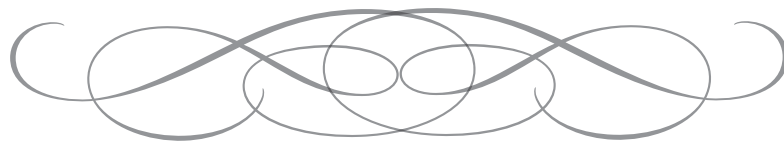


Joint Committee on Pensions



2012 INTERIM REPORT



Annapolis, Maryland
January 2013

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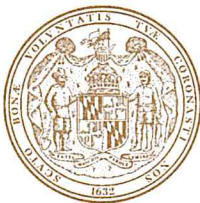
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MARYLAND GENERAL ASSEMBLY
JOINT COMMITTEE ON PENSIONS

December 21, 2012

The Honorable Thomas V. Mike Miller, Jr., Co-Chairman
The Honorable Michael E. Busch, Co-Chairman
Members of the Legislative Policy Committee

Ladies and Gentlemen:

The Joint Committee on Pensions herewith submits a report of its 2012 interim activities and legislative recommendations. The joint committee met three times during the 2012 interim and addressed two items and five legislative proposals requested by the Board of Trustees for the State Retirement and Pension System pertaining to retirement and pensions during these meetings. The joint committee made recommendations on these items at its final meeting for the 2012 interim.

We thank the joint committee members for their diligence and attention to the work of the committee. Also, on behalf of the committee members, we thank Phillip Anthony, Dana Tagalicod, Michael Rubenstein, and Cathy Kramer of the Department of Legislative Services and the staff of the Maryland State Retirement Agency for their assistance.

Sincerely,

Senator Verna Jones-Rodwell
Senate Chair

Delegate Melony G. Griffith
House Chair

VJR:MGG/PSA:DKT:MCR/eck

Enclosure

cc: Ms. Lynne B. Porter
Mr. Karl S. Aro
Mr. Warren G. Deschenaux

Maryland General Assembly Joint Committee on Pensions

2012 Membership Roster

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George C. Edwards

Edward J. Kasemeyer

Richard S. Madaleno, Jr.

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Adrienne A. Jones

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Committee Staff

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Dana K. Tagalicod

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Joint Committee on Pensions

2012 Interim Report

Over the course of three meetings during the 2012 interim, the Joint Committee on Pensions addressed two pension topics and five legislative proposals requested by the Board of Trustees for the State Retirement and Pension System (SRPS).

Results of 2012 Actuarial Valuation and Fiscal 2014 Contribution Rates

As shown in **Exhibit 1**, the fiscal 2014 aggregate State contribution rate is 18.54%. This rate includes the additional reinvestment payment of \$300.0 million. Pension reform enacted during the 2011 legislative session (Chapter 397) required an additional payment based on the savings generated by the 2011 reforms, capped at \$300.0 million. Most pension experts agree that an 80.0% funding level is adequate to meet future obligations, but the State was not projected to reach that level until 2026. Chapter 397 established a goal that the State should achieve 80.0% funding within 10 years, or by fiscal 2023. To accomplish that objective, it required that a portion of the savings generated by the benefit restructuring be reinvested in the pension fund to pay down the unfunded liabilities. Based on statutory requirements, the amount of reinvested savings added to the annual contribution was \$190.8 million in fiscal 2013. Beginning in fiscal 2014 and each successive year, the statute requires a reinvested savings contribution of \$300.0 million. The increase in the reinvestment, along with increases from changes to the demographic assumptions adopted by the board during the interim, represent a significant portion of the rate increase from fiscal 2013.

Exhibit 1 State Pension Contribution Rates Fiscal 2013 and 2014

<u>Plan</u>	<u>FY 2013*</u>		<u>FY 2014^</u>	
	<u>Rate</u>	<u>\$ in Millions</u>	<u>Rate</u>	<u>\$ in Millions</u>
Teachers	15.30%	\$982	17.94%	\$1,129
Employees	14.05%	447	16.84%	532
State Police	64.57%	51	71.85%	59
Judges	61.18%	25	50.92%	21
LEOPS	50.14%	44	57.72%	51
Aggregate	15.80%	\$1,549	18.54%	\$1,792

LEOPS: Law Enforcement Officers' Pension System

*Includes reinvested savings amount of \$190.8 million.

^Includes reinvested savings amount of \$300.0 million.

Note: Contribution rates reflect State funds only, excluding municipal contributions.

Source: Gabriel, Roeder, Smith & Co.

The dollar contributions for fiscal 2013 and 2014 shown in Exhibit 1 reflect both the base contributions generated by the contribution rates and the additional reinvested savings. Total fiscal 2014 State contributions increase by \$243.0 million over fiscal 2013 contributions. The State's contributions are currently projected to bring the system to 80% funding by 2023. The system's actuarial liability for State members is approximately \$53.7 billion and the actuarial value of State assets was \$34.1 billion, leaving an unfunded liability of \$19.6 billion, or a 64.4% actuarial funding ratio.

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. 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.

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. 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. The TUCS's rankings are based on returns gross of fees.

Performance of active managers within the SRPS portfolio has been inconsistent. Over the past three years, domestic equity active managers 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.

The Department of Legislative Services (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 the 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. The State Retirement Agency (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.

Optional Retirement Program – Retiree Health Benefits

In 1975, the State established the Optional Retirement Program (ORP), which is a defined contribution program for certain eligible employees of public higher education institutions. Eligible employees are:

- members of the faculty of the University System of Maryland, Morgan State University, St. Mary's College of Maryland, or a community college;
- certain professional employees of the Maryland Higher Education Commission, community colleges, Morgan State University, and St. Mary's College of Maryland; and
- nonclassified employees of the University System of Maryland.

Eligible public higher education employees must elect to participate in either (1) the ORP; or (2) the Teachers' Pension System (TPS); or (3) the Employees' Pension System (EPS). Federal tax law requires the choice to join the ORP to be a one-time, irrevocable decision that must be made within one year of becoming eligible to join the ORP.

Because of differences between retiree health benefits for certain State employees compared to ORP employees, the 2012 *Joint Chairmen's Report* requested the joint committee to examine the retiree health benefits of the ORP compared to employees in the State pension plans. The joint committee was briefed on the legislative history of ORP retiree health benefits, comparisons between TPS/EPS and ORP retiree health benefits, and additional comparisons between the TPS/EPS and the ORP.

Legislative History of ORP Retiree Health Benefits

When the ORP was first established in 1975 by Chapter 556, the legislation did not include any provisions regarding retiree health benefits for ORP members. Therefore, ORP members were not initially eligible for retiree health benefits.

In 1984, Chapter 290 established eligibility for ORP employees, spouses, and children to receive retiree health benefits. Future ORP retirees were authorized to participate in the State's health insurance program and they became eligible to receive a State health insurance subsidy. ORP retirees were eligible to receive (1) a prorated health insurance subsidy if the retiree had at least 5 years of service, but less than 16 years of service; or (2) the maximum health insurance subsidy if the retiree had at least 16 years of service. The spouses and children of ORP retirees were also authorized to participate in the State's health insurance program. However, they were not eligible for a State subsidy, so ORP dependents had to pay the full cost if they wanted to participate in the State's retiree health insurance program.

In 1993, Chapter 479 provided a State retiree health insurance subsidy for ORP spouses and children. If the ORP retiree had at least 25 years of service, the retiree's spouse and children were eligible to receive the maximum State retiree health insurance subsidy; however, the retiree's spouse and children were not eligible for a prorated subsidy.

