Annual State Retirement and Pension System's Investment Overview

Presented to the
Joint Committee on Pensions

Department of Legislative Services
Office of Policy Analysis
Annapolis, Maryland

November 2012

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At the request of the Joint Committee on Pensions, the Department of Legislative Services (DLS) annually reviews the investment performance of the State Retirement and Pension System (SRPS) for the preceding fiscal year. This report is intended to provide an overview of the SRPS performance, a comparison of this performance to its peers, and an identification of issues meriting consideration by the joint committee during the upcoming legislative session.

State Retirement and Pension System Investment Performance

For the first time in three years, the system's investment returns fell short of its investment return target of 7.75% by a significant margin. Public equity markets worldwide struggled through fiscal 2012, led by the fiscal and credit crises in the Eurozone countries. Broad indices of public equities demonstrate just what a difficult year it was in that asset class. The MSCI international index declined 14.57%, and the U.S. domestic S&P 500 index rose just 5.45%. As public equities make up 42.4% of the portfolio, the system was not able to achieve its investment target with such weak performance from public equities.

The system's investment portfolio returned 0.36% net of management fees in fiscal 2012. As shown in **Exhibit 1**, the system's assets totaled \$37.1 billion as of June 30, 2011, a slight decrease over the fiscal 2011 fund balance of \$37.5 billion due to net benefit payments. The strongest performing asset classes in fiscal 2012 were real estate (8.73%) and fixed income (8.25%), which were also the only two asset classes to outperform the system's assumed rate of return of 7.75%. Private equity also performed well, earning 7.49%. Driven by weak international markets, the two weakest asset classes, and the only two to earn negative returns for the fiscal year, were international equity (-14.49%) and global equity (-6.34%), which includes a mix of domestic and international stocks.

Exhibit 1
State Retirement and Pension System of Maryland
Fund Investment Performance for Periods Ending June 30, 2012[1]
($ in Millions)

			Time Weighted Total Returns		
	Assets	**% Total**	**1 Year**	**5 Years**	**10 Years**
Domestic Equity	$4,815.6	13.0%	1.14%	-0.32%	5.41%
International Equity	5,574.4	15.0%	-14.5%	-4.67%	5.82%
Global Equity	5,330.2	14.4%	-6.34%	-2.44%	n/a
Fixed Income	7,106.9	19.2%	8.25%	7.44%	6.34%
Credit Opportunity	2,882.7	7.8%	3.10%	n/a	n/a
Real Estate	2,364.3	6.4%	8.73%	-1.6%	8.22%
Real Return	3,709.2	10.0%	4.57%	8.04%	n/a
Private Equity	2,107.6	5.7%	7.49%	6.03%	8.56%
Absolute Return	2,535.4	6.8%	3.68%	n/a	n/a
Cash	646.3	1.7%	5.32%	n/a	n/a
Total Fund	**$37,072.6**	**100.0%**	**0.36%**	**0.78%**	**5.89%**

[1] Data presented here includes money invested by the system on behalf of the Maryland Transit Administration.

Note: Returns beyond one year are annualized. One-year returns are net of fees; returns beyond five years are gross of fees. Columns may not add to total due to rounding.

Source: State Street Investment Analytics

Terra Maria Program

The Terra Maria program, which serves as the system's emerging manager program, generally underperformed program benchmarks for the first time since its inception. Whereas asset managers in the program had, on balance, outperformed both program benchmarks as well as many of the system's larger managers; however, fiscal 2012 saw their performance regress. The program had experienced rapid growth over its first five years, but appears to have reached a plateau, with the total number of asset managers in the program remaining unchanged at 110 and total assets devoted to the program decreasing by 5.7% ($177.2 million). **Exhibit 2** provides an overview of the Terra Maria program by program manager and asset class.

For fiscal 2012, only two of the six program managers outperformed their custom benchmarks, and on the whole, the program underperformed its benchmark by 107 basis points.

Exhibit 2
Terra Maria Program Performance
June 30, 2012
($ in Millions)

Program Manager	Total Assets	Actual (FY 2012)	Benchmark (FY 2012)	Actual (Inception)	Benchmark (Inception)
Attucks	$404.6	-2.03%	-0.68%	16.78%	16.28%
Bivium	282.8	-4.85%	-5.61%	14.87%	14.73%
Capital Prospects	414.6	0.50%	2.65%	19.83%	19.28%
FIS Group	343.7	-6.12%	-4.80%	14.88%	14.17%
Leading Edge	334.3	-7.57%	-8.42%	17.00%	14.90%
Northern Trust	626.9	-1.18%	-0.62%	2.22%	0.76%
Progress	710.7	-0.55%	1.90%	13.54%	14.57%
Asset Class					
U.S. Equity	$1,505.9	0.07%	2.77%	4.22%	2.97%
International Equity	682.5	-12.56%	-14.54%	-3.02%	-5.31%
Global Equity	243.0	-9.85%	-5.98%	10.34%	11.67%
Fixed Income	486.8	7.96%	7.47%	9.01%	8.32%
Credit Opportunity	165.0	2.20%	4.07%	8.18%	9.41%
Real Return	34.4	12.31%	9.28%	10.13%	9.49%
Total	**$3,117.6**	**-2.54%**	**-1.47%**	**2.73%**	**1.00%**

Note: Actual returns are net of fees; returns beyond one year are annualized. Total assets may not sum to total due to rounding.

Source: State Retirement Agency

Looking at performance by asset class, performance was mixed, with three asset classes outperforming the respective benchmarks and three underperforming. With the program heavily weighted toward U.S. equity, however, underperformance in that class was a drag on overall one-year results for the program.

Since its inception, the Terra Maria program continues to add value to the portfolio, with performance generally exceeding benchmarks but by smaller margins than in the past. Among program managers, all but one (Progress) continue to beat their benchmarks since inception. Looking at asset classes, only global equity and credit opportunity have underperformed their benchmarks since inception. As a result, total program performance continues to exceed the composite benchmark.

DLS recommends that State Retirement Agency (SRA) and board discuss their expectation for the Terra Maria program going forward, and particularly whether the size of the program should be capped now that it appears to have reached a stable level.

Performance Compared to Other Systems

According to the Trust Universe Comparison Service (TUCS), the system's fiscal 2012 investment performance placed it in the bottom half among 22 public pension funds with at least $25 billion in assets. The system's fiscal 2012 performance placed it at the seventy-fifth percentile, as shown in **Exhibit 3.** In the TUCS analysis, the one-hundredth percentile is the lowest ranking, and the first percentile is the highest. Maryland's ranking, therefore, represents a modest improvement from its performance in the eighty-seventh percentile ranking from a year earlier. On a three-year basis, the fund continues to perform near the median, as was the case last year; this is driven largely by strong relative returns in fiscal 2010. However, on a 10-year basis, the system still ranks near the bottom of large public pension funds. TUCS rankings are based on returns gross of fees.

Exhibit 3
TUCS Percentile Rankings for Periods Ending June 30
Fiscal 2009-2012

	2009	2010	2011	2012
1 Year	82	28	87	75
3 Years	86	76	55	60
5 Years	87	78	87	81
10 Years	97	97	100	93

Source: Trust Universe Comparison Service

The TUCS rankings are useful for providing a snapshot assessment of the system's performance relative to other large public pension plans. However, the rankings do not identify the other funds against which SRPS is measured, and provides only limited information on their asset allocation, which has been shown to be responsible for most variation in performance among investment portfolios. Therefore, the rankings offer little by way of explaining why Maryland's performance lags behind that of other funds.

In an effort to illuminate the reasons for Maryland's relative underperformance, DLS identified nine other state pension funds with asset levels that exceed $25.0 billion, which is considered the SRPS peer group. All but two of these funds (Florida and Massachusetts) outperformed SRPS in fiscal 2012, and all provide their asset allocation in published reports.

Several other state funds were identified for the analysis, but they did not publish their asset allocation in time for inclusion in this report, so they were not included.

Exhibit 4 provides information on the nine funds (besides Maryland) included in the analysis, including their one-year return and asset allocation. Several of the systems provide their allocation to public equity but do not distinguish between domestic and international holdings. Given the disparity in performance between domestic and international stocks highlighted earlier, this omission hampers the overall analysis.

Exhibit 4

Performance and Asset Allocation of Public Pension Fund Peers
Fiscal 2012

		Asset Allocation								
	FY 2012 Return	U.S. Equity	Int'l. Equity	Fixed Income	Private Equity	Real Estate	Real[1] Return	Hedge Funds	Credit	Cash/ Other
Maryland	**0.36%**	**21.5%**	**20.9%**	**19.2%**	**5.7%**	**6.4%**	**10.0%**	**6.8%**	**7.8%**	**1.7%**
Virginia	1.40%	20.1%	22.8%	25.9%	9.1%	8.2%	n/a	n/a	13.6%	0.4%
Pennsylvania Teachers	3.43%	11.6%	11.4%	20.8%	22.0%	12.8%	4.3%	12.6%	n/a	4.5%
Massachusetts	-0.08%	19.3%	23.4%	13.0%	12.1%	9.7%	3.9%	9.9%	8.6%	0.2%
New Jersey	2.26%	25.4%	19.9%	23.6%	6.8%	4.7%	5.5%	5.2%	3.7%	5.4%
North Carolina	2.20%	47.4%		37.5%	4.0%	5.5%	2.0%	0.6%	3.0%	n/a
Florida	0.29%	56.5%		25.5%	5.3%	7.6%	n/a	4.3%	n/a	0.9%
California Teachers	1.80%	50.7%		18.4%	14.5%	14.2%	0.2%	n/a	n/a	2.0%
California Employees	1.00%	49.0%		18.0%	14.0%	9.0%	4.0%	2.0%	n/a	3.0%
Washington State	1.40%	36.0%		22.2%	26.0%	13.7%	1.4%	n/a	n/a	0.8%

Note: Asset allocation percentages for each system may not sum to 100.0% due to rounding.

[1]Includes inflation-linked securities, commodities, and timber.

Source: State Retirement and Pension System; annual investment reports of state pension funds

Based on these allocations, the reasons for Maryland's underperformance relative to its peers becomes clear, as its allocations to the most robust asset classes in fiscal 2012 lagged that of most of its peers. As noted earlier in this report, the three strongest asset classes in fiscal 2012 were real estate, fixed income, and private equity. As Exhibit 4 shows, all but two of the funds had higher allocations than Maryland to real estate, all but three had higher allocations to fixed income, and all but two had higher allocations to private equity. Also, two of the three funds that outperformed Maryland and that also report both international and domestic equity allocations had lower allocations to international equity, which was by far the lowest performing class. Florida, one of the two funds to underperform Maryland in this group, had by far the highest allocation to public equity, which was the only asset class to experience negative returns in fiscal 2012. Florida was able to make up some of the poor performance in equities with a high allocation to fixed income, but it was not enough to keep it from underperforming its peers. Massachusetts maintained a relatively low allocation to public equity, but it was heavily weighted to international stocks, which hurt its performance overall. A low allocation to fixed income also was a drag on its performance.

Looking Ahead: The Future of SRPS Investments

Asset Allocation Continues Transition to Long-term Targets

It may seem from the above analysis of Exhibit 4 that Maryland should make significant adjustments to its asset allocation to conform more closely with the asset allocation of its high-performing peers. Although the system did not make any substantive changes to its strategic asset allocation in fiscal 2012, it is still implementing changes in asset allocation that were adopted beginning in fiscal 2008. As a result, some adjustments are still underway. **Exhibit 5** demonstrates that the system is currently in the process of moving toward its long-range strategic targets by reducing its exposure to public equities and fixed income, and increasing its exposure to alternative asset classes such as private equity and credit/opportunity.

