C member contributions. Therefore, the FYE 2016 contribution of $86,974,700 previously calculated as of the July 1, 2014 valuation was adjusted to account for payments made in excess of the net employer required contribution by the City. After reflecting a credit of $11,112,944 for the overpayments, this results in a net recommended City contribution of $75,861,756 for FYE 2016. However, it is our understanding that a total contribution of $77,100,573 was already paid for in FYE 2015. For valuation purposes we carried forward the difference as a credit against the FYE 2016 contribution amount.

- For FYE 2017, the required contribution after adjusting for expected member contributions is $85,809,276. This amount is further reduced to $84,474,449 after the recognition of accumulated employee contribution credits. After the contribution is made for FYE 2017, there should be no further catch-up adjustments for the phase-in of member contributions.

- The total recommended contribution increased by 11.4% from $75,861,756 for FYE 2016 to $84,474,449 for FYE 2017 mainly due to the decline in the phase in adjustments for expected employee contribution. This represents an increase in cost as a percent of pay from 18.90% to 20.70%. The City's portion of the cost net of Detention Services and Department of Education for FYE 2017 is $68,798,514 compared to $61,547,003 for FYE 2016 which reflects the expected member contribution offsets. It is our understanding 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 16 years.

SECTION I
SUMMARY

- Employees hired or rehired after July 1, 2014 are now covered under a new Class D membership if they elect the "hybrid" plan option at time of employment. New employees will have the option to participate in both the Employees' Retirement System and the new Retirement Savings Plan (RSP) as hybrid members or opt out of the System and participate only in the RSP as non-hybrid members. Due to the one-year waiting period for Class D membership eligibility, there were no Class D members in the System as of July 1, 2015.

The tables below provide details on the development of the FYE 2017 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 reflect the offset of expected member contributions.

Table I-1
Valuation Summary

	2014 Valuation Applies to FYE 2016		2015 Valuation Applies to FYE 2017	
	Amount	% of Pay	Amount	% of Pay
1 Contributions				
Total Normal Cost (with expenses)	$ 26,107,551	6.51%	$ 29,858,791	7.32%
Expected Employee Contributions FYE 2015/2016[1]	(9,724,743)	-2.42%	(13,305,516)	-3.26%
Employer Normal Cost	$ 16,382,808	4.08%	$ 16,553,275	4.06%
Allocation from 6/30/2000 excess earnings to pay Ordinance 01-189 normal cost	(3,055,408)	-0.76%	(3,177,624)	-0.78%
Amortization of unfunded actuarial liability	67,035,323	16.70%	65,774,295	16.12%
Interest to beginning of next FY	6,611,977	1.65%	6,659,330	1.63%
Plan cost before adjustment	$ 86,974,700	21.67%	$ 85,809,276	21.03%
Excess contribution adjustment with interest[2]	(11,112,944)	-2.77%	(1,334,826)	-0.33%
Total lump sum cost	$ 75,861,756	18.90%	$ 84,474,449	20.70%
Total covered payroll	$ 401,291,783		$ 408,095,216	
2 Unfunded Liabilities				
Actuarial Liability				
Active	$ 845,819,382		$ 847,900,707	
Retirees and dependents	1,312,440,514		1,356,302,147	
Terminated vested	52,060,082		48,799,252	
Total	$ 2,210,319,978		$ 2,253,002,106	
Less: Actuarial value of assets	$ 1,540,327,375		$ 1,615,537,148	
Unfunded actuarial liability	$ 669,992,603		$ 637,464,958	
Funded Ratio	69.7%		71.7%	

[1] Reflects 3% of pay for FYE 2016 and and 4% of pay for FYE 2017 for Plan C members.

[2] Reflects the City's overpayment of lump sum cost. City's actual contributions as of July 1, 2015 of $77,100,573 uses $9,874,700 of the $11,112,944 credit for FYE 2016

SECTION I
SUMMARY

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

Table I-2
Active Membership Summary

	Active Members			Payroll		%
	2014	**2015**	**% Increase**	**2014**	**2015**	**Increase**
Class A	21	17	-19.05%	$ 881,727	$ 739,722	-16.11%
Class C	8,883	8,656	-2.56%	400,410,056	407,355,494	1.73%
Total	8,904	8,673	-2.59%	$ 401,291,783	$408,095,216	1.70%
Average				$ 45,069	$ 47,054	4.40%

Table I-3
Inactive Membership Summary

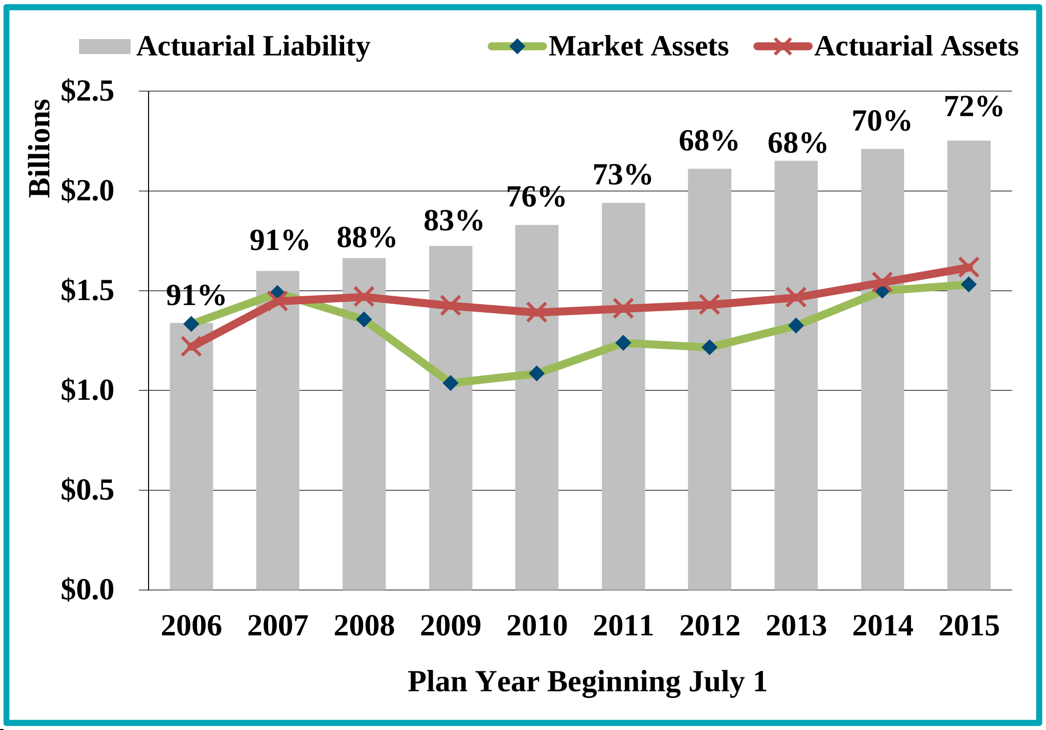
	Number of Retirees			Average Annual Benefit Amount		
	2014	**2015**	**% Increase**	**2014**	**2015**	**% Increase**
Receiving Benefits						
Normal Service Retirement	5,613	5,695	1.5%	$ 16,291	$ 16,840	3.4%
Discontinued Service	945	907	-4.0%	19,888	20,397	2.6%
Ordinary Disability	814	815	0.1%	9,301	9,144	-1.7%
Accidental Disability	67	66	-1.5%	20,968	21,316	1.7%
Social Security Equalization	10	9	-10.0%	5,315	5,903	11.1%
Beneficiaries of Above	1,320	1,314	-0.5%	7,609	7,929	4.2%
Ordinary Death	107	91	-15.0%	11,333	11,152	-1.6%
Special Death	17	1	-94.1%	22,258	10,488	-52.9%
Total	**8,893**	**8,898**	**0.1%**	**$ 14,719**	**$ 15,145**	**2.9%**
Deferred Benefits						
Terminated Vested	1,043	1,068	2.4%	$ 8,375	$ 8,471	1.1%