Comparison Between TPS/EPS and ORP Retiree Health Benefits

Eligibility Criteria for Maximum State Retiree Health Subsidy for Retiree Only

In both the TPS/EPS and the ORP, employees hired prior to July 1, 2011, are eligible to receive the maximum State retiree health insurance subsidy with at least 16 years of State service. However, in the ORP, the employee must have made contributions to a Maryland ORP account for at least 16 years and must retire directly from a Maryland higher education institution. Also, TPS/EPS retirees have two additional options to qualify for a maximum State health insurance subsidy: (1) retire directly from State service with a disability retirement; or (2) have retired from State service before July 1, 1984.

In both the TPS/EPS and the ORP, employees hired on or after July 1, 2011, are eligible to receive the maximum State retiree health insurance subsidy with at least 25 years of State service. Again, the ORP employee must have made contributions to a Maryland ORP account for at least 25 years and must retire directly from a Maryland higher education institution. TPS/EPS retirees have one additional option to qualify for a maximum State health insurance subsidy: retire directly from State service with a disability retirement.

Eligibility Criteria for Prorated State Retiree Health Subsidy for Retiree Only

In both the TPS/EPS and the ORP, employees hired prior to July 1, 2011, are eligible to receive a prorated State retiree health insurance subsidy with at least 5 years of service, but less than 16 years of service. TPS/EPS employees must retire directly from State service and ORP employees must retire directly from a Maryland higher education institution. In the ORP, the employee must have made contributions to a Maryland ORP account for the same number of years of service. The prorated subsidy for a retiree with 10 years of service is 10/16 of the maximum State subsidy.

In both the TPS/EPS and the ORP, employees hired on or after July 1, 2011, are eligible to receive a prorated State retiree health insurance subsidy with at least 10 years of service, but less than 25 years of service. TPS/EPS employees must retiree directly from State service and ORP employees must retire directly from a Maryland higher education institution. In the ORP, the employee must have made contributions to a Maryland ORP account for the same number of years of service. The prorated subsidy for a retiree with 15 years of service is 15/25 of the maximum State subsidy.

Eligibility Criteria for Maximum State Retiree Health Subsidy for Dependents

In the TPS/EPS, dependents receive the maximum State health insurance subsidy if the retiree meets the requirements for the maximum State subsidy, which is 16 years of service or 25 years of service, depending on the date of hire.

In the ORP, dependents receive the maximum State health insurance subsidy only if the retiree has 25 years of service, regardless of date of hire.

Eligibility Criteria for Pro-rated State Retiree Health Subsidy for Dependents

In the TPS/EPS, dependents receive a prorated State health insurance subsidy if the retiree meets the requirements for a prorated State subsidy, which is at least 5 years of service, but less than 16 years of service; or at least 10 years of service, but less than 25 years of service, depending on the date of hire.

There is no prorated State health insurance subsidy for dependents of ORP retirees.

Additional Comparisons Between the TPS/EPS and the ORP

In addition to the retiree health benefit differences, there are several other differences between the TPS/EPS and the ORP. The TPS/EPS is a defined benefit plan with a fiscal 2013 State contribution rate of 13.29% for the teachers' systems, 12.29% for the employees' systems, and a mandatory employee contribution of 7.0% of salary. In contrast, the ORP is a defined contribution plan with a State contribution rate of 7.25% and employees are prohibited from contributing to the ORP account. Other differences include a vesting requirement for the TPS/EPS while ORP employees have greater portability with their ORP account balances.

While the joint committee recognizes that there are differences in eligibility for the maximum and prorated State retiree health insurance subsidy for TPS/EPS dependents compared to ORP dependents, more information is needed before the joint committee can make a recommendation on this issue. Therefore, the joint committee requests that the institutions of higher education that have employees in the ORP work together with the Department of Budget and Management to gather additional data on ORP employees and retirees and their dependents.

Pension System Funding Study

During the 2011 interim, the Board of Trustees for the SRPS made a proposal to the joint committee to change the amortization of unfunded pension liabilities and to phase out the corridor funding method. The 2012 *Joint Chairmen's Report* required DLS and SRA to examine the funding method, amortization of unfunded liabilities, and the actuarial assumptions of the SRPS, and to develop a plan to phase out the corridor funding methodology in light of the board's 2011 proposal and the goals of the 2011 pension reform.

Joint Study Proposal

Over the interim, DLS and SRA requested the system actuary to run projections based on the structure of the board's prior proposal and also to account for changes in the demographic assumptions adopted by the board as well as potential economic assumption changes. Under the change to the amortization, all current unfunded liabilities would be amortized over a 25-year closed period. At the end of the 25-year period, all unfunded liabilities are expected to be paid off, with the system at 100% funded status.

The corridor method would be phased out over a 10-year period. The corridor method currently requires the prior year's rate plus 20% of the difference between the prior year's rate and the actuarial rate. The first year of the 10-year phase out would use the prior year's rate, plus 28% of the difference between the prior year's rate and the actuarial rate. After 10 years, the contribution rate would be the actuarially determined rate.

The board updated the demographic assumptions over the interim, and these are incorporated into the projections run by the actuary. The board did not make any changes to the economic assumptions but did indicate that the matter would be taken up again for the 2013 valuation. In anticipation of any potential changes to the economic assumptions, the projections assumed that for the fiscal 2015 budget, the board would have lowered the inflation assumption to 2.8% to coincide with changes made by Social Security. Additionally, the projections assume that the board would lower the investment return assumption from 7.75 to 7.55% by five basis points over a four-year period. The projections also assume that any legislative changes to phase out the corridor methodology and to change the amortization would begin in fiscal 2015, to coincide with any changes to the economic assumptions.

Joint Study Findings

While the corridor method has previously resulted in reduced employer contributions, working the investment losses sustained since its inception through the corridor method will have significant impact on the employer contribution in the out-years. A change to the amortization of unfunded liabilities along with a phasing out of the corridor funding will allow the corridor method to be ended and will reduce employer contributions. The expected changes that the board of trustees will make in the following year to the economic assumptions would provide additional savings in the first few years, while also adjusting the investment return

assumption downward, consistent with actions taken by other plans across the country. The proposed changes result in substantial reductions to employer contributions, while preserving the goals of the 2011 pension reform.

The joint committee will sponsor legislation to change the amortization of unfunded liabilities to a closed 25-year period and to phase out corridor funding in the Employees' and Teachers' systems over a 10-year period which will return the system to an actuarially sound funding methodology. The legislative changes shall become effective to be used in determining contributions for the fiscal 2015 budget.

Board Requested Legislation

Forty-Five Day Break in Service – Reemployment

Each of the several systems provides, under various provisions of the State Personnel and Pensions Article, that an individual who is receiving a normal service retirement allowance may not be reemployed within 45 days of the individual's retirement if the individual is reemployed by the same employer from which the individual retired. These provisions were added to the State Personnel and Pensions Article to protect the SRPS's tax qualified status under the Internal Revenue Code (IRC) by ensuring that there has been a bona fide break in service between employment and retirement in instances when the individual has retired prior to reaching normal retirement age. In addition, these provisions were added to protect a reemployed retiree from receiving a 10% premature distribution tax in instances when a retiree begins receiving benefits prior to age 59½. Section 72(t) of the IRC provides that, in those instances, regardless of whether the individual has reached normal service retirement age, this penalty may be imposed if an individual retires prior to age 59½ and cannot show that there has been a clear separation from employment for the retiree.

Based on various cases, revenue rulings, and information letters from the Internal Revenue Service (IRS), it is unlikely that, without a significant break in service between retirement and reemployment, IRS would consider a retiree as separating from employment if there was no change in services rendered or a reduction in work schedule. In light of this interpretation of "separation from employment," tax counsel for the SRPS has advised that the more differences there are between the individual's last job before retirement and the job being performed when the person is rehired, and the longer the break between the date of retirement and date of rehire, the more likely it is that IRS will consider it a bona fide retirement. Accordingly, this will protect the SRPS's tax qualified status and the retiree from incurring a 10% premature distribution tax when there has not been a legitimate separation from employment.