Exhibit 5
State Retirement and Pension System Asset Allocation
Fiscal 2011-2012

	Strategic Target 6/30/2012	Actual 6/30/2012	Actual 6/30/2011
Equity			
Domestic Stocks		13.0%	16.3%
International Stocks		15.0%	18.7%
Global Equity		14.4%	12.2%
Total Public Equity	**36.0%**	**42.4%**	**47.2%**
Private Equity	10.0%	5.7%	4.3%
Real Estate	10.0%	6.4%	5.8%
Fixed Income	10.0%	19.2%	20.3%
Real Return Strategies	15.0%	10.0%	10.4%
Absolute Return	7.0%	6.8%	4.4%
Credit/Opportunity	10.0%	7.8%	5.9%
Cash and Other	2.0%	1.7%	1.7%
Total Assets	**100.0%**	**100.0%**	**100.0%**

Note: Data reflects all system assets held at State Street. Columns may not add to total due to rounding.

Source: State Retirement Agency

Additional changes beyond those already underway may not be warranted because asset class performance fluctuates from year to year. Attempting to chase returns by, for instance, substantially increasing the strategic allocation to fixed income, will likely lead to disappointing results as financial markets continue to stabilize and historic patterns of performance reemerge. The adjustments to asset allocation currently underway, which have been gradually implemented over the last five years and will continue for several more years, are designed to provide an optimal long-term asset allocation based on historical and projected performance of each category of investment.

Exhibit 6, which shows asset class returns in the SRPS portfolio for the past seven fiscal years, highlights the importance of maintaining a diversified portfolio to provide optimal returns while minimizing volatility. Over the long-term, each asset class contributes different strengths and weaknesses to the overall performance of the fund. Public equities have the potential to provide significant gains, often well in excess of the system's 7.75% target, as they did in fiscal 2007, 2010, and 2011, but they bring significant volatility, which manifested as major losses in fiscal 2008 and 2009. That volatility can be offset with the relatively stable returns offered by fixed income and absolute return, but returns for those classes often lag the target. Real return and credit/opportunity can offer countercyclical performance, providing a hedge during periods of weak economic growth, as they did in fiscal 2009 and 2010, respectively. In combination, however, these various asset classes enable the fund to achieve its strategic objectives of maximizing returns and minimizing volatility.

Exhibit 6

State Retirement and Pension System Asset Class Performance

Fiscal 2006-2012

	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
US Equity	9.0%	19.8%	-14.0%	-26.3%	15.9%	32.4%	1.1%
Int'l. Equity	28.2%	29.6%	-6.5%	-31.4%	15.2%	24.6%	-14.5%
Global Equity	n/a	27.5%	-9.5%	-30.4%	15.4%	29.7%	-6.3%
Fixed Income	-0.2%	6.1%	6.5%	4.0%	14.3%	4.8%	8.3%
Real Estate	23.8%	20.1%	-2.9%	-31.6%	3.6%	23.3%	8.7%
Private Equity	22.7%	26.0%	12.9%	-22.3%	14.2%	24.5%	7.5%
Real Return	n/a	3.6%	15.3%	-3.7%	12.1%	13.1%	4.6%
Absolute Return	n/a	n/a	n/a	-6.4%	7.5%	8.5%	3.7%
Credit/Opportunity	n/a	n/a	n/a	n/a	19.2%	13.5%	3.1%
Total	**10.4%**	**17.6%**	**-5.4%**	**-20.0%**	**14.0%**	**20.0%**	**0.4%**

Source: State Retirement and Pension System, State Street Analytics

Exhibit 6 further demonstrates the need for diversity by showing that no single asset class offers consistently superior returns. In fiscal 2006 through 2009, private equity outperformed public equity each year; in the following two years, however, public equities outperformed private equity. Similarly, from fiscal 2006 through 2008, international equity outperformed U.S. equity, but the reverse has been true for the last three fiscal years. For these reasons, making significant asset allocation changes on the basis of a single year's outcome is not advisable. Instead, a long-term perspective on asset allocation that takes into consideration market projections and historical performance is a more prudent approach.

DLS recommends that the board and State Retirement Agency discuss their overall asset allocation strategy, particularly the role of alternative asset classes, in achieving the system's funding goals. Also, the discussion should address the advisability of continuing to expand the credit asset class as economic conditions improve. It should also discuss the relationship between the assumed rate of return and the asset allocation.

Passive Investment Strategy Is Appropriate Only in Some Cases

The Maryland Public Policy Institute (MPPI) recently issued a report advising that SRPS "would be wise to index the system's portfolios to ensure average investment returns." Although DLS has in the past recommended shifting the system's domestic equity assets to more passive managers, MPPI's recommendation is ill conceived and ill advised. Indexing the entire portfolio would have several negative consequences for the system, including:

- reducing, not enhancing, diversification;
- eliminating mandates that have historically added value to the portfolio; and
- potentially placing the system in the risky position of having to liquidate holdings with no guarantee of favorable pricing for those assets.

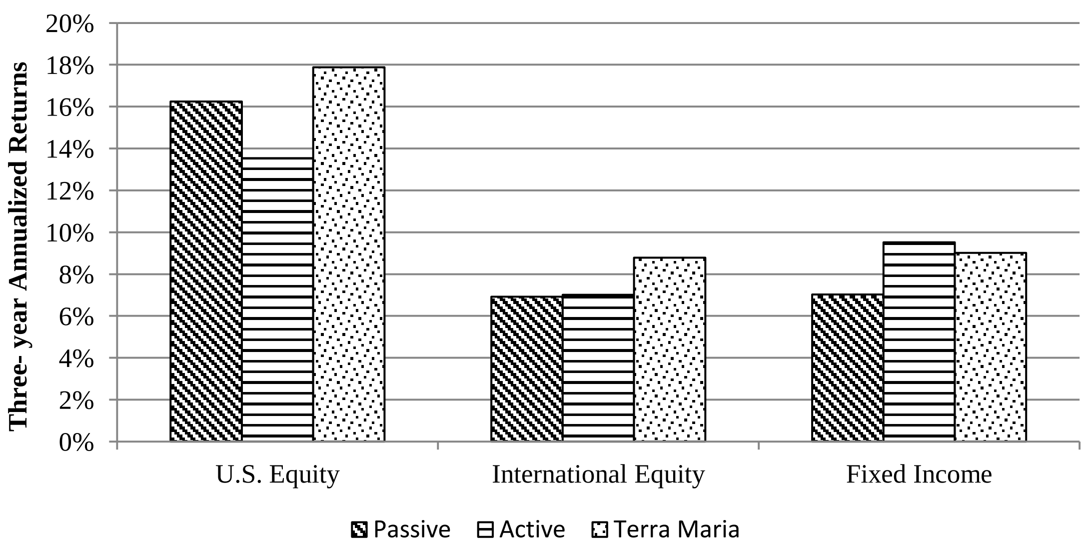
Passive, or indexed, investment is currently possible only in public markets that have valid indices of market performance and investment instruments that track those indices, such as the S&P 500 or MSCI All-Country. SRPS makes extensive use of passive investment vehicles in the three public market asset classes: domestic equity, international equity, and fixed income. Excluding the Terra Maria program, 69.2% of domestic equity, 57.2% of international equity, and 18.8% of fixed income assets were passively managed as of June 30, 2012. Most of the remainder of the SRPS portfolio, however, consists of private market asset classes that either do not have valid broad indices of market performance, or do not have investment vehicles that track those indices. With the exception of some small scale indexed commodities investments within the real return asset class, those asset classes are, by necessity, actively managed. Shifting to a purely passive investment strategy would mean divesting all alternative asset class managers, including some very productive private equity, hedge fund, and real estate managers. As the previous discussion illustrated, greater diversification through the use of alternative asset classes can add stability to a portfolio; divesting those asset classes would, therefore, add risk to the portfolio.

Performance of active managers within the SRPS portfolio has been inconsistent. As **Exhibit 7** shows, three-year annualized returns for active management has varied compared with passive management for the three relevant asset classes. Over the past three years, domestic equity active managers, excluding Terra Maria, have dramatically underperformed passive managers tracking the Russell 1000 and 3000 indices. With regard to international equity, active managers have only slightly overperformed passive managers. By contrast, fixed income active managers have dramatically overperformed passive managers tracking the Barclays Aggregate Bond index over the past three years. DLS notes that for all three asset classes, the Terra Maria program, which is completely actively managed, has overperformed passive managers by significant margins.

Exhibit 7

Active vs. Passive Returns by Asset Class

State Retirement and Pension System



Source: State Street Investment Analytics

DLS has repeatedly and consistently raised concerns about the performance of the system's domestic equity asset managers. For at least the last five years, DLS has recommended that SRPS scale back its active management in domestic equity. These recommendations have been driven not only by the consistently poor performance of those managers but also because of the recognized difficulty in outperforming market indices in this asset class. In short, consistently "beating the market" is very difficult to do in the American stock markets, and paying substantial fees to managers to try to do so is often not cost effective. However, as

Exhibit 7 shows, there are real gains to be made in the other two public market asset classes, and the system has generally realized gains in those classes. DLS notes that the returns shown are net of fees, so the overperformance by active management shown in Exhibit 7 already incorporates the higher fees associated with active management. Therefore, any effort to shift to a purely passive portfolio, even within the asset classes that allow it, would likely result in diminished returns.

SRA advises that, over the past year, it has taken steps to restructure the system's domestic equity portfolio, in part to deemphasize the role of active management. **DLS recommends that SRA and the board brief the committee on the steps it has taken to restructure the program and the expected advantages and risks associated with its changes.**

Appendix 1 presents the fiscal year-end performance by each investment manager for fiscal 2011 and prior periods, by asset class, and subclass

Fees Have Grown as Expected

SRPS incurred $242.3 million in investment management fees in fiscal 2012, a 10.3% increase over fiscal 2011 fees. As shown in **Exhibit 8**, management fees for the plan as a whole have grown substantially since fiscal 2008, when the system adjusted its asset allocation to invest more heavily in alternative asset classes with higher fee structures.

Exhibit 8
Asset Management Fees Paid by Asset Class
Fiscal 2008-2012
($ in Millions)

	2008	2009	2010	2011	2012	% Change 2008-2012
Public Equity	$40.6	$23.3	$55.4	$64.3	$49.5	21.9%
Fixed Income	10.0	7.3	7.9	9.7	9.4	-6.0%
Real Estate	20.9	17.6	25.1	24.1	30.0	43.5%
Private Equity	12.6	27.9	35.6	37.6	44.6	254.0%
Real Return	n/a	7.0	15.9	20.0	20.9	n/a
Credit and Debt Related	n/a	0.3	10.3	20.2	33.0	n/a
Absolute Return	n/a	11.8	13.5	23.4	26.0	n/a
Currency	n/a	1.3	14.4	13.4	9.2	n/a
Service Providers/Other	5.2	0.2	1.4	1.7	3.1	-40.4%
Terra Maria	n/a	6.9	n/a	5.2	16.5	n/a
Total	**$89.3**	**$103.7**	**$183.7**	**$219.6**	**$242.3**	**159.0%**

Note: Columns may not sum to total due to rounding.

Source: State Retirement Agency

In its report, MPPI asserts that Maryland's ratio of fees paid to assets is the fifth highest among state pension funds. This serves as a major justification for MPPI's recommendation that Maryland resort to passive management of assets using index funds, which typically charge substantially lower fees than active managers. As further justification, MPPI notes that Maryland's investment performance has been below the median for most years, which is reflected in the TUCS data presented earlier. However, MPPI presents no analysis on the performance of individual asset classes, net of fees, and whether active management in some cases has yielded returns that exceed common benchmarks. The analysis presented earlier shows that, in fact, active management has yielded returns above benchmarks in fixed income and international equity, net of fees.

DLS recommends that SRA and the board comment on the analysis of management fees contained in the MPPI report and discuss appropriate criteria for gauging the appropriateness of fees paid to external asset managers.