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.

<u>Assets and Liabilities</u>

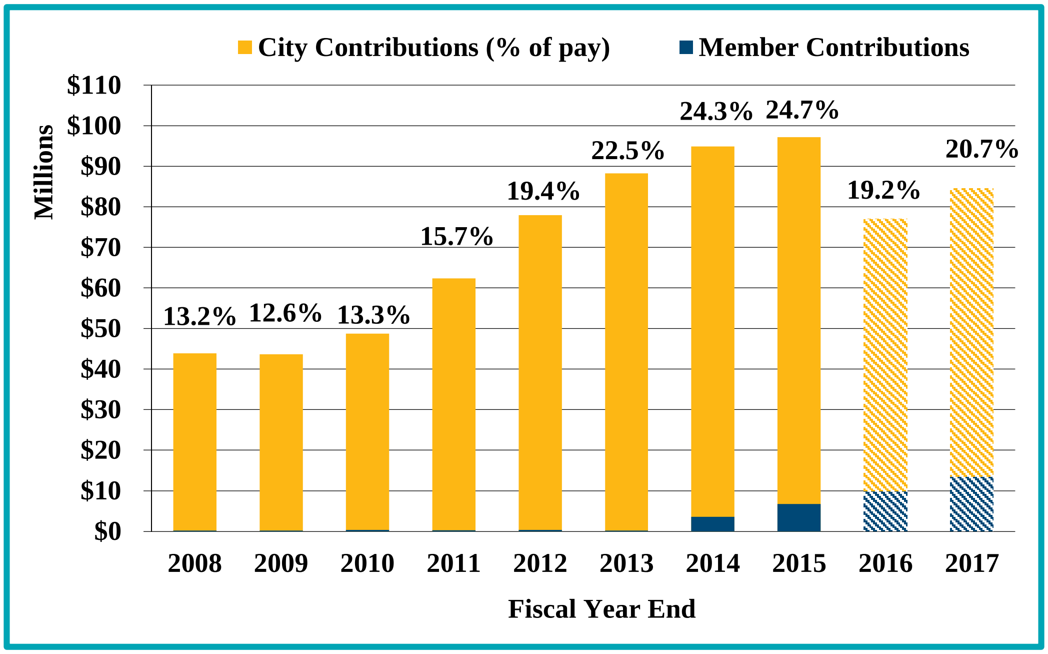


The chart above shows historical trends since 2006 for the market and actuarial value of assets compared to the actuarial liability. The actuarial asset value reflects the market value plus one-fifth of the aggregate investment earnings above or below the expected return. We also show the progress of the Retirement System's funded ratios (ratio of actuarial assets over actuarial liabilities) provided along the top of each bar. As you can see, the System had its highest funded percentage during this decade (91%) on July 1, 2006 and July 1, 2007. After the impact of the market decline in 2008 the System experienced marked lower funded ratios. The deferred investment losses are partially recognized and further offset by investment gains resulting in the actuarial assets being almost equal to the market assets in the last two years. 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 contributions (including City and member contributions) and net City contribution rate as a percent of payroll, shown above each bar. Because there is a one-year lag in the determination of the City contributions, we show the actual contributions made through FYE 2015 and estimated amounts for FYE 2016 and FYE 2017.



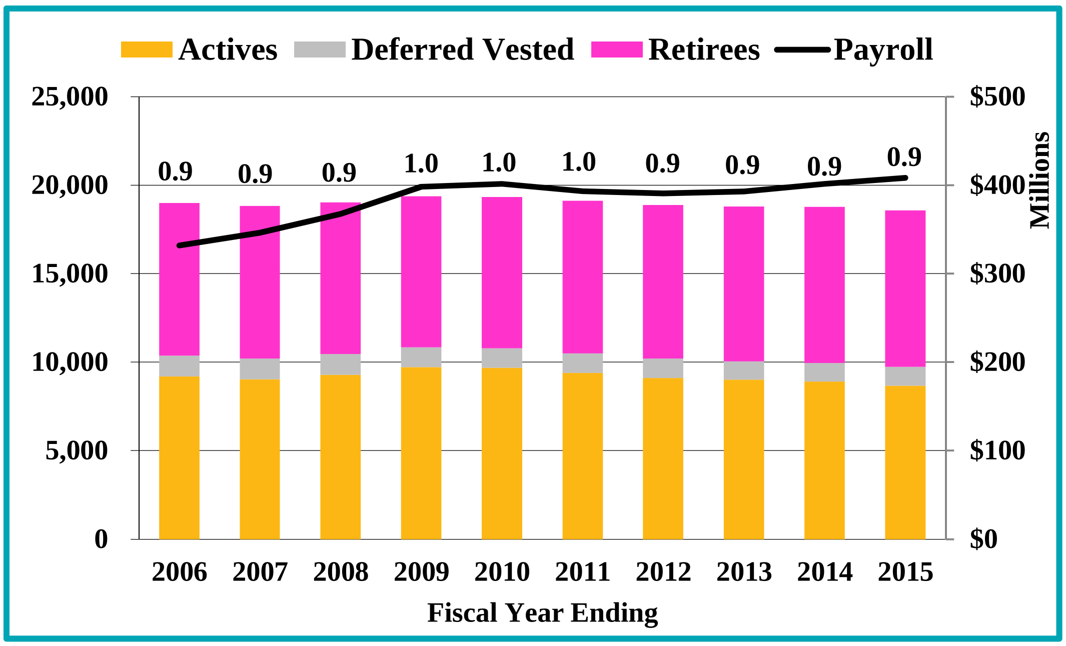
The increasing costs from 2010 to 2015 are a reflection of an increasing unfunded actuarial liability in part due to investment losses. The City contribution rate is net of member contributions. The City contribution rate drops for FYE 2016 mainly due to the one–time credit applied for contributions already made by the City in excess of the required amounts due to the member contribution offset. The member contributions for FYE 2014 start at 1% of pay increasing by 1% each year until they will reach 5% of pay in FYE 2018.