Staff for SRA has encountered many situations where individuals retire from one of the several systems and without incurring any break in service, return to work within days of retirement for a different participating employer of the SRPS, performing essentially the same

duties the individual was performing prior to retirement. However, because technically these individuals are not returning to work for the same employer from which they retired, SRA may not require they assume a bona fide break in service of 45 days.

The board is requesting legislation that would amend provisions in each of the several systems addressing reemployment of retirees to impose a 45-day break in service for all retirees, including disability retirees, who are reemployed by a participating employer in the SRPS. The board indicates these changes would protect the SRPS's tax qualified status and retirees from incurring a 10% premature distribution tax.

The joint committee will sponsor the requested legislation.

Overpayments

Section 21-113(b) of the State Personnel and Pensions Article provides that the Board of Trustees of the SRPS may recover the amount of any improper payment. This provision further provides the process the board is required to follow in order to recover any overpayment. Specifically, § 21-113(b)(2)(ii) provides that "the Board of Trustees may adjust any future monthly payments of that person's allowance to recover the amount owed."

SRA recently encountered a situation where, following the death of a retiree, the agency discovered that prior to the retiree's death, the retiree had received improper payments from the SRPS in excess of what he was entitled. In accordance with § 21-113(b) and in following its past practice, SRA attempted to recover the overpayment from the benefits paid to the deceased retiree's beneficiary. However, in this instance, the designated beneficiary's attorney argued that under § 21-113(b)(2)(ii), SRA may only offset the retiree's benefit, not the beneficiary's benefit.

The board requested that § 21-113(b) be amended to allow the board to recover from the survivor benefit paid to a designated beneficiary of a deceased retiree, any improper payments made to that retiree but not discovered until after the retiree was deceased.

In addition, the board also requested that § 21-113(a) be clarified that the board is required to correct any error that results in a retiree or beneficiary receiving a benefit that differs from the benefit to which they are entitled. Presently, § 21-113(a) states that the board may only correct an error in the records of the several systems.

The joint committee decided to sponsor the requested legislation to make changes to § 21-113(a) to allow the board to make corrections to any errors that result in benefit payments that differ from the benefit to which a retiree or beneficiary is entitled. Based on the concerns about the potential impact of recovery of overpayments from beneficiaries, the joint committee decided it would not sponsor legislation to make the requested changes to § 21-113(b).

Administrative Fees – Participating Governmental Units

The 2011 pension reform included provisions that require participating governmental units to pay their prorated share of the administrative costs of SRA, based on the number of their employees who are members of the Employees' Pension System or the Employees' Retirement System. Specifically, § 21-316(e)(2) of the State Personnel and Pensions Article states that a participating governmental unit shall make its administrative fee payments to SRA on a quarterly basis. However, § 21-316(e)(6) further states that a participating governmental unit may then deduct the total amount paid in administrative fees from the total amount of the annual employer contributions made by that participating governmental unit.

Prior to the enactment of the administrative fees, operating expenses for a participating governmental unit were withdrawn from the accumulation fund of the trust. In the following fiscal year, this amount would be amortized over 25 years, and 1/25 of the amount that was used for operating expenses in the previous fiscal year would be included in the annual employer contribution for that participating governmental unit. This would serve as a long-term reimbursement to the accumulation fund for those operating expenses. Now, with SRA receiving its operating expenses directly from a participating governmental unit, the agency no longer draws these funds from the accumulation fund. Accordingly, the amount paid in administrative fees will no longer need to be amortized and included in a participating governmental unit's future annual employer contribution. Moreover, because the amortized amount of administrative fees is no longer included in future employer contributions, it would be erroneous on the part of SRA to allow the participating governmental unit to deduct the amount paid in administrative fees from its annual employer contributions.

The board is requesting legislation to repeal § 21-316(e)(6) which allows a participating governmental unit to deduct its administrative fees from its annual employer contributions. The board indicates there is no cost associated with this proposal. This legislation will prevent the underfunding of the SRPS by the amount of administrative fees that a participating governmental unit may deduct from its employer contributions.

The joint committee decided to sponsor the requested legislation, but the committee had concerns about the effects on State and local governments. The joint committee intends to review use of the administrative fee method of funding SRPS administrative costs.

Unused Sick Leave Calculation

Section 20-206 of the State Personnel and Pensions Article provides that at the time of retirement, a member may receive creditable service for unused sick leave. This section further states that a member may not earn more than 15 days of sick leave per year as an active employee with a participating employer and that if a participating employer provides more than 15 days of sick leave per year, the board shall reduce the member's accumulated sick leave by the lesser of:

- the days of sick leave used by the member in that year; or
- the number of days of sick leave provided by the participating employer for that year, less 15 days.

Participating employers that provide more than 15 days of sick leave per year are generally the local boards of education. However, because these employers only report total cumulative sick leave to SRA, SRA indicates it is not possible to perform the calculation provided under § 20-206(e)(3)(iii). Instead, SRA determines based on the total number of years of service the member has earned, what the maximum amount of service credit the member could have received at a rate of 15 days per year. Based on this number, SRA then determines that amount of creditable service to which the member is entitled.

Because it is not possible for the agency to perform the current calculation required under § 20-206(e)(3)(iii), to avoid confusion for members who are employed by participating employers who provide more than 15 days of sick leave per year, the board is requesting legislation to amend this subparagraph to clarify the calculation that SRA actually performs. The board indicates there is no cost associated with this proposal because it will codify existing agency practice.

The joint committee will sponsor the requested legislation.

Cost-of-living Adjustments

Chapter 599 of 2011 required SRA to review § 24-401 and Title 29, Subtitle 4 of the State Personnel and Pensions Article and make recommendations to the joint committee to provide accuracy and clarity to the provisions governing cost-of-living adjustments (COLA) for retirees of the several systems. During the 2011 interim, SRA submitted draft legislation to the joint committee that was introduced during the 2012 session (House Bill 808/Senate Bill 879). However, while the bills were being considered before the legislature, SRA and DLS determined that Title 29 would be better served if a more comprehensive revision was undertaken. After discussions with both the subcommittee chairs of the Senate Pensions Subcommittee and House Oversight Committee on Pensions, they agreed to hold the bills with the expectation that a more extensive revision of § 24-401 and Title 29, Subtitle 4 of the State Personnel and Pensions Article would be presented to the joint committee during the 2012 interim.

The board is requesting legislation to amend § 24-401 and Title 29, Subtitle 4 to reflect SRA practice and computer programming used by the agency to calculate COLAs each year. This proposed legislation would not make any substantive changes to the COLA calculations for any of the several systems. The board indicates there is no cost associated with this request.

The joint committee will sponsor the requested legislation.