Exhibit 1

Projected Results Under Current Funding Policy
MSRPS - Combined State Systems

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Contribution Rate[1] Fiscal Year	Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Projected Funded Ratios by Valuation Date: Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	7.33%	13.47%	15.67%	14.47%	$1,442,316	2010	63.4%
2011	7.75%	3.00%	2013	4.79%	9.07%	13.86%	15.80%	1,548,983	2011	63.9%
2012	7.75%	3.00%	2014	5.88%	9.55%	15.44%	18.54%	1,791,983	2012	63.5%
2013	7.75%	3.00%	2015	5.71%	10.94%	16.65%	19.67%	1,958,258	2013	63.9%
2014	7.75%	3.00%	2016	5.56%	11.99%	17.55%	20.47%	2,102,917	2014	65.9%
2015	7.75%	3.00%	2017	5.41%	12.83%	18.24%	21.07%	2,234,865	2015	67.4%
2016	7.75%	3.00%	2018	5.25%	13.60%	18.85%	21.59%	2,365,611	2016	68.0%
2017	7.75%	3.00%	2019	5.12%	14.19%	19.31%	21.96%	2,485,682	2017	69.5%
2018	7.75%	3.00%	2020	4.99%	14.65%	19.64%	22.21%	2,597,718	2018	71.1%
2019	7.75%	3.00%	2021	4.86%	15.01%	19.87%	22.35%	2,703,411	2019	72.9%
2020	7.75%	3.00%	2022	4.74%	15.61%	20.35%	22.75%	2,845,423	2020	74.7%
2021	7.75%	3.00%	2023	4.62%	15.78%	20.40%	22.72%	2,940,712	2021	76.6%
2022	7.75%	3.00%	2024	4.51%	15.88%	20.39%	22.63%	3,031,831	2022	78.6%
2023	7.75%	3.00%	2025	4.41%	15.93%	20.33%	22.50%	3,119,442	2023	80.7%
2024	7.75%	3.00%	2026	4.31%	15.93%	20.23%	22.32%	3,204,946	2024	83.0%
2025	7.75%	3.00%	2027	4.21%	15.89%	20.10%	22.12%	3,288,296	2025	85.3%
2026	7.75%	3.00%	2028	4.12%	15.80%	19.92%	21.87%	3,366,568	2026	87.7%
2027	7.75%	3.00%	2029	4.04%	15.68%	19.71%	21.59%	3,442,311	2027	90.2%
2028	7.75%	3.00%	2030	3.95%	15.45%	19.40%	21.22%	3,501,149	2028	92.8%
2029	7.75%	3.00%	2031	3.88%	15.35%	19.23%	20.99%	3,584,807	2029	95.5%
2030	7.75%	3.00%	2032	3.80%	15.30%	19.11%	20.80%	3,676,354	2030	98.4%
2031	7.75%	3.00%	2033	3.73%	15.34%	19.07%	20.71%	3,786,363	2031	101.3%
2032	7.75%	3.00%	2034	3.66%	15.22%	18.88%	20.47%	3,871,743	2032	104.5%
2033	7.75%	3.00%	2035	3.60%	15.22%	18.82%	20.35%	3,981,978	2033	107.8%
2034	7.75%	3.00%	2036	3.54%	11.24%	14.77%	16.25%	3,289,274	2034	111.2%
2035	7.75%	3.00%	2037	3.48%	8.34%	11.82%	13.25%	2,773,923	2035	114.9%
2036	7.75%	3.00%	2038	3.42%	6.06%	9.48%	10.87%	2,352,339	2036	118.0%
2037	7.75%	3.00%	2039	3.37%	4.27%	7.63%	8.98%	2,007,693	2037	120.8%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Projected Results Under Current Funding Policy
MSRPS - Teachers' Combined System

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Fiscal Year	Contribution Rate[1] Normal Cost	Contribution Rate[1] UAAL	Contribution Rate[1] Total	Contribution Rate[1] Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Projected Funded Ratios by Valuation Date: Valuation Date	Projected Funded Ratios by Valuation Date: Funded Ratio
2010	7.75%	3.00%	2012	7.23%	8.22%	15.45%	14.20%	$918,929	2010	65.4%
2011	7.75%	3.00%	2013	4.62%	8.67%	13.29%	15.30%	981,542	2011	66.3%
2012	7.75%	3.00%	2014	5.83%	8.88%	14.71%	17.94%	1,128,853	2012	65.8%
2013	7.75%	3.00%	2015	5.66%	10.22%	15.88%	19.00%	1,236,281	2013	66.1%
2014	7.75%	3.00%	2016	5.51%	11.22%	16.73%	19.75%	1,330,007	2014	68.2%
2015	7.75%	3.00%	2017	5.36%	12.00%	17.36%	20.27%	1,414,144	2015	69.9%
2016	7.75%	3.00%	2018	5.21%	12.69%	17.90%	20.71%	1,496,595	2016	70.5%
2017	7.75%	3.00%	2019	5.08%	13.22%	18.30%	21.01%	1,572,987	2017	72.1%
2018	7.75%	3.00%	2020	4.95%	13.63%	18.58%	21.20%	1,644,131	2018	73.8%
2019	7.75%	3.00%	2021	4.82%	13.94%	18.76%	21.29%	1,710,887	2019	75.6%
2020	7.75%	3.00%	2022	4.70%	13.93%	18.63%	21.07%	1,755,211	2020	77.5%
2021	7.75%	3.00%	2023	4.58%	13.88%	18.46%	20.81%	1,797,884	2021	79.5%
2022	7.75%	3.00%	2024	4.47%	13.79%	18.26%	20.53%	1,838,677	2022	81.5%
2023	7.75%	3.00%	2025	4.36%	13.67%	18.03%	20.22%	1,877,702	2023	83.6%
2024	7.75%	3.00%	2026	4.26%	13.53%	17.79%	19.90%	1,916,414	2024	85.7%
2025	7.75%	3.00%	2027	4.16%	13.37%	17.53%	19.56%	1,953,600	2025	87.8%
2026	7.75%	3.00%	2028	4.06%	13.47%	17.53%	19.49%	2,017,712	2026	90.0%
2027	7.75%	3.00%	2029	3.97%	13.56%	17.53%	19.42%	2,083,612	2027	92.2%
2028	7.75%	3.00%	2030	3.88%	13.65%	17.53%	19.36%	2,151,241	2028	94.6%
2029	7.75%	3.00%	2031	3.80%	13.73%	17.53%	19.29%	2,220,590	2029	97.0%
2030	7.75%	3.00%	2032	3.71%	13.82%	17.53%	19.23%	2,291,496	2030	99.6%
2031	7.75%	3.00%	2033	3.63%	13.90%	17.53%	19.18%	2,364,285	2031	102.3%
2032	7.75%	3.00%	2034	3.55%	13.98%	17.53%	19.12%	2,438,769	2032	105.1%
2033	7.75%	3.00%	2035	3.48%	14.05%	17.53%	19.07%	2,515,271	2033	108.1%
2034	7.75%	3.00%	2036	3.40%	10.62%	14.02%	15.51%	2,115,247	2034	111.2%
2035	7.75%	3.00%	2037	3.33%	7.89%	11.22%	12.66%	1,785,176	2035	114.5%
2036	7.75%	3.00%	2038	3.26%	5.72%	8.98%	10.37%	1,511,754	2036	117.3%
2037	7.75%	3.00%	2039	3.19%	3.99%	7.18%	8.53%	1,284,132	2037	119.9%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Projected Results Under Current Funding Policy
MSRPS - Employees' Combined System (State)

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Fiscal Year	Contribution Rate[1]: Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Projected Funded Ratios by Valuation Date: Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	6.47%	6.93%	13.40%	12.32%	$403,540	2010	59.7%
2011	7.75%	3.00%	2013	4.17%	8.12%	12.29%	14.05%	446,711	2011	59.4%
2012	7.75%	3.00%	2014	4.90%	9.15%	14.05%	16.84%	532,078	2012	58.9%
2013	7.75%	3.00%	2015	4.74%	10.76%	15.50%	18.22%	589,633	2013	59.1%
2014	7.75%	3.00%	2016	4.58%	12.05%	16.63%	19.28%	639,936	2014	60.9%
2015	7.75%	3.00%	2017	4.43%	13.11%	17.54%	20.13%	685,616	2015	62.3%
2016	7.75%	3.00%	2018	4.29%	14.04%	18.33%	20.85%	729,648	2016	62.7%
2017	7.75%	3.00%	2019	4.15%	14.82%	18.97%	21.42%	770,561	2017	64.1%
2018	7.75%	3.00%	2020	4.02%	15.45%	19.47%	21.85%	808,437	2018	65.5%
2019	7.75%	3.00%	2021	3.90%	15.96%	19.86%	22.17%	844,326	2019	67.1%
2020	7.75%	3.00%	2022	3.79%	16.78%	20.57%	22.82%	894,744	2020	68.8%
2021	7.75%	3.00%	2023	3.68%	17.46%	21.14%	23.32%	942,458	2021	70.5%
2022	7.75%	3.00%	2024	3.58%	18.00%	21.58%	23.69%	987,391	2022	72.5%
2023	7.75%	3.00%	2025	3.48%	18.44%	21.92%	23.97%	1,030,575	2023	74.6%
2024	7.75%	3.00%	2026	3.39%	18.77%	22.16%	24.14%	1,071,732	2024	76.9%
2025	7.75%	3.00%	2027	3.31%	19.02%	22.33%	24.25%	1,111,843	2025	79.5%
2026	7.75%	3.00%	2028	3.24%	18.89%	22.13%	23.99%	1,136,281	2026	82.2%
2027	7.75%	3.00%	2029	3.17%	18.48%	21.65%	23.45%	1,147,877	2027	85.2%
2028	7.75%	3.00%	2030	3.10%	17.80%	20.90%	22.64%	1,145,578	2028	88.4%
2029	7.75%	3.00%	2031	3.04%	17.86%	20.90%	22.58%	1,181,270	2029	91.7%
2030	7.75%	3.00%	2032	2.99%	17.91%	20.90%	22.53%	1,218,429	2030	95.2%
2031	7.75%	3.00%	2033	2.94%	17.96%	20.90%	22.47%	1,257,062	2031	98.9%
2032	7.75%	3.00%	2034	2.89%	18.01%	20.90%	22.42%	1,297,265	2032	103.0%
2033	7.75%	3.00%	2035	2.85%	18.05%	20.90%	22.37%	1,339,045	2033	107.4%
2034	7.75%	3.00%	2036	2.81%	13.91%	16.72%	18.14%	1,123,628	2034	112.2%
2035	7.75%	3.00%	2037	2.78%	10.60%	13.38%	14.75%	945,617	2035	117.3%
2036	7.75%	3.00%	2038	2.75%	7.95%	10.70%	12.03%	797,742	2036	122.0%
2037	7.75%	3.00%	2039	2.72%	5.84%	8.56%	9.84%	675,597	2037	126.3%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Projected Results Under Current Funding Policy
MSRPS - State Police