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 black line represents the total covered payroll over the period and it corresponds with the scale on the right. Payroll has remained fairly level since 2009. 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.

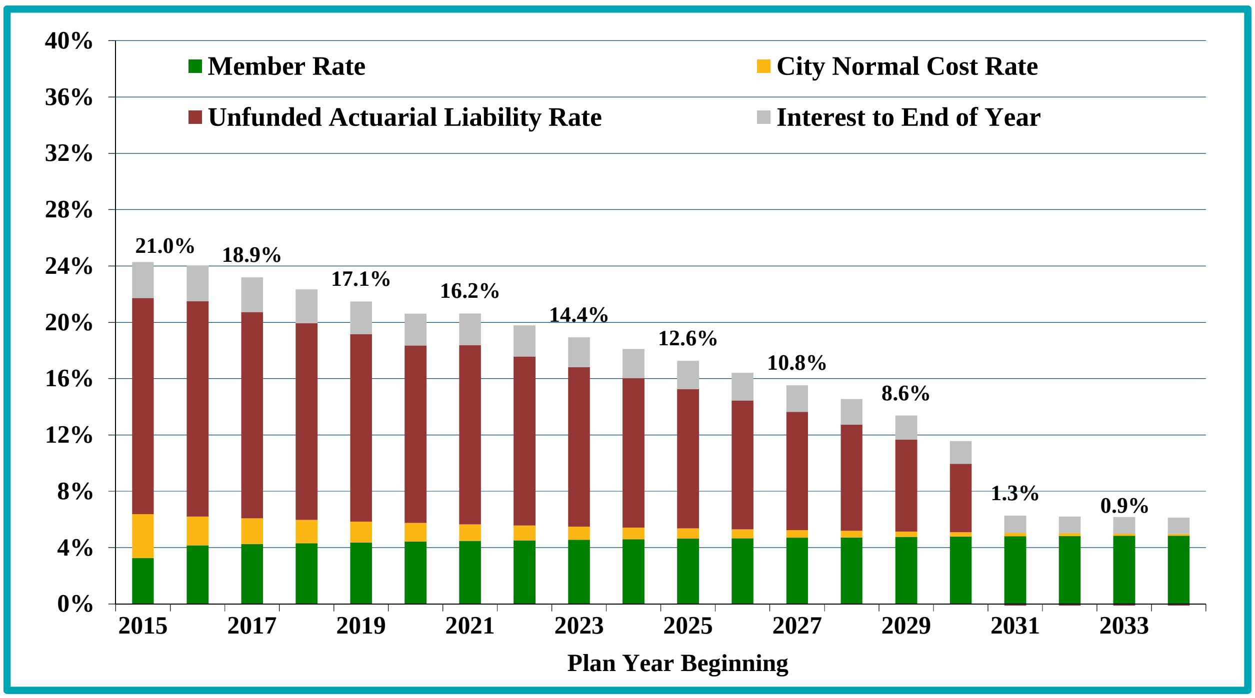


SECTION I
SUMMARY

Base Line Projections

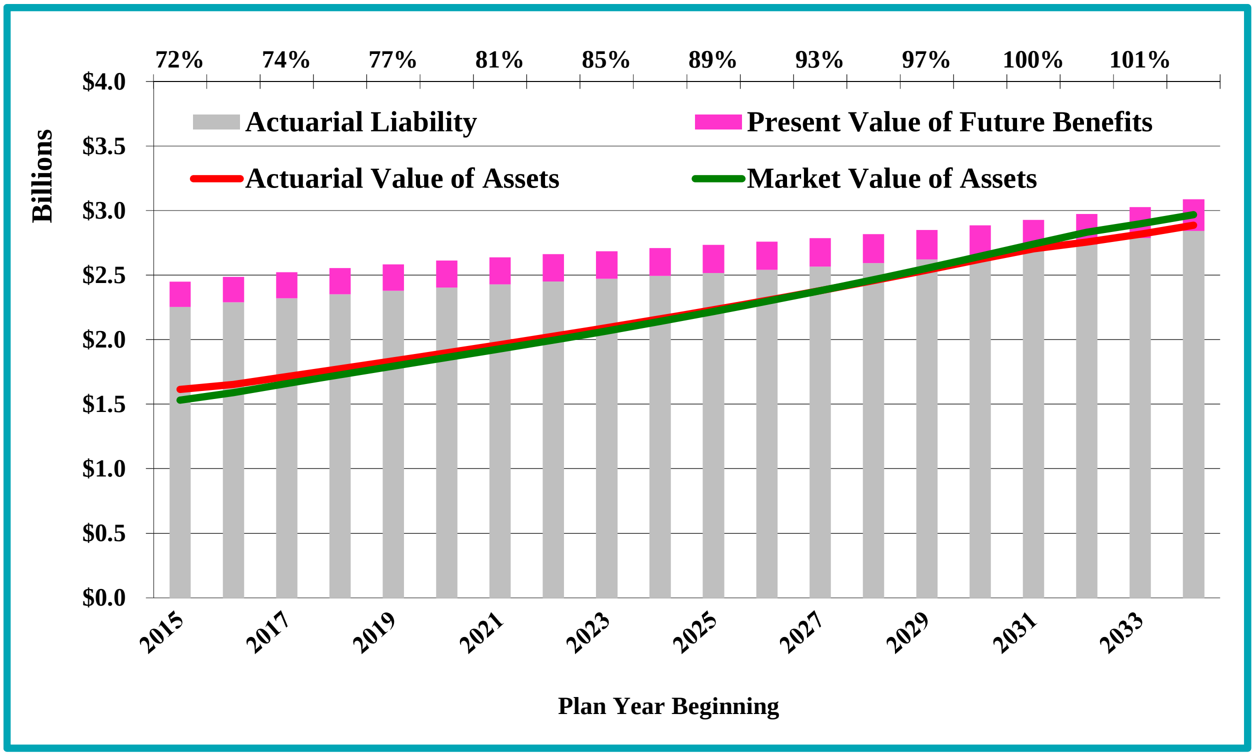
The chart on this page shows the expected progress of the System's funded status over the next 20 years measured in terms of the City's contribution rate and the funded ratio assuming the long-term return rate of 7.75%. This projection reflects the changes in plan membership. All new members participate at a lower benefit formula and contribute at 5.0% of pay under Class D membership.