Maryland State Retirement and Pension System

Annual Results of the Fiscal 2012
Actuarial Valuation and
Fiscal 2014 Contribution Rates

November 14, 2012 Meeting of the
Joint Committee on Pensions

Appendix 1



Table of Contents

- ◆ 2012 Actuarial Valuation
- ◆ GASB Changes



Purpose of the Actuarial Valuation

- ◆ Measure the financial position of SRPS
- ◆ Assist the Board in establishing State and PGU contribution rates:
 - ▶ Allocate investment income among pools within Systems
 - ▶ Work closely with SRA staff exchanging and reconciling information
 - ▶ Determine amortization bases and payments
- ◆ Determine actuarial and statutory contribution rates with reinvested savings for FY 2014
- ◆ Provide disclosure information for financial reporting
- ◆ Analyze aggregate experience over the last year



2011 General Assembly Reforms

- ◆ Current members of Teacher's Retirement and most current members of Employees Retirement are not affected
- ◆ Current Members in the TPS, EPS, CORS, SPRS, and LEOPS are affected as follows:
 - ▶ Future service COLA capped at 2.5% or 1% if 7.75% investment return target is not met
 - ▶ TPS employee rate increased from 5% to 7%
 - ▶ EPS employee rate increased from 5% to 7%
 - ▶ LEOPS employee rate increased from 4% to 6% to 7%



2011 General Assembly Reforms

◆ New Hires under ACPS

- ▶ Benefit accrual rate decreased from 1.8% to 1.5%
- ▶ Future service COLA capped at 2.5% or 1% if 7.75% investment return target is not met
- ▶ Final average compensation period increased from 3 to 5 years
- ▶ Vesting period increased from 5 to 10 years
- ▶ Normal retirement eligibility at age 65 with 10 years of service or Rule of 90



Effect on Funding

◆ Maintenance of Effort

- ▶ Savings from reforms are reinvested in the State Retirement and Pension System
- ▶ \$120M is deducted from reform savings reinvestment in FY 2012 and FY 2013
- ▶ Reinvested savings capped at \$300M per year thereafter



Variables Affecting Valuation Results

- ◆ New assumptions and methods for valuation as of June 30, 2012
 - ▶ Demographic actuarial assumptions based on the 2006-2010 experience study
- ◆ Assumptions and methods continued from prior valuation
 - ▶ Economic Assumptions
 - Investment return assumption of 7.75% and price inflation assumption of 3.0%
 - ▶ Asset valuation method (using 20% market value collar, 5-year smoothing)
 - ▶ Amortization policy (individual G/L bases for each year amortized over 25-year closed period)
 - ▶ Corridor funding method for Teachers and Employees-State



Primary Assumptions & Methods

The valuation results are developed using:

- ▶ 7.75% investment return; 3.5% payroll growth
- ▶ Entry Age Normal Actuarial Cost Method
- ▶ 2.75% COLA for service where COLA is capped at 3%
- ▶ 2.95% COLA for service where COLA is capped at 5%
- ▶ 3.00% COLA for service where COLA is not capped
- ▶ 1.70% COLA for service earned after July 1, 2011 where the COLA is capped at 2.5% in years when the System earns at least 7.75% or capped at 1% in years when the System earns less than 7.75%



Demographic Data

	Statistics as of June 30				% Chg
	2012			2011	
	State	PGU	Total	Total	
Number Counts					
Active Members	167,512	25,482	192,994	195,059	-1.1%
Vested Former Members	44,625	6,605	51,230	50,911	0.6%
Retired Members	117,567	14,926	132,493	127,171	4.2%
Total Members	329,704	47,013	376,717	373,141	1.0%
Total Valuation Payroll (\$ in Millions)	\$9,283.1	\$1,053.4	\$10,336.5	\$10,478.8	-1.4%
Active Member Averages					
Age	46.0	48.8	46.4	46.3	0.1%
Service	12.8	11.8	12.7	12.6	0.6%
Pay	\$ 55,418	\$ 41,340	\$ 53,559	\$ 53,721	-0.3%
Total Retiree Benefits (\$ in Millions)	\$2,626.6	\$ 185.9	\$ 2,812.5	\$ 2,606.7	7.9%
Average Retiree Benefit	\$ 22,341	\$ 12,454	\$ 21,227	\$ 20,497	3.6%



State Demographic Data by System

	TCS	ECS	State Police	Judges	LEOPS	Total
Active Members						
2012 Count	103,694	60,719	1,332	294	1,473	167,512
2011 Count	105,528	60,834	1,295	286	1,483	169,426
2010 Count	106,273	62,355	1,354	294	1,535	171,811
% Change 2012/2011	-1.7%	-0.2%	2.9%	2.8%	-0.7%	-1.1%
2012 Payroll (\$Mill)	\$6,080.6	\$3,001.2	\$77.7	\$40.0	\$83.7	\$9,283.1
2011 Payroll (\$Mill)	\$6,196.9	\$3,019.2	\$75.6	\$38.8	\$84.0	\$9,414.5
2010 Payroll (\$Mill)	\$6,254.6	\$3,109.7	\$81.7	\$40.0	\$87.7	\$9,573.8
% Change 2012/2011	-1.9%	-0.6%	2.8%	3.0%	-0.4%	-1.4%
2012 Average Pay	\$ 58,640	\$ 49,428	\$ 58,326	\$ 135,903	\$ 56,803	\$ 55,418
2011 Average Pay	\$ 58,723	\$ 49,630	\$ 58,378	\$ 135,664	\$ 56,642	\$ 55,567
2010 Average Pay	\$ 58,855	\$ 49,871	\$ 60,344	\$ 135,921	\$ 57,137	\$ 55,723
% Change 2012/2011	-0.1%	-0.4%	-0.1%	0.2%	0.3%	-0.3%



State Demographic Data by System

	TCS	ECS	State Police	Judges	LEOPS	Total
Retired Members						
2012 Count	63,699	49,955	2,387	365	1,161	117,567
2011 Count	60,565	48,508	2,371	358	1,094	112,896
2010 Count	57,539	45,584	2,282	351	1,020	106,776
% Change 2012/2011	5.2%	3.0%	0.7%	2.0%	6.1%	4.1%
Vested Former Members						
2012 Count	23,033	21,335	85	10	162	44,625
2011 Count	22,617	21,482	91	11	158	44,359
2010 Count	23,017	21,904	77	6	150	45,154
% Change 2012/2011	1.8%	-0.7%	-6.6%	-9.1%	2.5%	0.6%



Year to Year Comparison of Results

(STATE ONLY except Total Funded Ratios, \$ in Millions)

	Teachers' Combined System *	Employees' Combined System *	State Police	Judges	LEOPS	Total
FY 2014 Contribution Rate	14.71%	14.05%	66.71%	50.92%	52.47%	15.43%
FY 2014 Contr. Rate (w. Reinv. Savings)	17.94%	16.84%	71.85%	50.92%	57.72%	18.54%
FY 2013 Contribution Rate	13.29%	12.29%	61.21%	61.18%	46.81%	13.85%
FY 2013 Contr. Rate (w. Reinv. Savings)	15.30%	14.05%	64.57%	61.18%	50.14%	15.80%
2012 Actuarial Value of Assets	\$ 22,524	\$ 9,665	\$ 1,135	\$ 330	\$ 436	\$ 34,089
2012 Unfunded Actuarial Liability	\$ 11,729	\$ 6,749	\$ 692	\$ 91	\$ 357	\$ 19,618
2011 Unfunded Actuarial Liability	\$ 11,116	\$ 6,501	\$ 669	\$ 139	\$ 345	\$ 18,771
Funded Ratios						
2012 (Total includes Municipal)	65.8%	58.9%	62.1%	78.4%	55.0%	64.4%
2011 (Total includes Municipal)	66.3%	59.4%	62.0%	67.8%	53.7%	64.7%

* Includes effect of corridor.

Municipal Actuarial Value of Assets of \$3,159 Million and Municipal Unfunded Actuarial Liability of \$1,003 Million are also included in the development of the Total Funded Ratio of 64.4%. State only 2012 Funded Ratio is 63.5%.