			Contribution Rate[1]						Projected Funded Ratios by Valuation Date	
Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Fiscal Year	Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	25.48%	35.53%	61.01%	59.06%	$50,807	2010	63.0%
2011	7.75%	3.00%	2013	20.44%	40.77%	61.21%	64.57%	51,365	2011	62.0%
2012	7.75%	3.00%	2014	25.40%	41.31%	66.71%	71.85%	58,772	2012	62.1%
2013	7.75%	3.00%	2015	25.12%	41.70%	66.82%	71.90%	59,456	2013	62.0%
2014	7.75%	3.00%	2016	24.75%	40.77%	65.52%	70.51%	59,313	2014	63.1%
2015	7.75%	3.00%	2017	24.38%	40.69%	65.07%	69.97%	60,030	2015	63.5%
2016	7.75%	3.00%	2018	23.97%	42.31%	66.28%	71.10%	61,959	2016	63.0%
2017	7.75%	3.00%	2019	23.58%	42.56%	66.14%	70.87%	62,918	2017	63.1%
2018	7.75%	3.00%	2020	23.22%	42.68%	65.90%	70.53%	63,987	2018	63.3%
2019	7.75%	3.00%	2021	22.88%	42.73%	65.61%	70.14%	65,103	2019	63.4%
2020	7.75%	3.00%	2022	22.55%	105.86%	128.41%	132.83%	126,279	2020	63.5%
2021	7.75%	3.00%	2023	22.26%	106.06%	128.32%	132.62%	129,640	2021	63.5%
2022	7.75%	3.00%	2024	21.97%	106.52%	128.49%	132.67%	133,291	2022	66.2%
2023	7.75%	3.00%	2025	21.71%	106.76%	128.47%	132.53%	137,016	2023	69.1%
2024	7.75%	3.00%	2026	21.46%	106.99%	128.45%	132.40%	140,902	2024	72.2%
2025	7.75%	3.00%	2027	21.25%	106.84%	128.09%	131.91%	145,020	2025	75.4%
2026	7.75%	3.00%	2028	21.06%	99.55%	120.61%	124.31%	141,154	2026	78.9%
2027	7.75%	3.00%	2029	20.87%	93.28%	114.15%	117.74%	137,941	2027	82.7%
2028	7.75%	3.00%	2030	20.68%	87.03%	107.71%	111.19%	134,363	2028	86.4%
2029	7.75%	3.00%	2031	20.52%	69.13%	89.65%	93.02%	116,048	2029	90.2%
2030	7.75%	3.00%	2032	20.38%	58.53%	78.91%	82.17%	106,033	2030	93.9%
2031	7.75%	3.00%	2033	20.26%	55.52%	75.78%	78.92%	105,464	2031	97.1%
2032	7.75%	3.00%	2034	20.16%	37.09%	57.25%	60.28%	83,530	2032	100.0%
2033	7.75%	3.00%	2035	20.07%	29.39%	49.46%	52.39%	75,187	2033	103.0%
2034	7.75%	3.00%	2036	20.00%	-6.87%	13.13%	15.95%	23,764	2034	105.3%
2035	7.75%	3.00%	2037	19.94%	-10.12%	9.82%	12.53%	19,411	2035	107.3%
2036	7.75%	3.00%	2038	19.90%	-11.72%	8.18%	10.79%	17,378	2036	107.6%
2037	7.75%	3.00%	2039	19.87%	-12.25%	7.62%	10.13%	16,931	2037	107.7%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Projected Results Under Current Funding Policy
MSRPS - Judges

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Contribution Rate[1] Fiscal Year	Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Projected Funded Ratios by Valuation Date: Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	31.79%	28.58%	60.37%	60.37%	$25,403	2010	64.9%
2011	7.75%	3.00%	2013	32.31%	28.87%	61.18%	61.18%	25,002	2011	67.8%
2012	7.75%	3.00%	2014	29.91%	21.01%	50.92%	50.92%	21,423	2012	78.4%
2013	7.75%	3.00%	2015	29.79%	21.27%	51.06%	51.06%	22,219	2013	80.2%
2014	7.75%	3.00%	2016	29.66%	20.52%	50.18%	50.18%	22,555	2014	82.6%
2015	7.75%	3.00%	2017	29.70%	20.23%	49.93%	49.93%	23,189	2015	84.6%
2016	7.75%	3.00%	2018	29.49%	20.78%	50.27%	50.27%	24,123	2016	85.2%
2017	7.75%	3.00%	2019	29.41%	20.72%	50.13%	50.13%	24,864	2017	86.7%
2018	7.75%	3.00%	2020	29.54%	20.65%	50.19%	50.19%	25,734	2018	88.3%
2019	7.75%	3.00%	2021	29.47%	20.56%	50.03%	50.03%	26,533	2019	89.8%
2020	7.75%	3.00%	2022	29.36%	14.34%	43.70%	43.70%	23,959	2020	91.5%
2021	7.75%	3.00%	2023	29.22%	14.26%	43.48%	43.48%	24,648	2021	93.1%
2022	7.75%	3.00%	2024	29.42%	14.19%	43.61%	43.61%	25,551	2022	94.2%
2023	7.75%	3.00%	2025	29.32%	14.10%	43.42%	43.42%	26,320	2023	95.4%
2024	7.75%	3.00%	2026	29.21%	14.01%	43.22%	43.22%	27,100	2024	96.6%
2025	7.75%	3.00%	2027	29.25%	13.93%	43.18%	43.18%	28,011	2025	97.8%
2026	7.75%	3.00%	2028	29.21%	12.48%	41.69%	41.69%	27,989	2026	99.1%
2027	7.75%	3.00%	2029	29.12%	10.77%	39.89%	39.89%	27,702	2027	100.4%
2028	7.75%	3.00%	2030	29.18%	9.43%	38.61%	38.61%	27,744	2028	101.7%
2029	7.75%	3.00%	2031	29.19%	4.13%	33.32%	33.32%	24,767	2029	102.9%
2030	7.75%	3.00%	2032	29.20%	2.71%	31.91%	31.91%	24,545	2030	104.0%
2031	7.75%	3.00%	2033	29.18%	0.20%	29.38%	29.38%	23,388	2031	104.6%
2032	7.75%	3.00%	2034	29.22%	0.12%	29.34%	29.34%	24,168	2032	105.2%
2033	7.75%	3.00%	2035	29.22%	-4.18%	25.04%	25.04%	21,350	2033	105.6%
2034	7.75%	3.00%	2036	29.23%	-13.85%	15.38%	15.38%	13,570	2034	105.9%
2035	7.75%	3.00%	2037	29.25%	-13.84%	15.41%	15.41%	14,072	2035	105.9%
2036	7.75%	3.00%	2038	29.28%	-12.21%	17.07%	17.07%	16,134	2036	105.0%
2037	7.75%	3.00%	2039	29.27%	-4.17%	25.10%	25.10%	24,557	2037	104.1%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Projected Results Under Current Funding Policy
MSRPS - LEOPS (State)

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Fiscal Year	Contribution Rate[1] Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Projected Funded Ratios by Valuation Date: Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	17.30%	31.96%	49.26%	47.25%	$43,637	2010	51.4%
2011	7.75%	3.00%	2013	12.35%	34.46%	46.81%	50.14%	44,363	2011	53.8%
2012	7.75%	3.00%	2014	15.39%	37.08%	52.47%	57.72%	50,857	2012	55.0%
2013	7.75%	3.00%	2015	15.27%	36.27%	51.54%	56.72%	50,668	2013	58.6%
2014	7.75%	3.00%	2016	15.08%	35.95%	51.03%	56.11%	51,107	2014	62.7%
2015	7.75%	3.00%	2017	14.90%	35.82%	50.72%	55.69%	51,886	2015	66.2%
2016	7.75%	3.00%	2018	14.74%	36.26%	51.00%	55.85%	53,286	2016	68.6%
2017	7.75%	3.00%	2019	14.59%	36.19%	50.78%	55.51%	54,351	2017	71.7%
2018	7.75%	3.00%	2020	14.46%	36.11%	50.57%	55.18%	55,429	2018	74.8%
2019	7.75%	3.00%	2021	14.32%	36.04%	50.36%	54.85%	56,563	2019	77.9%
2020	7.75%	3.00%	2022	14.20%	24.12%	38.32%	42.69%	45,229	2020	81.0%
2021	7.75%	3.00%	2023	14.10%	23.92%	38.02%	42.27%	46,082	2021	84.2%
2022	7.75%	3.00%	2024	14.00%	23.69%	37.69%	41.82%	46,920	2022	86.3%
2023	7.75%	3.00%	2025	13.91%	23.46%	37.37%	41.37%	47,829	2023	88.5%
2024	7.75%	3.00%	2026	13.82%	23.23%	37.05%	40.93%	48,798	2024	90.7%
2025	7.75%	3.00%	2027	13.74%	22.99%	36.73%	40.49%	49,821	2025	92.9%
2026	7.75%	3.00%	2028	13.67%	16.87%	30.54%	34.18%	43,431	2026	95.3%
2027	7.75%	3.00%	2029	13.60%	17.30%	30.90%	34.43%	45,180	2027	97.7%
2028	7.75%	3.00%	2030	13.54%	14.18%	27.72%	31.13%	42,224	2028	99.6%
2029	7.75%	3.00%	2031	13.48%	13.28%	26.76%	30.06%	42,132	2029	101.7%
2030	7.75%	3.00%	2032	13.43%	8.11%	21.54%	24.73%	35,852	2030	103.6%
2031	7.75%	3.00%	2033	13.39%	7.64%	21.03%	24.12%	36,165	2031	105.5%
2032	7.75%	3.00%	2034	13.35%	1.73%	15.08%	18.07%	28,011	2032	107.0%
2033	7.75%	3.00%	2035	13.31%	3.21%	16.52%	19.41%	31,126	2033	108.6%
2034	7.75%	3.00%	2036	13.28%	-8.20%	5.08%	7.87%	13,065	2034	109.6%
2035	7.75%	3.00%	2037	13.25%	-10.33%	2.92%	5.61%	9,648	2035	110.9%
2036	7.75%	3.00%	2038	13.23%	-10.59%	2.64%	5.24%	9,330	2036	111.0%
2037	7.75%	3.00%	2039	13.20%	-12.20%	1.00%	3.51%	6,476	2037	110.8%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

MSRPS
Exhibit 1 Summary
Projected Results Under Current Funding Policy

	Sum of FY13-FY17 Contributions ($000)	Sum of FY13-FY22 Contributions ($000)	Year Funded Ratio Reaches 80%	Year Funded Ratio Reaches 100%
Combined State Systems	$9,637,005	$22,634,849	2023	2031
Teachers' Combined System	6,090,827	14,270,639	2022	2031
Employees' Combined System (State)	2,893,974	6,941,691	2026	2032
State Police	288,936	669,181	2027	2032
Judges	114,387	239,600	2013	2027
LEOPS (State)	248,880	513,738	2020	2029

Projected Results Under Alternate Economic Assumptions and Funding Policy: 25 Year Closed Amortization and 10 Year Corridor Phase Out Beginning June 30, 2013