The first chart below shows the expected member contribution rate, the normal cost rate, the unfunded actuarial liability rate and the net 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 steadily over the projection period as a function of the funding policy which pays the unfunded liability over a fixed period resulting in level dollar amortization payments. The cost eventually drops to 0% when the unfunded liability is fully paid off and the majority of remaining active members are expected to be covered as Class D members. The 5.0% contribution rate for Class D members is expected to be greater than their normal cost rate, the cost of the annual benefit accrual. Therefore the City's net cost will trend toward zero as Class C members retire. The increase in cost in year 2021 is due to the ending of the Ordinance 01-189 normal cost adjustment.



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 72% to 100% funding in 16 years, by 2031.

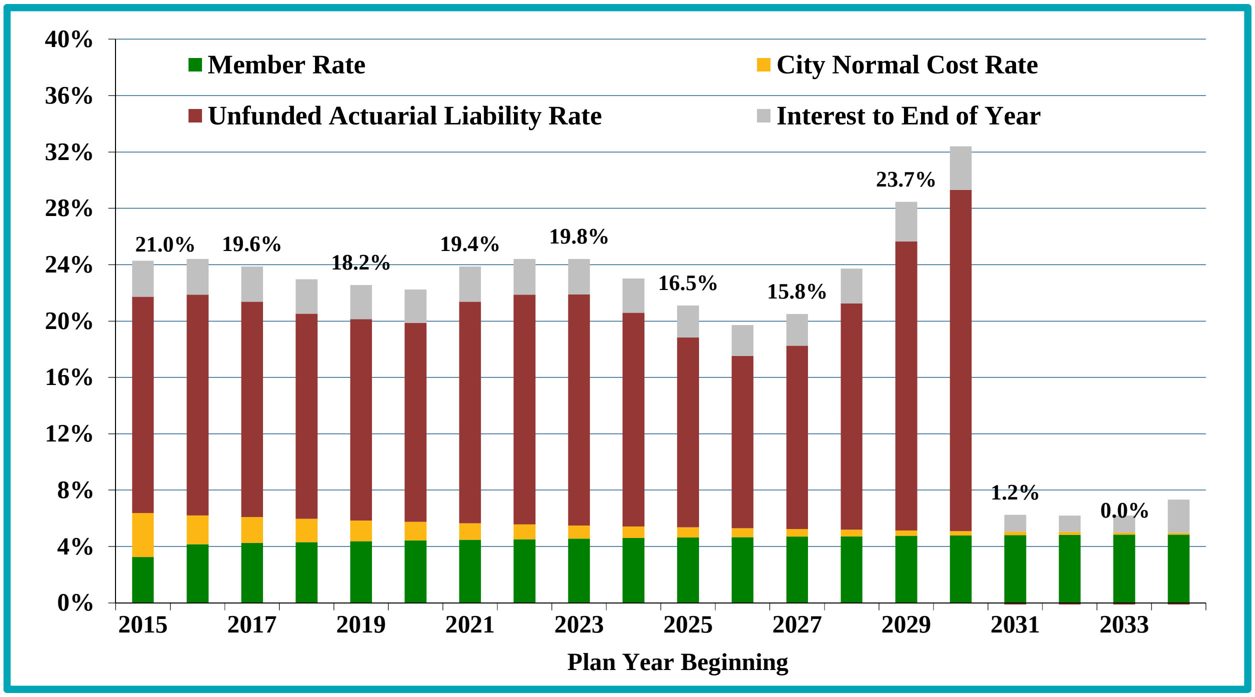


This pattern of funded status improvement is a function of the funding policy to amortize the UAL over a fixed 20-year period from 2011.

SECTION I
SUMMARY

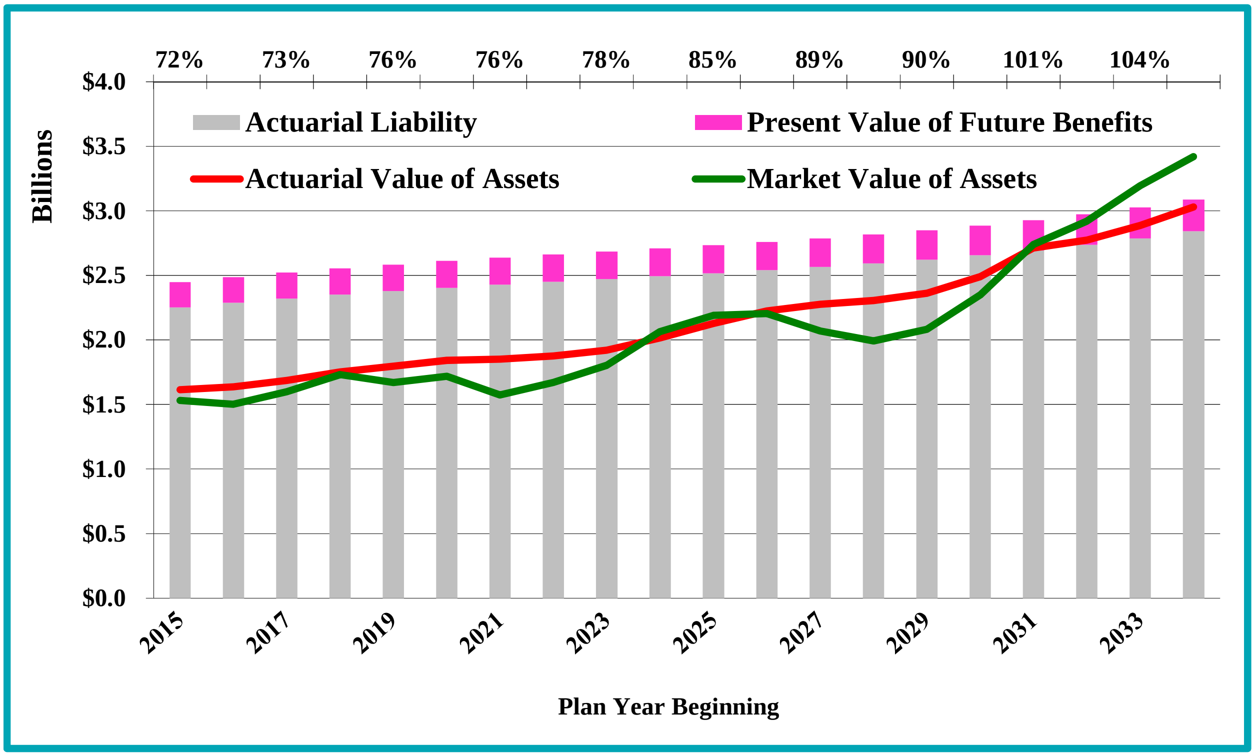
The next two graphs show the same information as above but reflect the fact that the 7.75% investment return is not likely to actually occur each year but represents an average of more volatile returns. They are based on projected returns that while volatile produce the same average 7.75% return based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