GRS



Reconciliation of Employer Contribution Rates

	Teachers' Combined System	Employees' Combined System	State Police	Judges	LEOPS	Total
Actuarially Determined Calculations						
FY2013 Contribution Rate	17.76%	19.32%	61.21%	61.18%	46.81%	19.05%
Change due to Investment Return	0.74%	0.71%	3.36%	1.61%	0.94%	0.81%
Change due to Demographic Experience#	0.42%	0.38%	1.65%	-3.93%	2.21%	0.33%
Change due to Corridor	0.32%	0.46%	0.00%	0.00%	0.00%	0.36%
Change due to Legislation	0.00%	0.00%	0.00%	-1.59%	0.00%	0.00%
Change due to Settlement Assets	0.00%	0.00%	-4.14%	-3.54%	-0.29%	-0.05%
Change Due to Assumption Changes	<u>1.13%</u>	<u>0.23%</u>	<u>4.63%</u>	<u>-2.81%</u>	<u>2.80%</u>	<u>0.92%</u>
FY2014 Contribution Rate	20.37%	21.10%	66.71%	50.92%	52.47%	21.42%
Application of Corridor Method (Before Reinvested Savings)						
FY2013 Corridor Contribution Rate	13.29%	12.29%				13.85%
20% of Difference between FY2014 Actuarial Rate and FY2013 Corridor Rate	<u>1.42%</u>	<u>1.76%</u>				
FY2014 Budgeted Contribution Rate	14.71%	14.05%	66.71%	50.92%	52.47%	15.43%
Reinvested Savings Rate	<u>3.23%</u>	<u>2.79%</u>	<u>5.14%</u>	<u>0.00%</u>	<u>5.25%</u>	<u>3.11%</u>
Final FY2014 Total Budgeted Contr. Rate	17.94%	16.84%	71.85%	50.92%	57.72%	18.54%
Effect of Corridor	-5.66%	-7.05%				-5.99%

Sources of change described on slides 17 and 18.



Calculation of Contribution Rate Attributable to Reinvestment Amounts

(STATE ONLY, \$ in Millions)

	Teachers' Combined System	Employees' Combined System	State Police	Judges	LEOPS	Total
% of Total Pension Reform Savings#	67.7%	29.4%	1.4%	0.0%	1.5%	100.0%
Reinvested Savings	\$203.1	\$88.1	\$4.2	\$0.0	\$4.6	\$300.0
FY 2014 Contributions						
Illustrated Dollar Contributions	\$ 925.8	\$ 444.0	\$ 54.6	\$ 21.4	\$ 46.2	\$ 1,492.0
Reinvested Savings	<u>203.1</u>	<u>88.1</u>	<u>4.2</u>	<u>-</u>	<u>4.6</u>	<u>300.0</u>
Total Illustrated Contributions	1,128.9	532.1	58.8	21.4	50.8	1,792.0
FY 2013 Illustrated Contributions'	\$ 982.0	\$ 447.0	\$ 51.0	\$ 25.0	\$ 44.0	\$ 1,549.0
Employer Contribution Rate	14.71%	14.05%	66.71%	50.92%	52.47%	15.43%
Reinvested Savings Rate^	<u>3.23%</u>	<u>2.79%</u>	<u>5.14%</u>	<u>0.00%</u>	<u>5.25%</u>	<u>3.11%</u>
Total Contribution Rate	17.94%	16.84%	71.85%	50.92%	57.72%	18.54%

Based on Calculations from June 30, 2011 Valuation.

^ Rate calculated based on allocated reinvested dollars and FY 2014 projected payroll. It is our understanding that the Retirement Agency will monitor contributions to ensure that the System receives the proper amount of reinvested savings during Fiscal Year 2014.



Actuarial Value of Assets - (\$ Millions)

The actuarial valuation is not based directly upon market value, but rather uses a smoothed value of assets that phases in each year's gain or loss above/below 7.75% over 5 years. The chart below compares actuarial value to market value over the last five years.

	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Actuarial Value (AV) End of Year	\$39,504	\$34,285	\$34,688	\$36,178	\$37,248
Market Value (MV) End of Year	<u>36,614</u>	<u>28,571</u>	<u>31,923</u>	<u>37,593</u>	<u>37,179</u>
Difference between AV and MV	\$ (2,890)	\$ (5,714)	\$ (2,765)	\$ 1,415	\$ (70)
Ratio of AV to MV	108%	120%	109%	96%	100%

The actuarial value of assets development contains a market value “collar” feature that requires that the actuarial value be within 20% of market value. The next slide gives the detail of how the phase-in actually works.



Actuarial Value of Assets – (\$ Millions)

Phase In of Deferred Gains and Losses

	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
1. Value at July 1, 2011	\$36,177.7				
2. Net Cash Flow	(518.1)				
3. Investment Return	104.1				
4. Expected Return	2,893.7				
5. Gain or loss (3-4)	(2,789.7)				
6. Amount for full recognition	2,893.7				
7. Phase-in amounts					
7a. From this year	(557.9)				
7b. From one year ago	764.4	\$ (557.9)			
7c. From two years ago	365.5	764.4	\$ (557.9)		
7d. From three years ago	(862.2)	365.5	764.4	\$ (557.9)	
7e. From four years ago	<u>(1,014.6)</u>	<u>(862.2)</u>	<u>365.5</u>	<u>764.4</u>	<u>\$ (557.9)</u>
8. Total Phase-ins	(1,304.9)	(290.3)	572.0	206.5	(557.9)
9. Final Value: 1+2+6+8	37,248.4				

Investment return of approximately 12% required in Fiscal Year 2013 to offset scheduled recognized losses.



Comments on Asset Value

- ◆ There is a net loss of about \$70 million to be recognized in the future (\$58 Million State and \$12 Million Municipal)
- ◆ Projected gains and (losses) affecting the State for the next several years:
 - ▶ June 30, 2013 \$(264) Million
 - ▶ June 30, 2014 \$527 Million
 - ▶ June 30, 2015 \$191 Million
 - ▶ June 30, 2016 \$(510) Million



FY 2012 Non-Investment Experience

The contribution rates are impacted by deviations in experience from what is expected under the actuarial valuation assumptions.

The following items increased the contribution rates:

1. Corridor method for Teachers and Employees
2. State Police ratio of liabilities (& assets) to active payroll is highest
3. Lower payroll than expected leads to higher % of pay contribution for unfunded liability. Total payroll was expected to increase by 3.5% over last year and actual payroll changed as follows:
 - a. Teachers decreased by 1.9%
 - b. Employees Combined decreased by 0.6%
 - c. State Police increased by 2.8%
 - d. Judges increased by 3.0%
 - e. LEOPS decreased by 0.4%
4. COLAs granted in 2012 were more than the assumption (3.0% for most retirees, 3.157% for retirees with a 5% or no COLA cap)



FY 2012 Non-Investment Experience

The contribution rates are impacted by deviations in experience from what is expected under the actuarial valuation assumptions.

The following items increased the contribution rates:

1. Lower salary increases than expected
2. Lower COLA than expected for Judges and Legislative retirees (COLA based on salary increases)
3. Lower benefits for members participating in reformed systems (hired on or after July 1, 2011)



Allocation of Contribution to Local Employers

◆ Allocation of Contributions to Local Employers

- ▶ Beginning in Fiscal Year 2013, local employers will contribute a portion of the statutory normal cost contribution for the Teachers Combined System
- ▶ Normal cost contribution amounts for local employers for Fiscal Years 2013 through 2016 are defined in statute
- ▶ Beginning in Fiscal Year 2017, local employers will contribute the normal cost contribution for their employees



Allocation of Contribution to Local Employers

Teachers Combined System

FY2014 Contribution (\$ in Millions)

			<u>Local</u>	
	<u>% of Pay</u>	<u>Total</u>	<u>Employers#</u>	<u>State</u>
Employer Normal Cost	5.83%	\$ 366.9	\$ 173.2	\$ 193.7
UAAL Amortization*	8.88%	558.9	-	558.9
Reinvested Savings	3.23%	<u>203.1</u>	<u>-</u>	<u>203.1</u>
Total	17.94%	\$ 1,128.9	\$ 173.2	\$ 955.7

* Includes impact of corridor funding.

Amounts are taken from Senate Bill 1301.