MSRPS - Combined State Systems

			Contribution Rate[1]						Projected Funded Ratios by Valuation Date	
Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Fiscal Year	Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	7.33%	13.47%	15.67%	14.47%	$1,442,316	2010	63.4%
2011	7.75%	3.00%	2013	4.79%	9.07%	13.86%	15.80%	1,548,983	2011	63.9%
2012	7.75%	3.00%	2014	5.88%	9.55%	15.44%	18.54%	1,791,983	2012	63.5%
2013	7.70%	2.80%	2015	5.50%	10.67%	16.17%	19.19%	1,903,272	2013	65.2%
2014	7.65%	2.80%	2016	5.48%	11.40%	16.88%	19.81%	2,023,424	2014	66.7%
2015	7.60%	2.80%	2017	5.45%	12.04%	17.49%	20.34%	2,140,296	2015	67.7%
2016	7.55%	2.80%	2018	5.41%	12.76%	18.17%	20.93%	2,270,722	2016	67.5%
2017	7.55%	2.80%	2019	5.28%	13.12%	18.40%	21.08%	2,358,147	2017	68.9%
2018	7.55%	2.80%	2020	5.15%	13.17%	18.32%	20.92%	2,413,406	2018	70.3%
2019	7.55%	2.80%	2021	5.03%	13.03%	18.05%	20.57%	2,449,149	2019	71.8%
2020	7.55%	2.80%	2022	4.91%	12.78%	17.69%	20.13%	2,473,847	2020	73.3%
2021	7.55%	2.80%	2023	4.79%	12.51%	17.30%	19.66%	2,496,181	2021	74.8%
2022	7.55%	2.80%	2024	4.68%	12.23%	16.91%	19.20%	2,517,599	2022	76.3%
2023	7.55%	2.80%	2025	4.58%	11.97%	16.55%	18.77%	2,542,592	2023	77.8%
2024	7.55%	2.80%	2026	4.48%	11.72%	16.19%	18.34%	2,567,241	2024	79.3%
2025	7.55%	2.80%	2027	4.38%	11.46%	15.84%	17.91%	2,592,021	2025	80.8%
2026	7.55%	2.80%	2028	4.30%	11.18%	15.48%	17.48%	2,614,733	2026	82.3%
2027	7.55%	2.80%	2029	4.21%	10.89%	15.10%	17.04%	2,634,106	2027	83.8%
2028	7.55%	2.80%	2030	4.13%	10.59%	14.72%	16.60%	2,649,794	2028	85.3%
2029	7.55%	2.80%	2031	4.05%	10.27%	14.32%	16.14%	2,661,820	2029	86.9%
2030	7.55%	2.80%	2032	3.98%	9.92%	13.90%	15.66%	2,667,181	2030	88.4%
2031	7.55%	2.80%	2033	3.91%	9.53%	13.44%	15.15%	2,664,746	2031	90.0%
2032	7.55%	2.80%	2034	3.84%	9.10%	12.94%	14.59%	2,650,082	2032	91.6%
2033	7.55%	2.80%	2035	3.78%	8.58%	12.35%	13.95%	2,616,519	2033	93.2%
2034	7.55%	2.80%	2036	3.71%	7.93%	11.65%	13.20%	2,554,120	2034	94.9%
2035	7.55%	2.80%	2037	3.66%	7.05%	10.71%	12.21%	2,439,851	2035	96.5%
2036	7.55%	2.80%	2038	3.60%	5.66%	9.26%	10.71%	2,208,867	2036	98.1%
2037	7.55%	2.80%	2039	3.55%	2.40%	5.94%	7.35%	1,563,967	2037	99.6%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Impact of change in funding policy methodology first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. 25-year closed period begins in the 2013 valuation and phase out of corridor first occurs in the 2013 valuation using 72% of the prior year budgeted rate and 28% of the current year actuarial rate. The four year phase-in of the 7.55% interest rate is first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. The wage and price inflation assumption changes are first reflected in the June 30, 2013 valuation. The assumed actual interest rate credited to the assets is 7.55% beginning in the June 30, 2013 valuation.

Projected Results Under Alternate Economic Assumptions and Funding Policy: 25 Year Closed Amortization and 10 Year Corridor Phase Out Beginning June 30, 2013

MSRPS - Teachers' Combined System

			Contribution Rate[1]						Projected Funded Ratios by Valuation Date	
Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Fiscal Year	Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	7.23%	8.22%	15.45%	14.20%	$918,929	2010	65.4%
2011	7.75%	3.00%	2013	4.62%	8.67%	13.29%	15.30%	981,542	2011	66.3%
2012	7.75%	3.00%	2014	5.83%	8.88%	14.71%	17.94%	1,128,853	2012	65.8%
2013	7.70%	2.80%	2015	5.45%	9.88%	15.33%	18.46%	1,196,671	2013	67.6%
2014	7.65%	2.80%	2016	5.43%	10.42%	15.85%	18.88%	1,264,610	2014	69.1%
2015	7.60%	2.80%	2017	5.40%	10.87%	16.27%	19.20%	1,329,447	2015	70.1%
2016	7.55%	2.80%	2018	5.37%	11.41%	16.78%	19.62%	1,404,118	2016	70.0%
2017	7.55%	2.80%	2019	5.24%	11.67%	16.91%	19.65%	1,454,496	2017	71.4%
2018	7.55%	2.80%	2020	5.11%	11.65%	16.76%	19.41%	1,485,696	2018	72.8%
2019	7.55%	2.80%	2021	4.99%	11.46%	16.45%	19.02%	1,505,163	2019	74.3%
2020	7.55%	2.80%	2022	4.87%	11.19%	16.06%	18.54%	1,518,279	2020	75.8%
2021	7.55%	2.80%	2023	4.75%	10.91%	15.66%	18.06%	1,530,377	2021	77.3%
2022	7.55%	2.80%	2024	4.64%	10.62%	15.26%	17.58%	1,541,525	2022	78.8%
2023	7.55%	2.80%	2025	4.54%	10.36%	14.90%	17.14%	1,555,613	2023	80.2%
2024	7.55%	2.80%	2026	4.43%	10.11%	14.54%	16.70%	1,569,047	2024	81.7%
2025	7.55%	2.80%	2027	4.33%	9.86%	14.19%	16.28%	1,582,659	2025	83.1%
2026	7.55%	2.80%	2028	4.24%	9.59%	13.83%	15.85%	1,594,238	2026	84.5%
2027	7.55%	2.80%	2029	4.15%	9.31%	13.46%	15.41%	1,603,504	2027	86.0%
2028	7.55%	2.80%	2030	4.06%	9.02%	13.08%	14.97%	1,610,210	2028	87.4%
2029	7.55%	2.80%	2031	3.97%	8.72%	12.69%	14.52%	1,614,142	2029	88.8%
2030	7.55%	2.80%	2032	3.89%	8.39%	12.28%	14.05%	1,613,833	2030	90.2%
2031	7.55%	2.80%	2033	3.81%	8.03%	11.84%	13.55%	1,607,993	2031	91.6%
2032	7.55%	2.80%	2034	3.73%	7.62%	11.35%	13.01%	1,593,593	2032	93.1%
2033	7.55%	2.80%	2035	3.66%	7.12%	10.78%	12.39%	1,566,329	2033	94.5%
2034	7.55%	2.80%	2036	3.58%	6.51%	10.09%	11.65%	1,519,966	2034	95.9%
2035	7.55%	2.80%	2037	3.51%	5.67%	9.18%	10.69%	1,439,384	2035	97.2%
2036	7.55%	2.80%	2038	3.44%	4.33%	7.77%	9.23%	1,282,479	2036	98.6%
2037	7.55%	2.80%	2039	3.37%	1.18%	4.55%	5.97%	854,864	2037	99.8%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Impact of change in funding policy methodology first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. 25-year closed period begins in the 2013 valuation and phase out of corridor first occurs in the 2013 valuation using 72% of the prior year budgeted rate and 28% of the current year actuarial rate. The four year phase-in of the 7.55% interest rate is first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. The wage and price inflation assumption changes are first reflected in the June 30, 2013 valuation. The assumed actual interest rate credited to the assets is 7.55% beginning in the June 30, 2013 valuation.

Projected Results Under Alternate Economic Assumptions and Funding Policy: 25 Year Closed Amortization and 10 Year Corridor Phase Out Beginning June 30, 2013

MSRPS - Employees' Combined System (State)

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Contribution Rate[1] Fiscal Year	Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Projected Funded Ratios by Valuation Date: Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	6.47%	6.93%	13.40%	12.32%	$403,540	2010	59.7%
2011	7.75%	3.00%	2013	4.17%	8.12%	12.29%	14.05%	446,711	2011	59.4%
2012	7.75%	3.00%	2014	4.90%	9.15%	14.05%	16.84%	532,078	2012	58.9%
2013	7.70%	2.80%	2015	4.54%	10.72%	15.26%	18.00%	579,487	2013	60.4%
2014	7.65%	2.80%	2016	4.51%	11.92%	16.43%	19.10%	629,625	2014	61.7%
2015	7.60%	2.80%	2017	4.47%	12.99%	17.46%	20.07%	677,745	2015	62.5%
2016	7.55%	2.80%	2018	4.43%	14.03%	18.46%	21.00%	727,376	2016	62.3%
2017	7.55%	2.80%	2019	4.30%	14.66%	18.96%	21.44%	761,699	2017	63.6%
2018	7.55%	2.80%	2020	4.17%	14.89%	19.06%	21.48%	783,136	2018	65.0%
2019	7.55%	2.80%	2021	4.05%	14.87%	18.92%	21.27%	796,813	2019	66.5%
2020	7.55%	2.80%	2022	3.94%	14.70%	18.64%	20.93%	805,783	2020	68.1%
2021	7.55%	2.80%	2023	3.83%	14.48%	18.31%	20.53%	813,245	2021	69.6%
2022	7.55%	2.80%	2024	3.73%	14.24%	17.97%	20.13%	820,521	2022	71.1%
2023	7.55%	2.80%	2025	3.64%	14.00%	17.64%	19.74%	828,479	2023	72.7%
2024	7.55%	2.80%	2026	3.55%	13.76%	17.31%	19.35%	836,699	2024	74.2%
2025	7.55%	2.80%	2027	3.47%	13.50%	16.97%	18.95%	844,646	2025	75.8%
2026	7.55%	2.80%	2028	3.39%	13.24%	16.63%	18.55%	852,571	2026	77.4%
2027	7.55%	2.80%	2029	3.32%	12.95%	16.27%	18.13%	859,572	2027	79.0%
2028	7.55%	2.80%	2030	3.26%	12.63%	15.89%	17.69%	865,397	2028	80.7%
2029	7.55%	2.80%	2031	3.20%	12.30%	15.50%	17.25%	870,400	2029	82.5%
2030	7.55%	2.80%	2032	3.15%	11.92%	15.07%	16.76%	873,034	2030	84.3%
2031	7.55%	2.80%	2033	3.10%	11.51%	14.61%	16.25%	873,566	2031	86.2%
2032	7.55%	2.80%	2034	3.05%	11.05%	14.10%	15.69%	870,705	2032	88.2%
2033	7.55%	2.80%	2035	3.01%	10.50%	13.51%	15.05%	862,370	2033	90.3%
2034	7.55%	2.80%	2036	2.97%	9.82%	12.79%	14.28%	845,114	2034	92.4%
2035	7.55%	2.80%	2037	2.94%	8.90%	11.84%	13.28%	811,884	2035	94.6%
2036	7.55%	2.80%	2038	2.91%	7.45%	10.36%	11.75%	742,206	2036	96.9%
2037	7.55%	2.80%	2039	2.88%	4.11%	6.99%	8.34%	543,926	2037	99.1%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Impact of change in funding policy methodology first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. 25-year closed period begins in the 2013 valuation and phase out of corridor first occurs in the 2013 valuation using 72% of the prior year budgeted rate and 28% of the current year actuarial rate. The four year phase-in of the 7.55% interest rate is first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. The wage and price inflation assumption changes are first reflected in the June 30, 2013 valuation. The assumed actual interest rate credited to the assets is 7.55% beginning in the June 30, 2013 valuation.