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
2.00%	10.00%	12.00%	0.00%	7.00%	-4.50%	11.00%	12.00%	18.00%	9.00%	3.50%	-3.00%	0.00%
			D									
2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
8.00%	15.00%	17.00%	5.50%	15.00%	12.00%	0.00%	6.75%	4.50%	9.50%	6.00%	12.00%	18.00%



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. By the year 2030 the entire unfunded actuarial liability is being recognized in the one year period remaining of the total amortization period. 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, 2015 is summarized below.

Table II-1
Assets of the Plan as of June 30, 2015

	Total Market Value
Fund Balance on June 30, 2014	$ 1,499,236,391
Contributions	
Member	$ 6,728,131
Member purchase service	$ 0
City/State	$ 97,170,796
Net Investment Income	
Interest, dividends, securities lending income and realized capital gains	$ 90,550,977
Unrealized gains (losses)	(14,411,262)
Expenses	(9,321,676)
Total Investment Income	$ 66,818,039
Administrative expenses	$ (3,748,433)
Payments of benefit & refunds	$ (134,270,657)
Fund Balance on June 30, 2015	$ 1,531,934,267

SECTION II
ASSETS

The chart below shows the calculation of investment gains and losses. On a market value basis, the Fund earned a return amounting to total investment income of $63,069,606 during FY 2014-2015. Because the liabilities (Present Value of Future Benefits shown as PVFB in the table below) are valued using different discount rates for actives and terminated vested participants versus retirees, we allocate this return over the 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 $34.1 million. The investment loss on a market basis related to the active liabilities using the expected return rate of 7.75% was $51.9 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 $42.1 million.

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

1. Market Value of assets as of June 30, 2014	$	1,499,236,391
2. Market Value of assets as of June 30, 2015	$	1,531,934,267
3. Earnings during June 30, 2014 to June 30, 2015 (including investment expenses)	$	63,069,606
4. Mean Assets [Half of ((1.) + (2.) - (3.))]	$	1,484,050,526
5. Investment return 2014-2015 [(3.) ÷ (4.)]		4.25%
6. Investment gain / (loss)		
a. Relative to 6.55%: [(5.) - 6.55%] x (4.)	$	(34,133,162)
b. Relative to 7.75%: [(5.) - 7.75%] x (4.)	$	(51,941,768)
7. Funds as a portion of market value of assets		
a. Retired PVFB/Total PVFB		0.55410
b. (Total PVFB - Retired PVFB)/Total PVFB		0.44590
c. Total: (a) + (b)		1.00000
8. Total investment gain / (loss)		
a. Retired: (6a.) x (7a.)	$	(18,913,058)
b. Active: (6b.) x (7b.)	$	(23,161,027)
c. Total Investment Gain / (Loss): (a) + (b)	**$**	**(42,074,085)**

The investment gains for FYE 2015 are taken together with past experience to determine an actuarial asset value for determining the City's contribution obligations.

SECTION II
ASSETS

The table 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. The unrecognized deferred earnings decreased from an excess of $36,964,310 to a deficit of $4,087,820,a change in net unallocated accumulated earnings of $41,052,130 as of June 30, 2015. 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	
	6/30/2014	**6/30/2015**
1. Remaining net excess earnings from prior valuation	$ (66,866,623)	$ 36,964,310
2. New investment gain/(loss)	113,072,011	(42,074,085)
3. Current net excess earnings (1) + (2)	$ 46,205,388	$ (5,109,775)
4. One-fifth (credit) charge (3) /(5)	(9,241,078)	1,021,955
5. Net unallocated excess/(deficit) earnings (3) + (4) = (5)	$ 36,964,310	$ (4,087,820)

SECTION II
ASSETS

The table below shows the calculation of the actuarial value of assets. The assets are smoothed using the unallocated earnings calculation. Additionally, the actuarial value of assets, is offset by the Normal Cost Reserve from Plan Change.

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, 2015			$	1,531,934,267
2. Net deferred recognition of unallocated excess/(deficit) earnings			$	(4,087,820)
3. Normal Cost Reserve from plan change			$	(17,184,382) *
4. Present value of prior year's contributions not yet paid			$	96,699,443
5. Preliminary actuarial value of assets on June 30, 2015 (1) - (2) + (3) + (4)			$	1,615,537,148 **
6. Corridor testing:	80% of market value assets	$ 1,225,547,414		
	120% of market value assets	$ 1,838,321,120		
7. Final actuarial value of assets on June 30, 2015			$	1,615,537,148
8. Ratio of actuarial asset value to adjusted market asset value				100%

* 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 105.5% of the market value which is up from the same measurement last year of 102.7%.

On actuarial asset value, due to the continued gradual recognition of prior year's investment losses, the rate of return is below expectation with an asset rate of return for the year of 6.92% which is compared to the expected investment return of 7.75%. As of June 30, 2015 previous investment losses are partially being recognized and further offset by investment gains which are being deferred for recognition in the future.

SECTION II
ASSETS

The table 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 16 years, and that amount is then added to the Net Normal Cost (cost to cover the upcoming year's expected accruals less member contributions) with the administrative expenses to produce the recommended employer contributions.