Projected vs. Actual Results

(STATE ONLY, \$ in Millions)

	Teachers' Combined System	Employees' Combined System	State Police	Judges	LEOPS	Total
Funded Ratio as of June 30, 2012						
Actual	65.8%	58.9%	62.0%	78.6%	55.0%	63.5%
2010 Projected*	62.4%	56.0%	57.8%	63.0%	53.4%	60.1%
Difference	3.4%	2.9%	4.2%	15.6%	1.6%	3.4%
Projected Year 80% Funded is Reached						
2012 Projected	2022	2026	2027	2013	2020	2023
2010 Projected*	2023	2025	2027	2021	2022	2024
Difference	-1	1	0	-8	-2	-1
Projected Year 100% Funded is Reached						
2012 Projected	2031	2032	2032	2027	2029	2031
2010 Projected*	2032	2031	2034	2036	2031	2031
Difference	-1	1	-2	-9	-2	0

* Projected figures from the GA Reform study dated April 20, 2011. Based on the June 30, 2010 valuation. Difference in funded ratio is due to adoption of new demographic assumptions effective June 30, 2012, and actual experience that was different than projected under the actuarial assumptions.



Concluding Comments

- ◆ Employer contributions increased for all Systems except Judges due to Fiscal Year 2012 investment performance and implementing demographic assumption changes from experience study
- ◆ Even with reinvested savings, the corridor method for Teachers and Employees Combined Systems results in budgeted rates that are less than the actuarial rates
- ◆ The current amortization method results in an average amortization period of over 50 years for State Police
- ◆ Continued use of the corridor method will lead to increasing contribution rates even if all assumptions are realized exactly



Conclusion

◆ What Is Needed to Sustain MSRPS?

- ▶ Continued reasonable forecasts of resources and obligations
- ▶ Continued sound investment program
- ▶ Continued long-term approach to changes
- ▶ Adoption of sound funding discipline
 - GRS supports the phase out of the corridor funding method along with the other changes recommended by the Ad Hoc Committee on System Funding



GASB Changes

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GASB Changes - Overview

- ◆ New GASB Accounting Standards No. 67 and No. 68 will create accounting results separate from funding results
 - ▶ Funding calculations **are not impacted**
 - ▶ GASB created a new Net Pension Liability (NPL) and Pension Expense
 - ▶ Statement No. 67 replaces Statement No. 25
 - ▶ Statement No. 68 replaces Statement No. 27

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GASB Changes - Overview

- ◆ Requires recognition of a version of unfunded liability on each employer's balance sheet
 - ▶ Formerly only in footnotes
- ◆ Changes calculation of annual cost
 - ▶ No longer equal to required contribution (ARC)
- ◆ Meant to improve transparency and comparability – market assets, single funding method, rigid amortization rules



GASB Changes - Overview

◆ Special Rules for Agent Plans

- ▶ All pension plans (single, cost sharing, and agent employers) have to disclose its assets in great detail as well as plan description, board composition, investment policies, etc. Identify participating GAAP entities
- ▶ Single and cost-sharing plans have to disclose TPL, NPL, etc, but agent plans do not
- ▶ Agent Employers will have to report TPL, NPL, etc.



GASB Changes - Overview

- ◆ Key differences for employer accounting
 - ▶ New GASB rules do not allow smoothing of assets
 - ▶ New GASB rules may require lower (or blended) discount rate to value liabilities
- ◆ Key takeaways
 - ▶ New GASB rules do NOT change the funding contribution rate or methods
 - ▶ New GASB rules do provide a second set of actuarial numbers



GASB Changes - Overview

◆ Approved Effective Dates

- ▶ Trust's Financial Statement No. 67 – reporting periods beginning after June 15, 2013
- ▶ Employer's Financial Statement No. 68 – reporting periods beginning after June 15, 2014



Disclosures

- ◆ Circular 230 Notice: Pursuant to regulations issued by the IRS, to the extent this presentation concerns tax matters, it is not intended or written to be used, and cannot be used, for the purpose of (i) avoiding tax-related penalties under the Internal Revenue Code or (ii) marketing or recommending to another party any tax-related matter addressed within. Each taxpayer should seek advice based on the individual's circumstances from an independent tax advisor.
- ◆ This presentation shall not be construed to provide tax advice, legal advice or investment advice.
- ◆ The actuaries submitting this presentation (Brian Murphy, Brad Armstrong, and Amy Williams) are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.
- ◆ The purposes of the actuarial valuation are to measure the financial position of MSRPS, assist the Board in establishing employer contribution rates necessary to fund the benefits provided by MSRPS, and provide actuarial reporting and disclosure information for financial reporting.



Disclosures

- ◆ Future actuarial measurements may differ significantly from the current and projected measurements presented in this presentation due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.
- ◆ This is one of multiple documents comprising the actuarial reports for the combined systems and the municipal corporations. Additional information regarding actuarial assumptions and methods, and important additional disclosures are provided in the Actuarial Valuations as of June 30, 2012.
- ◆ If you need additional information to make an informed decision about the contents of this presentation, or if anything appears to be missing or incomplete, please contact us before relying on this presentation.

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

Annual State Retirement and Pension System's Investment Overview

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, 2012¹
(\$ in Millions)

	<u>Assets</u>	<u>% Total</u>	<u>Time Weighted Total Returns</u>		
			<u>1 Year</u>	<u>5 Years</u>	<u>10 Years</u>
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)

<u>Program Manager</u>	<u>Total Assets</u>	<u>Actual (FY 2012)</u>	<u>Benchmark (FY 2012)</u>	<u>Actual (Inception)</u>	<u>Benchmark (Inception)</u>
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%
 <u>Asset Class</u>					
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

	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
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

	FY 2012 Return	Asset Allocation								
		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.

¹Includes 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 <u>6/30/2012</u>	Actual <u>6/30/2012</u>	Actual <u>6/30/2011</u>
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

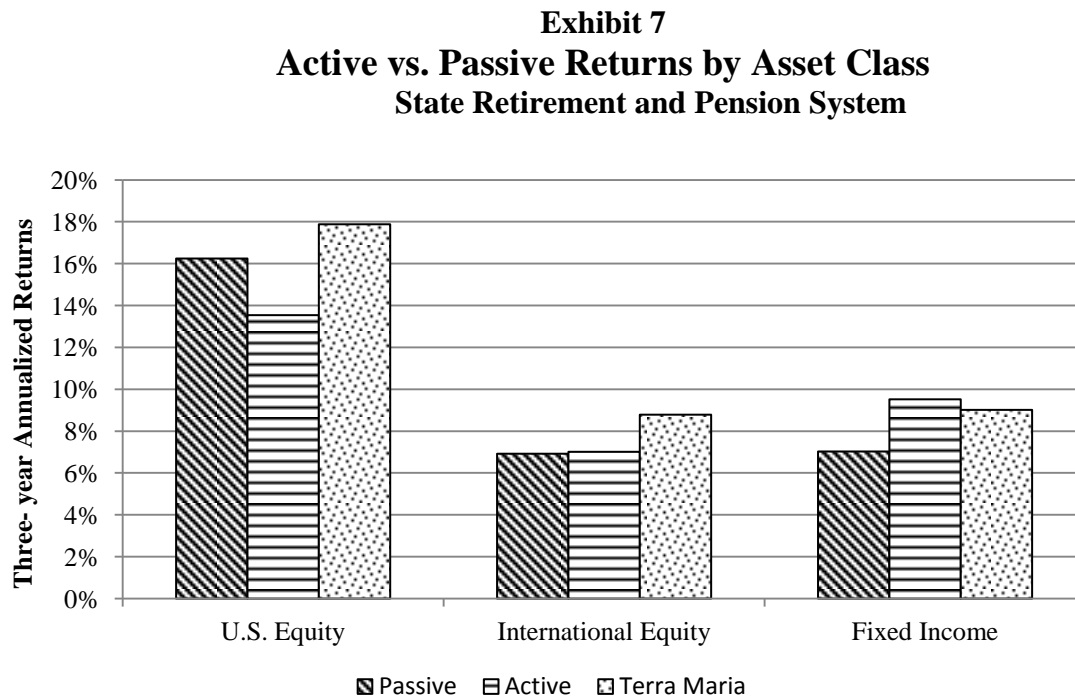
The Maryland Public Policy Institute (MPPI) recently issued a report advising that SRPS “would be wise to index the system's portfolios to ensure average investment returns.” Although DLS has in the past recommended shifting the system's domestic equity assets to more passive managers, MPPI's recommendation 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.