Projected Results Under Alternate Economic Assumptions and Funding Policy: 25 Year Closed Amortization and 10 Year Corridor Phase Out Beginning June 30, 2013

MSRPS - State Police

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Contribution Rate[1] Fiscal Year	Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Projected Funded Ratios by Valuation Date: Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	25.48%	35.53%	61.01%	59.06%	$50,807	2010	63.0%
2011	7.75%	3.00%	2013	20.44%	40.77%	61.21%	64.57%	51,365	2011	62.0%
2012	7.75%	3.00%	2014	25.40%	41.31%	66.71%	71.85%	58,772	2012	62.1%
2013	7.70%	2.80%	2015	24.54%	55.07%	79.61%	84.71%	69,715	2013	63.4%
2014	7.65%	2.80%	2016	24.54%	56.32%	80.86%	85.89%	71,758	2014	64.0%
2015	7.60%	2.80%	2017	24.51%	57.59%	82.10%	87.04%	74,033	2015	64.5%
2016	7.55%	2.80%	2018	24.42%	60.61%	85.03%	89.90%	77,516	2016	64.1%
2017	7.55%	2.80%	2019	24.06%	61.28%	85.34%	90.13%	79,020	2017	65.0%
2018	7.55%	2.80%	2020	23.72%	61.55%	85.27%	89.97%	80,450	2018	66.0%
2019	7.55%	2.80%	2021	23.39%	61.72%	85.11%	89.71%	81,920	2019	67.0%
2020	7.55%	2.80%	2022	23.09%	61.79%	84.88%	89.38%	83,432	2020	68.1%
2021	7.55%	2.80%	2023	22.81%	61.62%	84.43%	88.82%	85,083	2021	69.2%
2022	7.55%	2.80%	2024	22.54%	61.47%	84.01%	88.28%	86,755	2022	70.4%
2023	7.55%	2.80%	2025	22.28%	61.24%	83.52%	87.68%	88,492	2023	71.6%
2024	7.55%	2.80%	2026	22.05%	60.96%	83.01%	87.06%	90,276	2024	72.8%
2025	7.55%	2.80%	2027	21.85%	60.45%	82.30%	86.23%	92,188	2025	74.1%
2026	7.55%	2.80%	2028	21.67%	59.93%	81.60%	85.41%	94,133	2026	75.5%
2027	7.55%	2.80%	2029	21.48%	59.44%	80.92%	84.62%	96,043	2027	77.0%
2028	7.55%	2.80%	2030	21.31%	58.92%	80.23%	83.83%	97,941	2028	78.6%
2029	7.55%	2.80%	2031	21.15%	58.30%	79.45%	82.94%	99,852	2029	80.2%
2030	7.55%	2.80%	2032	21.01%	57.51%	78.52%	81.90%	101,793	2030	82.0%
2031	7.55%	2.80%	2033	20.90%	56.57%	77.47%	80.74%	103,712	2031	83.9%
2032	7.55%	2.80%	2034	20.80%	55.44%	76.24%	79.40%	105,556	2032	85.9%
2033	7.55%	2.80%	2035	20.71%	54.22%	74.93%	77.99%	107,178	2033	88.0%
2034	7.55%	2.80%	2036	20.64%	52.61%	73.25%	76.20%	108,507	2034	90.3%
2035	7.55%	2.80%	2037	20.59%	50.46%	71.05%	73.89%	109,171	2035	92.7%
2036	7.55%	2.80%	2038	20.54%	47.28%	67.82%	70.56%	108,212	2036	95.2%
2037	7.55%	2.80%	2039	20.51%	40.42%	60.93%	63.58%	100,925	2037	97.9%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Impact of change in funding policy methodology first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. 25-year closed period begins in the 2013 valuation and phase out of corridor first occurs in the 2013 valuation using 72% of the prior year budgeted rate and 28% of the current year actuarial rate. The four year phase-in of the 7.55% interest rate is first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. The wage and price inflation assumption changes are first reflected in the June 30, 2013 valuation. The assumed actual interest rate credited to the assets is 7.55% beginning in the June 30, 2013 valuation.

Projected Results Under Alternate Economic Assumptions and Funding Policy: 25 Year Closed Amortization and 10 Year Corridor Phase Out Beginning June 30, 2013

MSRPS - Judges

			Contribution Rate[1]						Projected Funded Ratios by Valuation Date	
Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Fiscal Year	Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	31.79%	28.58%	60.37%	60.37%	$25,403	2010	64.9%
2011	7.75%	3.00%	2013	32.31%	28.87%	61.18%	61.18%	25,002	2011	67.8%
2012	7.75%	3.00%	2014	29.91%	21.01%	50.92%	50.92%	21,423	2012	78.4%
2013	7.70%	2.80%	2015	29.06%	12.16%	41.22%	41.22%	17,851	2013	82.0%
2014	7.65%	2.80%	2016	29.21%	11.33%	40.54%	40.54%	18,099	2014	83.9%
2015	7.60%	2.80%	2017	29.50%	11.51%	41.01%	41.01%	18,881	2015	84.3%
2016	7.55%	2.80%	2018	29.51%	12.60%	42.11%	42.11%	19,993	2016	83.4%
2017	7.55%	2.80%	2019	29.43%	12.63%	42.06%	42.06%	20,601	2017	84.0%
2018	7.55%	2.80%	2020	29.55%	12.55%	42.10%	42.10%	21,275	2018	84.7%
2019	7.55%	2.80%	2021	29.48%	12.46%	41.94%	41.94%	21,880	2019	85.4%
2020	7.55%	2.80%	2022	29.37%	12.34%	41.71%	41.71%	22,452	2020	86.1%
2021	7.55%	2.80%	2023	29.24%	12.21%	41.45%	41.45%	23,024	2021	86.8%
2022	7.55%	2.80%	2024	29.43%	12.09%	41.52%	41.52%	23,792	2022	87.5%
2023	7.55%	2.80%	2025	29.34%	11.98%	41.32%	41.32%	24,448	2023	88.2%
2024	7.55%	2.80%	2026	29.22%	11.85%	41.07%	41.07%	25,088	2024	88.9%
2025	7.55%	2.80%	2027	29.26%	11.71%	40.97%	40.97%	25,843	2025	89.6%
2026	7.55%	2.80%	2028	29.23%	11.55%	40.78%	40.78%	26,570	2026	90.3%
2027	7.55%	2.80%	2029	29.14%	11.39%	40.53%	40.53%	27,262	2027	91.1%
2028	7.55%	2.80%	2030	29.19%	11.20%	40.39%	40.39%	28,057	2028	91.9%
2029	7.55%	2.80%	2031	29.21%	11.01%	40.22%	40.22%	28,845	2029	92.7%
2030	7.55%	2.80%	2032	29.21%	10.80%	40.01%	40.01%	29,636	2030	93.5%
2031	7.55%	2.80%	2033	29.20%	10.54%	39.74%	39.74%	30,405	2031	94.3%
2032	7.55%	2.80%	2034	29.23%	10.25%	39.48%	39.48%	31,196	2032	95.1%
2033	7.55%	2.80%	2035	29.24%	9.90%	39.14%	39.14%	31,951	2033	96.0%
2034	7.55%	2.80%	2036	29.25%	9.47%	38.72%	38.72%	32,646	2034	96.9%
2035	7.55%	2.80%	2037	29.26%	8.87%	38.13%	38.13%	33,207	2035	97.7%
2036	7.55%	2.80%	2038	29.29%	7.86%	37.15%	37.15%	33,422	2036	98.6%
2037	7.55%	2.80%	2039	29.28%	5.48%	34.76%	34.76%	32,309	2037	99.5%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Impact of change in funding policy methodology first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. 25-year closed period begins in the 2013 valuation and phase out of corridor first occurs in the 2013 valuation using 72% of the prior year budgeted rate and 28% of the current year actuarial rate. The four year phase-in of the 7.55% interest rate is first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. The wage and price inflation assumption changes are first reflected in the June 30, 2013 valuation. The assumed actual interest rate credited to the assets is 7.55% beginning in the June 30, 2013 valuation.

Projected Results Under Alternate Economic Assumptions and Funding Policy: 25 Year Closed Amortization and 10 Year Corridor Phase Out Beginning June 30, 2013

MSRPS - LEOPS (State)

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Contribution Rate[1] Fiscal Year	Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Projected Funded Ratios by Valuation Date: Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	17.30%	31.96%	49.26%	47.25%	$43,637	2010	51.4%
2011	7.75%	3.00%	2013	12.35%	34.46%	46.81%	50.14%	44,363	2011	53.8%
2012	7.75%	3.00%	2014	15.39%	37.08%	52.47%	57.72%	50,857	2012	55.0%
2013	7.70%	2.80%	2015	14.88%	24.40%	39.28%	44.49%	39,548	2013	59.9%
2014	7.65%	2.80%	2016	14.94%	23.42%	38.36%	43.48%	39,332	2014	63.5%
2015	7.60%	2.80%	2017	15.00%	23.50%	38.50%	43.51%	40,190	2015	65.2%
2016	7.55%	2.80%	2018	15.05%	24.24%	39.29%	44.19%	41,719	2016	65.8%
2017	7.55%	2.80%	2019	14.92%	24.07%	38.99%	43.78%	42,331	2017	67.5%
2018	7.55%	2.80%	2020	14.79%	23.81%	38.60%	43.28%	42,849	2018	69.3%
2019	7.55%	2.80%	2021	14.67%	23.52%	38.19%	42.75%	43,373	2019	71.0%
2020	7.55%	2.80%	2022	14.56%	23.19%	37.75%	42.20%	43,900	2020	72.6%
2021	7.55%	2.80%	2023	14.46%	22.81%	37.27%	41.60%	44,450	2021	74.3%
2022	7.55%	2.80%	2024	14.37%	22.42%	36.79%	41.01%	45,006	2022	75.8%
2023	7.55%	2.80%	2025	14.29%	21.98%	36.27%	40.37%	45,560	2023	77.4%
2024	7.55%	2.80%	2026	14.21%	21.52%	35.73%	39.72%	46,131	2024	79.0%
2025	7.55%	2.80%	2027	14.14%	21.01%	35.15%	39.02%	46,686	2025	80.5%
2026	7.55%	2.80%	2028	14.07%	20.47%	34.54%	38.29%	47,222	2026	82.1%
2027	7.55%	2.80%	2029	14.01%	19.89%	33.90%	37.54%	47,725	2027	83.7%
2028	7.55%	2.80%	2030	13.95%	19.27%	33.22%	36.75%	48,190	2028	85.2%
2029	7.55%	2.80%	2031	13.90%	18.60%	32.50%	35.92%	48,581	2029	86.8%
2030	7.55%	2.80%	2032	13.85%	17.85%	31.70%	35.02%	48,884	2030	88.4%
2031	7.55%	2.80%	2033	13.81%	17.02%	30.83%	34.04%	49,070	2031	90.1%
2032	7.55%	2.80%	2034	13.77%	16.08%	29.85%	32.96%	49,033	2032	91.7%
2033	7.55%	2.80%	2035	13.74%	14.95%	28.69%	31.70%	48,691	2033	93.4%
2034	7.55%	2.80%	2036	13.71%	13.55%	27.26%	30.18%	47,888	2034	95.0%
2035	7.55%	2.80%	2037	13.68%	11.68%	25.36%	28.18%	46,206	2035	96.7%
2036	7.55%	2.80%	2038	13.65%	8.72%	22.37%	25.10%	42,548	2036	98.3%
2037	7.55%	2.80%	2039	13.63%	1.94%	15.57%	18.21%	31,943	2037	99.8%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Impact of change in funding policy methodology first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. 25-year closed period begins in the 2013 valuation and phase out of corridor first occurs in the 2013 valuation using 72% of the prior year budgeted rate and 28% of the current year actuarial rate. The four year phase-in of the 7.55% interest rate is first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. The wage and price inflation assumption changes are first reflected in the June 30, 2013 valuation. The assumed actual interest rate credited to the assets is 7.55% beginning in the June 30, 2013 valuation.