Table III-1
Liability By Employee Group

	As of June 30, 2015			
	Dept. of Education	**Detention Services**	**All Others**	**Total**
Number of Participants				
Active	1,635	4	7,034	8,673
Service retired				6,611
Disabled				881
Terminated vested				1,068
Dependents				1,406
Total Participants				18,639
Annual compensation of active participants	$ 75,399,615	$ 211,333	$ 332,484,268	$ 408,095,216
Average Age	50.01	57.00	50.12	50.10
Average Service	12.52	29.51	14.18	13.88
Development of Unfunded Actuarial Liability				
Actuarial Liability				
Active	$ 118,688,656	$ 1,031,564	$ 728,180,487	$ 847,900,707
Retirees and dependents				1,356,302,147
Terminated vested				48,799,252
Total liabilities				$ 2,253,002,106
Actuarial value of assets				
Active	$ 29,456,676	$ 256,018	$ 180,723,055	$ 210,435,749
Retirees and dependents				1,356,302,147
Terminated vested				48,799,252
Total assets				1,615,537,148
Unfunded actuarial liability *	$ 89,231,980	$ 775,546	$ 547,457,432	$ 637,464,958

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

SECTION III
LIABILITIES AND EXPERIENCE GAINS/(LOSSES)

This next table presents the change in actuarial liabilities, actuarial assets and unfunded liability 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 2015 Experience (Gain)/Loss

	Actuarial Liability	Actuarial Value of Assets	Unfunded Actuarial Liability
1. Value as of June 30, 2014	$ 2,210,319,978	$ 1,540,327,375	$ 669,992,603
a.) Actives at 7.75%	$ 845,819,382		
b.) Inactives at 6.55%	$ 1,364,500,596		
2. Additions			
a.) Normal Cost	$ 26,107,551	$ 0	$ 26,107,551
b.) Actual Employer Contributions	$ 0	$ 97,170,796	$ (97,170,796)
c.) Actual Member Contributions	$ 0	$ 6,728,131	$ (6,728,131)
3. Decreases			
a.) Benefit Payments	$ (134,270,657)	$ (134,270,657)	$ 0
4. Expected Interest			
a.) On 1 for one year	$ 154,925,791	$ 119,375,372	$ 35,550,419
b.) On 2a for one year	$ 2,023,335	$ 0	$ 2,023,335
c.) On 2b for one year*	$ 0	$ 7,530,737	$ (7,530,737)
d.) On 2c for 1/2 year	$ 0	$ 255,850	$ (255,850)
e.) On 3a for 1/2 year	$ (4,327,623)	$ (5,105,907)	$ 778,284
5. Expected Value June 30, 2015: (sum 1-4)	$ 2,254,778,375	$ 1,632,011,697	$ 622,766,678
6. Change in methods/assumptions**	$ (3,828,646)	$ 0	$ (3,828,646)
7. Change in benefits	$ 0	$ 0	$ 0
8. Expected value after changes: (sum 5-7)	$ 2,250,949,729	$ 1,632,011,697	$ 618,938,032
9. Actual Value as of June 30, 2015	$ 2,253,002,106	$ 1,615,537,148	$ 637,464,958
10. Actuarial (Gain)/Loss: (8 -9)	$ 2,052,377	$ 16,474,549	$ 18,526,926
11. Total (Gain)/Loss: (6 + 7 + 10)	$ (1,776,269)	$ 16,474,549	$ 14,698,280

* Assumes contributions made at year end.
** Reflects changes in assumptions resulting from the experience study.

SECTION III
LIABILITIES AND EXPERIENCE GAINS/(LOSSES)

Table III-3
Development of 2015 Experience Gain/(Loss)

1. Unfunded Actuarial Liability at June 30, 2014	$	669,992,603
2. Additions (normal cost and contribution)		(77,791,376)
3. Interest accrued*		30,565,451
4. Expected Unfunded Actuarial Liability at June 30, 2015 (1) + (2) + (3)	$	622,766,678
5. Actual Unfunded Actuarial Liability at June 30, 2015	$	637,464,958
6. Total Gain/(Loss) at June 30, 2015 (4) - (5)	$	(14,698,280)

* Interest rate depends on active versus inactive.

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

1. Change in unallocated earnings - Gain/(Loss)	$	41,052,130
2. Change in Normal Cost Reserve - Gain/(Loss)		1,819,408
3. Asset Return - Gain/(Loss)		(59,346,087)
4. Total Actuarial Assets - Gain/(Loss) (1) + 2) + (3)	$	(16,474,549)

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

1. Age and Service Retirements - Gain/(Loss)	$	4,260,272
2. Disability Retirements - Gain/(Loss)		(2,782,359)
3. Death in Service Benefits - Gain/(Loss)		(3,654,698)
4. Withdrawal from Employment - Gain/(Loss)		(8,104,173)
5. Pay Increases - Gain/(Loss)		1,844,095
6. Death after Retirement - Gain/(Loss)		7,621,277
7. New Entrants - Gain/(Loss)		(2,953,695)
8. Assumption Changes - Gain/(Loss)		3,828,646
9. Plan Changes - Gain/(Loss)		0
10. Other - Gain/(Loss)		1,716,904
11. Total Actuarial Liability - Gain/(Loss) (sum (1) to (10))	$	1,776,269

* Interest rate varies based on active versus inactive.

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 and Class C 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. Because the City paid contributions prior to adjusting for Class C member contributions, there is a one-time offsetting credit for City contributions that were paid in excess of the required amounts, which is identified below. 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 16 years.

Table IV-1
Contribution Summary

	As of June 30, 2015				
	Dept. of Education	Detention Services	All Others	Total	% of Pay
Total Normal Cost (including expenses)	$ 5,702,667	$ 13,285	$ 24,142,839	$ 29,858,791	7.32%
Expected Employee Contributions	(6,146)	0	(13,299,370)	(13,305,516)	-3.26%
Net Normal Cost	$ 5,696,521	$ 13,285	$ 10,843,469	$ 16,553,275	4.06%
16-year amortization of Unfunded Actuarial Liability	$ 9,207,048	$ 80,022	$ 56,487,225	$ 65,774,295	16.12%
Allocation from 6/30/2000 excess earnings to pay Ordinance 01-189 normal cost	(444,802)	(3,866)	(2,728,956)	(3,177,624)	-0.78%
Net plan cost at 7/1/2015	$ 14,458,767	$ 89,441	$ 64,601,738	$ 79,149,946	19.39%
Interest to 7/1/2016	1,120,797	6,932	5,531,602	6,659,331	1.63%
Plan cost before adjustment	$ 15,579,564	$ 96,373	$ 70,133,340	$ 85,809,278	21.03%
Estimated excess contribution adjustment with interest	0	0	(1,334,826)	(1,334,826)	-0.33%
Net plan cost at 7/1/2016	$ 15,579,564	$ 96,373	$ 68,798,514	$ 84,474,451	20.70%

* Reflects the City's overpayment of lump sum cost. City's actual contributions as of July 1, 2015 of $77,100,573 uses $9,874,700 of the $11,112,944 credit for FYE 2016

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, 2015. Where data elements may be missing such as dates of hire, dates of birth, and benefit accrual level, we make assumptions to fill-in the blanks. The assumed values (if applicable) are included in Appendix B.