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 \$231.3 million in investment management fees in fiscal 2012, a 5.3% 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)

	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>% Change 2008-2012</u>
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.

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



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SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
U.S. EQUITY												
BGI RUSSELL 1000	969.06	2.6	3.74	-3.19	9.21	4.27	4.27	16.33			15.95	06-01-09
RUSSELL 1000			3.83	-3.12	9.38	4.37	4.37	16.64			16.25	
EXCESS			-0.09	-0.07	-0.17	-0.10	-0.10	-0.31			-0.30	
SSGA RUSSELL 3000 INDEX	1,321.53	3.6	3.98	-2.92	9.31	3.90	3.90				3.90	07-01-11
RUSSELL 3000			3.92	-3.15	9.32	3.84	3.84				3.84	
EXCESS			0.06	0.23	-0.01	0.06	0.06				0.06	
TOTAL US EQUITY PASSIVE	2,290.59	6.2	3.88	-3.03	9.28	4.03	4.03	16.25	0.22	5.75		11-01-92
RELATIONAL INVESTORS	303.75	0.8	0.98	-7.32	3.09	-6.69	-6.69	15.12	-4.15	5.30	7.85	01-01-98
S&P 500			4.12	-2.75	9.49	5.45	5.45	16.40	0.22	5.33	4.22	
EXCESS			-3.14	-4.57	-6.40	-12.14	-12.14	-1.28	-4.37	-0.03	3.63	
T. ROWE PRICE ENHANCED	528.99	1.4	4.00	-3.41	9.70	5.59	5.59	15.93	0.85		3.56	05-01-06
S&P 500			4.12	-2.75	9.49	5.45	5.45	16.40	0.22		2.80	
EXCESS			-0.12	-0.66	0.21	0.14	0.14	-0.47	0.63		0.76	
UBS US EQUITY HALO	0.01	0.0										07-01-09
LEGG MASON COLLECTIVE ALPHA	98.30	0.3	2.27	-7.65	6.05	-2.91	-2.91				8.98	10-01-09
RUSSELL 3000			3.92	-3.15	9.32	3.84	3.84				12.07	
EXCESS			-1.65	-4.50	-3.27	-6.75	-6.75				-3.09	

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Appendix 1

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

Annual State Retirement and Pension System's Investment Overview

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
ZEVENBERGEN CAPITAL INV.	87.99	0.2	2.52	-10.92	4.89	-11.67	-11.67	17.29			24.75	12-01-08
¹ Custom Zevenbergen Index			3.92	-3.15	9.32	3.84	3.84	19.19			21.99	
EXCESS			-1.40	-7.77	-4.43	-15.51	-15.51	-1.90			2.76	
TOTAL U.S. EQUITY ACTIVE	1,019.04	2.7	2.76	-6.27	7.21	-2.49	-2.49	13.54	-3.35			06-01-94
² ACTIVE US EQ BM			4.08	-2.85	9.49	4.87	4.87	16.79				
EXCESS			-1.32	-3.42	-2.28	-7.36	-7.36	-3.25				
TOTAL TERRA MARIA US EQUITY	1,505.92	4.1	3.46	-4.89	8.36	0.07	0.07	17.88	3.06		4.22	04-01-07
³ TERRA MARIA US EQUITY BENCHMARK			4.02	-3.26	9.12	2.77	2.77	18.50	2.06		2.97	
EXCESS			-0.56	-1.63	-0.76	-2.70	-2.70	-0.62	1.00		1.25	
TOTAL TM US EQUITY + ACTIVE U.S. EQUIT	2,524.96	6.8	3.18	-5.51	7.91	-1.15	-1.15	15.31			3.54	07-01-08
² TM US EQ + ACTIVE US EQ BM			4.05	-3.07	9.28	3.85	3.85	17.53			4.66	
EXCESS			-0.87	-2.44	-1.37	-5.00	-5.00	-2.22			-1.12	
TRANSITION ACCOUNT	0.00	0.0										07-01-83
⁴ TOTAL U.S. EQUITY	4,815.55	13.0	3.51	-4.46	8.40	1.14	1.14	15.78	-0.32	5.41	7.33	04-01-94
⁵ MSRA CUSTOM US EQUITY INDEX			3.92	-3.15	9.32	3.84	3.84	16.73	0.43	5.88	8.42	
EXCESS			-0.41	-1.31	-0.92	-2.70	-2.70	-0.95	-0.75	-0.47	-1.09	
² US EQUITY DYNAMIC BENCHMARK			3.97	-3.10	9.30	3.62	3.62	16.94				

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

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SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
INTERNATIONAL EQUITY												
SSGA INTERNATIONAL FUND	2,151.89	5.8	6.65	-7.00	2.73	-13.88	-13.88	6.32	-4.84		8.68	05-01-03
⁶ SSGA INTERNATIONAL CUSTOM INDEX			6.55	-7.20	2.43	-14.13	-14.13	5.96	-5.16		8.45	
EXCESS			0.10	0.20	0.30	0.25	0.25	0.36	0.32		0.23	
TOTAL PASSIVE INTERNATIONAL EQUITY	2,788.73	7.5	6.00	-7.53	2.15	-14.37	-14.37	6.92	-4.52		8.89	05-01-03
ARTISAN PARTNERS, L.P.	469.99	1.3	5.23	-4.22	10.63	-2.95	-2.95	11.70	-1.01		8.59	11-01-03
ARTISAN CUSTOM BENCHMARK			5.13	-7.06	3.39	-13.02	-13.02	7.61	-4.28		6.82	
EXCESS			0.10	2.84	7.24	10.07	10.07	4.09	3.27		1.77	
EARNEST PARTNERS INTL EQUITY	336.59	0.9	3.10	-10.12	-0.23	-17.17	-17.17				3.92	10-01-09
MSCI AC WORLD ex US (NET)			5.90	-7.61	2.77	-14.57	-14.57				0.82	
EXCESS			-2.80	-2.51	-3.00	-2.60	-2.60				3.10	
DFA NON US GDP STRATEGY	198.77	0.5	6.59	-11.37	0.31	-25.03	-25.03				-7.83	01-01-10
MSCI All Country World ex US IMI net			5.59	-7.77	2.93	-14.79	-14.79				-0.23	
EXCESS			1.00	-3.60	-2.62	-10.24	-10.24				-7.60	
BROWN CAPITAL MANAGEMENT INT'L	190.17	0.5	3.81	-6.96	6.36	-13.09	-13.09	6.81			14.41	12-01-08
MSCI All Country World ex US IMI net			5.59	-7.77	2.93	-14.79	-14.79	7.36			12.25	
EXCESS			-1.78	0.81	3.43	1.70	1.70	-0.55			2.16	
MCKINLEY CAPITAL MANAGEMENT	2.14	0.0										04-01-09
INVESCO INTERNATIONAL EQUITY	2.11	0.0										10-01-09

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Returns for periods prior to 7/1/2008 are Gross of Fees