MSRPS
Exhibit 5B Summary
Projected Results Under Alternate Economic Assumptions and Funding Policy: 25 Year Closed Amortization and 10 Year Corridor Phase Out Beginning June 30, 2013

	Sum of FY13-FY17 Contributions ($000)	Sum of FY13-FY22 Contributions ($000)	Year Funded Ratio Reaches 80%	Year Funded Ratio Reaches 100%
Combined State Systems	$9,407,958	$21,373,229	2025	2038
Teachers' Combined System	5,901,123	13,268,876	2023	2038
Employees' Combined System (State)	2,865,647	6,740,453	2028	2038
State Police	325,643	727,983	2029	2038
Judges	101,255	207,456	2013	2038
LEOPS (State)	214,290	428,461	2025	2038

Projected Results Under Alternate Funding Policy: 25 Year Closed Amortization and 10 Year Corridor Phase Out Beginning June 30, 2013

MSRPS - Combined State Systems

			Contribution Rate[1]						Projected Funded Ratios by Valuation Date	
Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Fiscal Year	Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	7.33%	13.47%	15.67%	14.47%	$1,442,316	2010	63.4%
2011	7.75%	3.00%	2013	4.79%	9.07%	13.86%	15.80%	1,548,983	2011	63.9%
2012	7.75%	3.00%	2014	5.88%	9.55%	15.44%	18.54%	1,791,983	2012	63.5%
2013	7.75%	3.00%	2015	5.71%	10.71%	16.42%	19.44%	1,935,328	2013	63.9%
2014	7.75%	3.00%	2016	5.56%	11.62%	17.18%	20.10%	2,064,858	2014	65.9%
2015	7.75%	3.00%	2017	5.41%	12.25%	17.65%	20.48%	2,172,524	2015	67.4%
2016	7.75%	3.00%	2018	5.25%	12.78%	18.03%	20.77%	2,276,076	2016	67.9%
2017	7.75%	3.00%	2019	5.12%	12.97%	18.09%	20.74%	2,347,291	2017	69.3%
2018	7.75%	3.00%	2020	4.99%	12.92%	17.91%	20.47%	2,394,586	2018	70.8%
2019	7.75%	3.00%	2021	4.86%	12.73%	17.58%	20.06%	2,426,607	2019	72.3%
2020	7.75%	3.00%	2022	4.74%	12.47%	17.21%	19.61%	2,452,747	2020	73.8%
2021	7.75%	3.00%	2023	4.62%	12.20%	16.82%	19.14%	2,477,277	2021	75.3%
2022	7.75%	3.00%	2024	4.51%	11.93%	16.44%	18.68%	2,502,179	2022	76.7%
2023	7.75%	3.00%	2025	4.41%	11.68%	16.08%	18.25%	2,530,312	2023	78.2%
2024	7.75%	3.00%	2026	4.31%	11.42%	15.73%	17.82%	2,558,656	2024	79.6%
2025	7.75%	3.00%	2027	4.21%	11.17%	15.38%	17.40%	2,586,692	2025	81.1%
2026	7.75%	3.00%	2028	4.12%	10.90%	15.02%	16.97%	2,612,747	2026	82.6%
2027	7.75%	3.00%	2029	4.04%	10.62%	14.66%	16.54%	2,636,414	2027	84.0%
2028	7.75%	3.00%	2030	3.95%	10.33%	14.29%	16.10%	2,657,518	2028	85.5%
2029	7.75%	3.00%	2031	3.88%	10.02%	13.90%	15.66%	2,673,869	2029	87.0%
2030	7.75%	3.00%	2032	3.80%	9.69%	13.49%	15.19%	2,683,970	2030	88.6%
2031	7.75%	3.00%	2033	3.73%	9.31%	13.05%	14.69%	2,685,527	2031	90.1%
2032	7.75%	3.00%	2034	3.66%	8.89%	12.55%	14.14%	2,674,421	2032	91.7%
2033	7.75%	3.00%	2035	3.60%	8.39%	11.99%	13.53%	2,646,269	2033	93.3%
2034	7.75%	3.00%	2036	3.54%	7.78%	11.31%	12.80%	2,589,335	2034	94.9%
2035	7.75%	3.00%	2037	3.48%	6.94%	10.42%	11.85%	2,479,645	2035	96.5%
2036	7.75%	3.00%	2038	3.42%	5.60%	9.02%	10.41%	2,251,832	2036	98.0%
2037	7.75%	3.00%	2039	3.37%	2.48%	5.84%	7.19%	1,607,461	2037	99.6%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Impact of change in funding policy methodology first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. 25-year closed period begins in the 2013 valuation and phase out of corridor first occurs in the 2013 valuation using 70% of the prior year budgeted rate and 30% of the current year actuarial rate.

Projected Results Under Alternate Funding Policy: 25 Year Closed Amortization and 10 Year Corridor Phase Out Beginning June 30, 2013

MSRPS - Teachers' Combined System

			Contribution Rate[1]						Projected Funded Ratios by Valuation Date	
Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Fiscal Year	Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	7.23%	8.22%	15.45%	14.20%	$918,929	2010	65.4%
2011	7.75%	3.00%	2013	4.62%	8.67%	13.29%	15.30%	981,542	2011	66.3%
2012	7.75%	3.00%	2014	5.83%	8.88%	14.71%	17.94%	1,128,853	2012	65.8%
2013	7.75%	3.00%	2015	5.66%	9.89%	15.55%	18.67%	1,214,810	2013	66.1%
2014	7.75%	3.00%	2016	5.51%	10.63%	16.14%	19.16%	1,290,265	2014	68.2%
2015	7.75%	3.00%	2017	5.36%	11.08%	16.44%	19.35%	1,349,963	2015	69.8%
2016	7.75%	3.00%	2018	5.21%	11.46%	16.67%	19.48%	1,407,712	2016	70.4%
2017	7.75%	3.00%	2019	5.08%	11.54%	16.62%	19.33%	1,447,226	2017	71.8%
2018	7.75%	3.00%	2020	4.95%	11.42%	16.37%	18.99%	1,472,726	2018	73.3%
2019	7.75%	3.00%	2021	4.82%	11.18%	16.00%	18.53%	1,489,057	2019	74.8%
2020	7.75%	3.00%	2022	4.70%	10.90%	15.60%	18.04%	1,502,773	2020	76.3%
2021	7.75%	3.00%	2023	4.58%	10.62%	15.20%	17.55%	1,516,247	2021	77.7%
2022	7.75%	3.00%	2024	4.47%	10.34%	14.81%	17.08%	1,529,653	2022	79.2%
2023	7.75%	3.00%	2025	4.36%	10.09%	14.45%	16.64%	1,545,195	2023	80.6%
2024	7.75%	3.00%	2026	4.26%	9.84%	14.10%	16.21%	1,561,036	2024	82.0%
2025	7.75%	3.00%	2027	4.16%	9.59%	13.75%	15.78%	1,576,137	2025	83.4%
2026	7.75%	3.00%	2028	4.06%	9.34%	13.40%	15.36%	1,590,194	2026	84.8%
2027	7.75%	3.00%	2029	3.97%	9.07%	13.04%	14.93%	1,601,949	2027	86.2%
2028	7.75%	3.00%	2030	3.88%	8.80%	12.68%	14.51%	1,612,249	2028	87.6%
2029	7.75%	3.00%	2031	3.80%	8.50%	12.30%	14.06%	1,618,678	2029	88.9%
2030	7.75%	3.00%	2032	3.71%	8.19%	11.90%	13.60%	1,620,776	2030	90.3%
2031	7.75%	3.00%	2033	3.63%	7.84%	11.47%	13.12%	1,617,175	2031	91.7%
2032	7.75%	3.00%	2034	3.55%	7.44%	10.99%	12.58%	1,604,694	2032	93.1%
2033	7.75%	3.00%	2035	3.48%	6.97%	10.45%	11.99%	1,581,429	2033	94.5%
2034	7.75%	3.00%	2036	3.40%	6.39%	9.79%	11.28%	1,538,327	2034	95.9%
2035	7.75%	3.00%	2037	3.33%	5.59%	8.92%	10.36%	1,460,862	2035	97.2%
2036	7.75%	3.00%	2038	3.26%	4.31%	7.57%	8.96%	1,306,274	2036	98.5%
2037	7.75%	3.00%	2039	3.19%	1.31%	4.50%	5.85%	880,623	2037	99.8%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Impact of change in funding policy methodology first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. 25-year closed period begins in the 2013 valuation and phase out of corridor first occurs in the 2013 valuation using 70% of the prior year budgeted rate and 30% of the current year actuarial rate.

Projected Results Under Alternate Funding Policy: 25 Year Closed Amortization and 10 Year Corridor Phase Out Beginning June 30, 2013

MSRPS - Employees' Combined System (State)

			Contribution Rate[1]						Projected Funded Ratios by Valuation Date	
Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Fiscal Year	Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	6.47%	6.93%	13.40%	12.32%	$403,540	2010	59.7%
2011	7.75%	3.00%	2013	4.17%	8.12%	12.29%	14.05%	446,711	2011	59.4%
2012	7.75%	3.00%	2014	4.90%	9.15%	14.05%	16.84%	532,078	2012	58.9%
2013	7.75%	3.00%	2015	4.74%	10.72%	15.46%	18.18%	588,339	2013	59.1%
2014	7.75%	3.00%	2016	4.58%	12.11%	16.69%	19.34%	641,927	2014	60.9%
2015	7.75%	3.00%	2017	4.43%	13.18%	17.61%	20.20%	688,001	2015	62.3%
2016	7.75%	3.00%	2018	4.29%	14.04%	18.33%	20.85%	729,648	2016	62.7%
2017	7.75%	3.00%	2019	4.15%	14.49%	18.64%	21.09%	758,689	2017	64.1%
2018	7.75%	3.00%	2020	4.02%	14.62%	18.64%	21.02%	777,729	2018	65.5%
2019	7.75%	3.00%	2021	3.90%	14.55%	18.45%	20.76%	790,634	2019	67.0%
2020	7.75%	3.00%	2022	3.79%	14.37%	18.16%	20.41%	800,234	2020	68.6%
2021	7.75%	3.00%	2023	3.68%	14.14%	17.82%	20.00%	808,279	2021	70.1%
2022	7.75%	3.00%	2024	3.58%	13.90%	17.48%	19.59%	816,530	2022	71.6%
2023	7.75%	3.00%	2025	3.48%	13.68%	17.16%	19.21%	825,909	2023	73.1%
2024	7.75%	3.00%	2026	3.39%	13.44%	16.83%	18.81%	835,141	2024	74.6%
2025	7.75%	3.00%	2027	3.31%	13.19%	16.50%	18.42%	844,555	2025	76.1%
2026	7.75%	3.00%	2028	3.24%	12.91%	16.15%	18.01%	853,034	2026	77.7%
2027	7.75%	3.00%	2029	3.17%	12.63%	15.80%	17.60%	861,511	2027	79.3%
2028	7.75%	3.00%	2030	3.10%	12.33%	15.43%	17.17%	868,806	2028	80.9%
2029	7.75%	3.00%	2031	3.04%	12.01%	15.05%	16.73%	875,281	2029	82.7%
2030	7.75%	3.00%	2032	2.99%	11.65%	14.64%	16.27%	879,865	2030	84.5%
2031	7.75%	3.00%	2033	2.94%	11.25%	14.19%	15.76%	881,757	2031	86.4%
2032	7.75%	3.00%	2034	2.89%	10.80%	13.69%	15.21%	880,125	2032	88.3%
2033	7.75%	3.00%	2035	2.85%	10.26%	13.11%	14.58%	872,776	2033	90.4%
2034	7.75%	3.00%	2036	2.81%	9.61%	12.42%	13.84%	857,309	2034	92.5%
2035	7.75%	3.00%	2037	2.78%	8.72%	11.50%	12.87%	825,126	2035	94.7%
2036	7.75%	3.00%	2038	2.75%	7.32%	10.07%	11.40%	755,959	2036	96.9%
2037	7.75%	3.00%	2039	2.72%	4.10%	6.82%	8.10%	556,172	2037	99.1%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Impact of change in funding policy methodology first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. 25-year closed period begins in the 2013 valuation and phase out of corridor first occurs in the 2013 valuation using 70% of the prior year budgeted rate and 30% of the current year actuarial rate.