The following pages contain a summary of the data provided.

- Reconciliation of participants as of June 30, 2015
- Age/service and age/salary/service distribution for active members as of June 30, 2015
- Counts and average benefit amount by age for retirees, beneficiaries and disabled members as of June 30, 2015

APPENDIX A
PLAN MEMBERSHIP

PARTICIPANT RECONCILIATION FROM JANUARY 1, 2014 TO JANUARY 1, 2015

	Actives	Term. Vested	Disabled	Retired	Survivor	Total
1. July 1, 2014 valuation	**8,904**	**1,043**	**881**	**6,568**	**1,444**	**18,840**
2. Additions						
a. New entrants / pickups	603					**603**
b. Returned to work	44					**44**
c. Transferred						
Total	**647**					**647**
3. Reductions						
a. Terminated - not vested	(455)					**(455)**
b. Non-Participating	(6)	(4)				**(10)**
c. Lump sum	(4)	(6)				**(10)**
d. Benefits Expired					(12)	**(12)**
e. Deaths without beneficiary	(20)	(24)	(38)	(211)	(125)	**(418)**
Total	**(485)**	**(34)**	**(38)**	**(211)**	**(137)**	**(905)**
4. Changes in status						
a. Terminated - vested	(110)	110				
b. Returned to work	3	(1)		(2)		
c. Retired	(248)	(85)		333		
d. Disabled	(29)	(5)	34			
e. Died with beneficiary	(9)		(6)	(84)	99	
f. Data corrections		40	10	7		**57**
Total	**(393)**	**59**	**38**	**254**	**99**	**57**
5. July 1, 2015 valuation	**8,673**	**1,068**	**881**	**6,611**	**1,406**	**18,639**

APPENDIX A
PLAN MEMBERSHIP

AGE/SERVICE DISTRIBUTION OF ACTIVE PARTICIPANTS
ACTIVE PARTICIPANTS AS OF JUNE 30, 2015

	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	48	0	0	0	0	0	0	0	0	48
25-29	220	88	1	0	0	0	0	0	0	309
30-34	332	249	65	0	0	0	0	0	0	646
35-39	283	312	151	38	1	0	0	0	0	785
40-44	226	259	211	135	36	0	0	0	0	867
45-49	234	310	216	171	78	98	2	0	0	1,109
50-54	176	286	294	197	122	259	82	3	0	1,419
55-59	153	235	251	255	148	306	185	90	0	1,623
60-64	80	178	161	139	87	206	137	135	41	1,164
65-69	39	73	71	76	30	71	45	41	51	497
70 & Up	9	36	30	23	17	28	16	22	25	206
Total	1,800	2,026	1,451	1,034	519	968	467	291	117	**8,673**

Average Age = 50.10 Average Service = 13.88

APPENDIX A
PLAN MEMBERSHIP

AGE/SERVICE DISTRIBUTION OF ACTIVE PARTICIPANTS
ACTIVE PARTICIPANTS AS OF JUNE 30, 2015

AVERAGE EARNINGS

AGE	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Up	Total
Under 25	$ 33,152	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 33,152
25-29	41,252	33,402	47,888	0	0	0	0	0	0	39,038
30-34	51,624	41,201	37,809	0	0	0	0	0	0	46,217
35-39	52,317	47,290	48,750	40,230	43,389	0	0	0	0	49,036
40-44	51,896	42,567	50,232	48,168	53,370	0	0	0	0	48,185
45-49	50,788	43,873	43,619	47,425	53,814	51,434	47,240	0	0	47,204
50-54	48,423	44,765	42,501	43,206	48,256	52,867	53,486	43,654	0	46,814
55-59	47,163	41,936	40,434	40,070	48,037	50,333	54,111	59,383	0	46,398
60-64	51,578	44,079	44,397	42,775	49,078	49,100	52,840	58,824	54,892	48,867
65-69	56,731	45,301	39,759	46,395	51,723	51,809	60,088	55,603	58,311	50,415
70 & Up	30,292	31,896	31,188	41,861	41,089	44,885	53,983	44,325	47,301	40,272
Total	$ 49,208	$ 43,207	$ 43,720	$ 43,815	$ 49,478	$ 50,811	$ 54,171	$ 57,291	$ 54,760	$ 47,054

Total Earnings = $ 408,095,216 Average Earnings = $ 47,054

APPENDIX A
PLAN MEMBERSHIP

Schedule of Benefit Recipients by Attained Age and Type of Retirement - ERS
June 30, 2015 - 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	0	0	0
30-34	0	0	0	2	0	2
35-39	0	0	0	6	0	6
40-44	0	0	0	12	1	13
45-49	1	0	5	32	0	38
50-54	24	0	27	80	5	136
55-59	151	148	104	178	7	588
60-64	445	353	176	181	11	1,166
65-69	821	483	197	137	7	1,645
70-74	727	339	136	84	8	1,294
75-79	510	289	109	51	10	969
80-84	378	292	81	27	8	786
85 & Up	531	212	72	25	9	849
Total	3,588	2,116	907	815	66	**7,492**
Average Annual Benefit	$ 22,445	$ 7,291	$ 20,397	$ 9,144	$ 21,316	$ 16,460

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, 2015 - Beneficiaries

	TYPE OF RETIREMENT							
AGE	NR	ER	DS	ODis	ADis	ODth	ADth	Total
Under 20	4	1	2	3	0	1	0	11
20-24	1	0	0	1	0	1	0	3
25-29	0	0	0	1	0	0	0	1
30-34	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0
40-44	0	0	1	0	0	0	0	1
45-49	1	1	0	3	1	0	0	6
50-54	8	7	2	11	0	3	0	31
55-59	32	13	6	16	1	10	0	78
60-64	53	20	9	43	0	15	0	140
65-69	73	26	22	33	3	12	0	169
70-74	92	41	17	38	1	17	1	207
75-79	103	51	14	30	2	10	0	210
80-84	128	57	23	21	3	13	0	245
85 & Up	203	51	8	28	5	9	0	304
Total	698	268	104	228	16	91	1	**1,406**
Average Annual Benefit	$ 9,965	$ 4,032	$ 10,097	$ 5,100	$ 10,575	$ 11,152	$ 10,488	$ 8,139

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 costs. 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 7/1/2012.