Projected Results Under Alternate Funding Policy: 25 Year Closed Amortization and 10 Year Corridor Phase Out Beginning June 30, 2013

MSRPS - State Police

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Contribution Rate[1] Fiscal Year	Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Projected Funded Ratios by Valuation Date: Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	25.48%	35.53%	61.01%	59.06%	$50,807	2010	63.0%
2011	7.75%	3.00%	2013	20.44%	40.77%	61.21%	64.57%	51,365	2011	62.0%
2012	7.75%	3.00%	2014	25.40%	41.31%	66.71%	71.85%	58,772	2012	62.1%
2013	7.75%	3.00%	2015	25.12%	57.45%	82.57%	87.65%	72,480	2013	62.0%
2014	7.75%	3.00%	2016	24.75%	57.80%	82.55%	87.54%	73,637	2014	63.1%
2015	7.75%	3.00%	2017	24.38%	57.92%	82.30%	87.20%	74,813	2015	64.2%
2016	7.75%	3.00%	2018	23.97%	59.83%	83.80%	88.62%	77,226	2016	64.4%
2017	7.75%	3.00%	2019	23.58%	60.33%	83.91%	88.64%	78,694	2017	65.4%
2018	7.75%	3.00%	2020	23.22%	60.55%	83.77%	88.40%	80,199	2018	66.4%
2019	7.75%	3.00%	2021	22.88%	60.69%	83.57%	88.10%	81,774	2019	67.4%
2020	7.75%	3.00%	2022	22.55%	60.76%	83.31%	87.73%	83,403	2020	68.5%
2021	7.75%	3.00%	2023	22.26%	60.58%	82.84%	87.14%	85,181	2021	69.6%
2022	7.75%	3.00%	2024	21.97%	60.44%	82.41%	86.59%	86,996	2022	70.7%
2023	7.75%	3.00%	2025	21.71%	60.20%	81.91%	85.97%	88,882	2023	71.9%
2024	7.75%	3.00%	2026	21.46%	59.93%	81.39%	85.34%	90,819	2024	73.1%
2025	7.75%	3.00%	2027	21.25%	59.43%	80.68%	84.50%	92,899	2025	74.4%
2026	7.75%	3.00%	2028	21.06%	58.92%	79.98%	83.68%	95,019	2026	75.8%
2027	7.75%	3.00%	2029	20.87%	58.44%	79.31%	82.90%	97,122	2027	77.2%
2028	7.75%	3.00%	2030	20.68%	57.94%	78.62%	82.10%	99,209	2028	78.7%
2029	7.75%	3.00%	2031	20.52%	57.33%	77.85%	81.22%	101,326	2029	80.4%
2030	7.75%	3.00%	2032	20.38%	56.55%	76.93%	80.19%	103,478	2030	82.1%
2031	7.75%	3.00%	2033	20.26%	55.64%	75.90%	79.04%	105,624	2031	84.0%
2032	7.75%	3.00%	2034	20.16%	54.55%	74.71%	77.74%	107,724	2032	86.0%
2033	7.75%	3.00%	2035	20.07%	53.36%	73.43%	76.36%	109,590	2033	88.1%
2034	7.75%	3.00%	2036	20.00%	51.79%	71.79%	74.61%	111,166	2034	90.3%
2035	7.75%	3.00%	2037	19.94%	49.72%	69.66%	72.37%	112,095	2035	92.7%
2036	7.75%	3.00%	2038	19.90%	46.62%	66.52%	69.13%	111,358	2036	95.2%
2037	7.75%	3.00%	2039	19.87%	39.98%	59.85%	62.36%	104,191	2037	97.9%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Impact of change in funding policy methodology first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. 25-year closed period begins in the 2013 valuation and phase out of corridor first occurs in the 2013 valuation using 70% of the prior year budgeted rate and 30% of the current year actuarial rate.

Projected Results Under Alternate Funding Policy: 25 Year Closed Amortization and 10 Year Corridor Phase Out Beginning June 30, 2013

MSRPS - Judges

			Contribution Rate[1]						Projected Funded Ratios by Valuation Date	
Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Fiscal Year	Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	31.79%	28.58%	60.37%	60.37%	$25,403	2010	64.9%
2011	7.75%	3.00%	2013	32.31%	28.87%	61.18%	61.18%	25,002	2011	67.8%
2012	7.75%	3.00%	2014	29.91%	21.01%	50.92%	50.92%	21,423	2012	78.4%
2013	7.75%	3.00%	2015	29.79%	13.46%	43.25%	43.25%	18,821	2013	80.2%
2014	7.75%	3.00%	2016	29.66%	12.22%	41.88%	41.88%	18,824	2014	82.6%
2015	7.75%	3.00%	2017	29.70%	11.82%	41.52%	41.52%	19,283	2015	83.8%
2016	7.75%	3.00%	2018	29.49%	12.38%	41.87%	41.87%	20,092	2016	83.7%
2017	7.75%	3.00%	2019	29.41%	12.32%	41.73%	41.73%	20,698	2017	84.4%
2018	7.75%	3.00%	2020	29.54%	12.20%	41.74%	41.74%	21,401	2018	85.1%
2019	7.75%	3.00%	2021	29.47%	12.10%	41.57%	41.57%	22,046	2019	85.8%
2020	7.75%	3.00%	2022	29.36%	11.98%	41.34%	41.34%	22,665	2020	86.5%
2021	7.75%	3.00%	2023	29.22%	11.86%	41.08%	41.08%	23,287	2021	87.2%
2022	7.75%	3.00%	2024	29.42%	11.73%	41.15%	41.15%	24,110	2022	87.8%
2023	7.75%	3.00%	2025	29.32%	11.63%	40.95%	40.95%	24,822	2023	88.5%
2024	7.75%	3.00%	2026	29.21%	11.49%	40.70%	40.70%	25,520	2024	89.2%
2025	7.75%	3.00%	2027	29.25%	11.34%	40.59%	40.59%	26,331	2025	89.9%
2026	7.75%	3.00%	2028	29.21%	11.20%	40.41%	40.41%	27,130	2026	90.6%
2027	7.75%	3.00%	2029	29.12%	11.03%	40.15%	40.15%	27,882	2027	91.4%
2028	7.75%	3.00%	2030	29.18%	10.83%	40.01%	40.01%	28,750	2028	92.1%
2029	7.75%	3.00%	2031	29.19%	10.65%	39.84%	39.84%	29,614	2029	92.9%
2030	7.75%	3.00%	2032	29.20%	10.44%	39.64%	39.64%	30,490	2030	93.7%
2031	7.75%	3.00%	2033	29.18%	10.19%	39.37%	39.37%	31,340	2031	94.5%
2032	7.75%	3.00%	2034	29.22%	9.88%	39.10%	39.10%	32,207	2032	95.3%
2033	7.75%	3.00%	2035	29.22%	9.54%	38.76%	38.76%	33,048	2033	96.1%
2034	7.75%	3.00%	2036	29.23%	9.10%	38.33%	38.33%	33,820	2034	97.0%
2035	7.75%	3.00%	2037	29.25%	8.49%	37.74%	37.74%	34,462	2035	97.8%
2036	7.75%	3.00%	2038	29.28%	7.48%	36.76%	36.76%	34,744	2036	98.7%
2037	7.75%	3.00%	2039	29.27%	5.09%	34.36%	34.36%	33,617	2037	99.5%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Impact of change in funding policy methodology first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. 25-year closed period begins in the 2013 valuation and phase out of corridor first occurs in the 2013 valuation using 70% of the prior year budgeted rate and 30% of the current year actuarial rate.

Projected Results Under Alternate Funding Policy: 25 Year Closed Amortization and 10 Year Corridor Phase Out Beginning June 30, 2013

MSRPS - LEOPS (State)

			Contribution Rate[1]						Projected Funded Ratios by Valuation Date	
Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Fiscal Year	Normal Cost	UAAL	Total	Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment ($ in thousands)[1]	Valuation Date	Funded Ratio
2010	7.75%	3.00%	2012	17.30%	31.96%	49.26%	47.25%	$43,637	2010	51.4%
2011	7.75%	3.00%	2013	12.35%	34.46%	46.81%	50.14%	44,363	2011	53.8%
2012	7.75%	3.00%	2014	15.39%	37.08%	52.47%	57.72%	50,857	2012	55.0%
2013	7.75%	3.00%	2015	15.27%	25.31%	40.58%	45.76%	40,878	2013	58.6%
2014	7.75%	3.00%	2016	15.08%	23.98%	39.06%	44.14%	40,205	2014	62.7%
2015	7.75%	3.00%	2017	14.90%	23.56%	38.46%	43.43%	40,463	2015	65.0%
2016	7.75%	3.00%	2018	14.74%	23.80%	38.54%	43.39%	41,398	2016	66.3%
2017	7.75%	3.00%	2019	14.59%	23.56%	38.15%	42.88%	41,984	2017	68.0%
2018	7.75%	3.00%	2020	14.46%	23.27%	37.73%	42.34%	42,531	2018	69.8%
2019	7.75%	3.00%	2021	14.32%	22.98%	37.30%	41.79%	43,095	2019	71.4%
2020	7.75%	3.00%	2022	14.20%	22.65%	36.85%	41.22%	43,672	2020	73.1%
2021	7.75%	3.00%	2023	14.10%	22.27%	36.37%	40.62%	44,283	2021	74.7%
2022	7.75%	3.00%	2024	14.00%	21.88%	35.88%	40.01%	44,889	2022	76.2%
2023	7.75%	3.00%	2025	13.91%	21.45%	35.36%	39.36%	45,505	2023	77.8%
2024	7.75%	3.00%	2026	13.82%	21.00%	34.82%	38.70%	46,139	2024	79.3%
2025	7.75%	3.00%	2027	13.74%	20.51%	34.25%	38.01%	46,770	2025	80.8%
2026	7.75%	3.00%	2028	13.67%	19.97%	33.64%	37.28%	47,369	2026	82.3%
2027	7.75%	3.00%	2029	13.60%	19.41%	33.01%	36.54%	47,949	2027	83.9%
2028	7.75%	3.00%	2030	13.54%	18.81%	32.35%	35.76%	48,504	2028	85.4%
2029	7.75%	3.00%	2031	13.48%	18.16%	31.64%	34.94%	48,971	2029	87.0%
2030	7.75%	3.00%	2032	13.43%	17.43%	30.86%	34.05%	49,362	2030	88.6%
2031	7.75%	3.00%	2033	13.39%	16.62%	30.01%	33.10%	49,631	2031	90.2%
2032	7.75%	3.00%	2034	13.35%	15.70%	29.05%	32.04%	49,671	2032	91.8%
2033	7.75%	3.00%	2035	13.31%	14.62%	27.93%	30.82%	49,426	2033	93.4%
2034	7.75%	3.00%	2036	13.28%	13.27%	26.55%	29.34%	48,714	2034	95.1%
2035	7.75%	3.00%	2037	13.25%	11.46%	24.71%	27.40%	47,100	2035	96.7%
2036	7.75%	3.00%	2038	13.23%	8.60%	21.83%	24.43%	43,498	2036	98.3%
2037	7.75%	3.00%	2039	13.20%	2.09%	15.29%	17.80%	32,858	2037	99.8%

Projections are based on the valuation results as of June 30, 2012.

[1] *Reinvested savings allocated among the State systems based on their proportionate share of the total savings measured as of June 30, 2011, as follows: TCS - 67.70%, ECS (State) - 29.36%, State Police - 1.40%, LEOPS (State) - 1.54%.*

* *Wage inflation assumption is 50 basis points greater than price inflation assumption.*

Impact of change in funding policy methodology first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. 25-year closed period begins in the 2013 valuation and phase out of corridor first occurs in the 2013 valuation using 70% of the prior year budgeted rate and 30% of the current year actuarial rate.

MSRPS
Exhibit 3B Summary
Projected Results Under Alternate Funding Policy: 25 Year Closed Amortization and 10 Year Corridor Phase Out Beginning June 30, 2013

	Sum of FY13-FY17 Contributions ($000)	Sum of FY13-FY22 Contributions ($000)	Year Funded Ratio Reaches 80%	Year Funded Ratio Reaches 100%
Combined State Systems	$9,513,675	$21,410,984	2025	2038
Teachers' Combined System	5,965,435	13,284,929	2023	2038
Employees' Combined System (State)	2,897,056	6,753,990	2028	2038
State Police	331,068	732,364	2029	2038
Judges	103,352	210,255	2013	2038
LEOPS (State)	216,766	429,446	2025	2038