The current unfunded actuarial liability is amortized as a level dollar 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: A liability weighted discount rate is expected on the basis that a 7.75% rate is applied in measuring active and terminated vested participant liabilities, and a 6.55% rate is applied for measuring retiree participant liabilities. The weighted discount rate this year is 7.09%.

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

Investment Return: The investment return assumption is 7.75% net of investment expenses.

Social Security Wage Base: 3.00% per year compounded annually

Inflation: 2.65% (effective 6/30/2015)

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

Age	Salary
20	0.063
25	0.058
30	0.053
35	0.047
40	0.041
45	0.037
50	0.035
55	0.035
60	0.035
65	0.035
69	0.035

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 four years older than his wife.

Remarriage Rates: None.

Expenses: Administrative expenses are expected to be equal to the prior years' actual expenses rounded up to the next hundred thousand dollars and added as part of the annual normal cost for the year (effective 6/30/2015)

Investment expenses are assumed to be paid out of investment earnings

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

New Entrant Assumption: A liability load of 0.5% is applied to active benefits to account for future new entrants who may have previous years of service restored or transferred into the System (effective 6/30/2015)

Withdrawal:

Service	Rate
0	14.50%
1	13.50
2	11.50
3	9.00
4	8.00
5	8.00
6	7.00
7	6.00
8	4.00
9	4.00
10	4.00
11	4.00
12	4.00
13	3.00
14	3.00
15+	3.00

Disability:

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	0.00073	0.00005	0.00010
40	0.00190	0.00006	0.00013
45	0.00332	0.00009	0.00018
50	0.00394	0.00012	0.00023
55	0.00567	0.00013	0.00025
60	0.00715	0.00034	0.00068
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 – RP 2000 Healthy Mortality with projections using 50% of the AA scale projected 15 years with a three year set forward for both males and females (effective 6/30/2015)

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	0.000365	0.000211	0.000050
30	0.000608	0.000365	0.000050
35	0.000928	0.000551	0.000050
40	0.001223	0.000837	0.000050
45	0.001687	0.001271	0.000050
50	0.002546	0.001942	0.000050
55	0.004570	0.003694	0.000050
60	0.008876	0.007366	0.000050
65	0.016084	0.012950	0.000050
69	0.024553	0.019903	0.000050

* Rates for individuals who are the age shown as of June 30, 2015

Post-Retirement Mortality:

1. Retirees and Beneficiaries - RP 2000 Healthy Mortality with projections using 50% of the AA scale projected 15 years with a two year set forward for both males and females

2. Disabled members - RP 2000 Disabled Mortality with generational projections using 50% of the AA scale projected 15 years with a four year set forward for both males and females

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

Sample rates (rates first effective 6/30/2015).

	Retirees and Beneficiaries*		Disabled Members	
Age	Male	Female	Male	Female
55	0.004067	0.003275	0.035243	0.019556
60	0.007763	0.006412	0.042824	0.02562
65	0.014467	0.011715	0.053651	0.034033
70	0.024368	0.019903	0.069235	0.047093
75	0.042215	0.032115	0.093052	0.063837
80	0.074656	0.053410	0.125150	0.088989

* Rates for individuals who are the age shown as of June 30, 2015

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	More than
45 -49	0.00	0.10	0.00
50-54	0.00	0.10	0.05
55	0.03	0.10	0.05
56-57	0.04	0.10	0.05
58	0.05	0.10	0.05
59	0.05	0.10	0.10
60	0.05	0.10	0.10
61	0.07	0.20	0.15
62	0.15	0.20	0.25
63	0.11	0.20	0.20
64	0.14	0.20	0.17
65	0.20	0.30	0.25
66	0.20	0.20	0.25
67	0.17	0.20	0.20
68	0.15	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).

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

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: For participants with a Joint and Survivor benefit who were missing spouse dates of birth, we assumed that the male is four years older than the female.

Justification for Assumptions: The actuarial assumptions were adopted by the Retirement Board, based upon the alternatives presented in the 2014 experience study report conducted on the System's experience from the 2010-2014 valuations. The results of this study were presented in August 2015 and are incorporated into this report by reference.

Changes Since Last Valuation: Demographic assumptions (termination rates, retirement rates, disability rates, mortality rates and new entrant assumption) were updated to reflect the most recent experience study.

Salary increase assumption was changed to better reflect actual experience.

Inflation assumption was decreased from 2.75% to 2.65%.

Administrative expenses of $3,800,000 are explicitly accounted for by adding to the annual cost of the System.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

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 D 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 four 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 A 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 and before July 1, 2014, or any other members who may have elected to transfer during various open transfer periods.

4. Class D – Members who were hired or rehired on or after July 1, 2014. Class D Members have the option to participate in both the Employees' Retirement System and the new Retirement Savings Plan (RSP) as hybrid members or opt out of the System and participate only in the RSP as non-hybrid members. The City contributes 3% of pay to RSP for hybrid members and 4% of pay for non-hybrid members. Members also have the option to make voluntary deferrals to the City's Deferred Compensation Plan, with the City matching 50% of the first 2% of compensation deferred by the member.

Member Contributions

Class A and Class 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. Class C members (except participants of Detention Services and Department of Education) began making contributions at 1.0% of compensation starting July 1, 2013 increasing 1.0% each year until they reach 5.0% of compensation. Class D members make contributions at 5.0% of pay from date of participation. Interest is credited on contributions at a rate of 5.25% per annum for Class A and B members and 3.00% for Class C and Class D members.

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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 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. Classes C and D
      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. Classes C and D – 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. <u>Classes C and D</u> – 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.

<u>Termination of Employment</u>

1. <u>Classes A and B</u>
   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. <u>Classes C and D</u>
   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.

<u>Retirement Allowances</u>

A. Service Retirement:
   1. <u>Classes A and B</u>
      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. <u>Class C</u>
      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.

3. Class D
   A pension of 1.00% of Average Final Compensation, times years of service. If the member retires at or after age 62 with at least 20 years of service the member receives an enhanced benefit of 1.10% of Average Final Compensation times years of service.

B. Early Retirement:
1. Classes C and D
   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. Classes C and D
   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.

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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. Classes C and D
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.

H. Job Removal Retirement Benefit (Immediate Payment):
Unreduced retirement benefit based on actual years of service credit is provided to any member who is removed from a permanent position without fault, provided they had 20 years of service.

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

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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. Classes 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 or his partner(s) is his spouse with whom he has been living for at least 5 years, such beneficiary may elect 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. Classes C and D
   - 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; 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:

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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.

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.