Provided by State Street Investment Analytics

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

Annual State Retirement and Pension System's Investment Overview

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
UBS INTERNATIONAL EQUITY	280.59	0.8	5.66	-8.79	3.60	-15.15	-15.15				-0.76	11-01-09
MSCI WORLD EX US (NET)			6.55	-7.20	2.43	-14.13	-14.13				0.74	
EXCESS			-0.89	-1.59	1.17	-1.02	-1.02				-1.50	
DFA SMALL CAP INTERNATIONAL	187.56	0.5	3.91	-9.29	3.83	-15.42	-15.42	9.64	-4.22		1.19	03-01-06
MSCI EAFE SMALL CAP(G)			4.08	-8.47	5.20	-14.75	-14.75	9.52	-4.98		-0.28	
EXCESS			-0.17	-0.82	-1.37	-0.67	-0.67	0.12	0.76		1.47	
GENESIS ASSET MANAGERS LTD	193.15	0.5	3.58	-6.92	5.75	-11.90	-11.90	15.03			15.03	07-01-09
MSCI EMERGING MARKETS (NET)			3.86	-8.89	3.93	-15.95	-15.95	9.77			9.77	
EXCESS			-0.28	1.97	1.82	4.05	4.05	5.26			5.26	
ROBEKO EMERGING MARKETS EQUITY	178.85	0.5	3.10	-9.89	3.11	-17.66	-17.66				-7.31	10-01-10
MSCI EMERGING MARKETS (NET)			3.86	-8.89	3.93	-15.95	-15.95				-5.26	
EXCESS			-0.76	-1.00	-0.82	-1.71	-1.71				-2.05	
INVESCO EMERGING MARKET EQUITY	5.02	0.0										10-01-09
REXITER INTL. EMERGING EQUITY	4.93	0.0										07-01-10
SSGA EMERGING MARKETS INDEX FUND	636.84	1.7	1.77								1.77	06-01-12
MSCI EMERGING MARKETS (NET)			3.86								3.86	
EXCESS			-2.09								-2.09	

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

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SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
CAPITAL INTERNATIONAL EMERGING MAR	37.67	0.1	1.93	-12.64	-1.12	-22.88	-22.88				-11.00	10-01-10
<i>MSCI Emerging Markets IMI Index (Net)</i>			3.76	-8.79	4.31	-16.29	-16.29				-5.73	
<i>EXCESS</i>			-1.83	-3.85	-5.43	-6.59	-6.59				-5.27	
TOTAL ACTIVE EMERGING MARKET	419.62	1.1	3.01	-12.89	-0.64	-21.30	-21.30				-0.25	07-01-10
<i>MSCI EMERGING MARKETS (NET)</i>			3.86	-8.89	3.93	-15.95	-15.95				3.64	
<i>EXCESS</i>			-0.85	-4.00	-4.57	-5.35	-5.35				-3.89	
GLOBEFLEX CAPITAL, L.P.	0.02	0.0										02-01-06
TOTAL ACTIVE INTERNATIONAL EQUITY	2,087.56	5.6	4.33	-8.80	3.18	-15.99	-15.99	7.01	-5.36			01-01-95
² <i>ACTIVE INTL EQ BM</i>			5.18	-7.76	3.51	-14.60	-14.60	7.50				
<i>EXCESS</i>			-0.85	-1.04	-0.33	-1.39	-1.39	-0.49				
TOTAL TERRA MARIA INT'L EQUITY	682.54	1.8	5.50	-6.56	4.27	-12.56	-12.56	8.79			-3.02	11-01-07
⁷ <i>TERRA MARIA INT'L EQ BENCHMARK</i>			5.81	-7.66	2.99	-14.54	-14.54	7.52			-5.31	
<i>EXCESS</i>			-0.31	1.10	1.28	1.98	1.98	1.27			2.29	
TOTAL TM INTL EQUITY + ACTIVE INTL EQ	2,770.10	7.5	4.62	-8.25	3.55	-15.27	-15.27	7.34			-3.88	07-01-08
² <i>TM INTL EQ + ACTIVE INTL EQ BM</i>			5.33	-7.71	3.45	-14.56	-14.56	7.52			-3.59	
<i>EXCESS</i>			-0.71	-0.54	0.10	-0.71	-0.71	-0.18			-0.29	
TOTAL INTL EQUITY EX OVERLAY	5,558.83	15.0	5.31	-7.67	3.58	-14.71	-14.71	7.01	-4.59	5.87		01-01-95
⁸ <i>MSRA CUSTOM INTERNATIONAL INDEX</i>			5.90	-7.61	2.77	-14.57	-14.57	7.31	-4.44	6.75	4.96	
<i>EXCESS</i>			-0.59	-0.06	0.81	-0.14	-0.14	-0.30	-0.15	-0.88		

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

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SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
RECORD CURRENCY MANAGEMENT	15.57	0.0										05-01-09
⁹ TOTAL INTERNATIONAL EQUITY	5,574.40	15.0	4.45	-7.03	3.87	-14.49	-14.49	7.04	-4.67	5.82	5.92	01-01-95
⁸ MSRA CUSTOM INTERNATIONAL INDEX			5.90	-7.61	2.77	-14.57	-14.57	7.31	-4.44	6.75	4.96	
EXCESS			-1.45	0.58	1.10	0.08	0.08	-0.27	-0.23	-0.93	0.96	
² INTL EQUITY DYNAMIC BENCHMARK			5.73	-7.53	3.23	-14.41	-14.41	6.91				

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

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SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
GLOBAL EQUITY												
ACADIAN ASSET MGT	497.60	1.3	5.24	-4.92	6.13	-5.95	-5.95	11.40	-4.63		2.22	10-01-05
MSCI AC WORLD (NET)			4.94	-5.56	5.65	-6.49	-6.49	10.80	-2.70		2.71	
EXCESS			0.30	0.64	0.48	0.54	0.54	0.60	-1.93		-0.49	
TEMPLETON INVESTMENT MGT	616.69	1.7	6.41	-4.95	5.69	-5.44	-5.44	11.97	-2.14		3.97	01-01-06
MSCI AC WORLD (NET)			4.94	-5.56	5.65	-6.49	-6.49	10.80	-2.70		2.30	
EXCESS			1.47	0.61	0.04	1.05	1.05	1.17	0.56		1.67	
T. ROWE PRICE GLOBAL	476.79	1.3	3.49	-9.78	5.76	-7.79	-7.79	9.74			-5.66	01-01-08
MSCI AC WORLD (NET)			4.94	-5.56	5.65	-6.49	-6.49	10.80			-3.34	
EXCESS			-1.45	-4.22	0.11	-1.30	-1.30	-1.06			-2.32	
BAILLIE GIFFORD	583.49	1.6	3.02	-5.73	11.29	-7.48	-7.48	13.59			0.65	02-01-08
MSCI AC WORLD (NET)			4.94	-5.56	5.65	-6.49	-6.49	10.80			-1.51	
EXCESS			-1.92	-0.17	5.64	-0.99	-0.99	2.79			2.16	
MARATHON LONDON	569.81	1.5	5.02	-4.44	9.63	-6.47	-6.47	16.65			23.65	03-01-09
MSCI AC WORLD (NET)			4.94	-5.56	5.65	-6.49	-6.49	10.80			19.28	
EXCESS			0.08	1.12	3.98	0.02	0.02	5.85			4.37	
ALLIANCE BERNSTEIN ALL COUNTRY BLE	203.87	0.5	4.19	-8.59	3.43	-12.30	-12.30				0.44	10-01-09
MSCI AC WORLD (NET)			4.94	-5.56	5.65	-6.49	-6.49				5.35	
EXCESS			-0.75	-3.03	-2.22	-5.81	-5.81				-4.91	

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	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
LONGVIEW PRTNRS GLOBAL EQUITY	253.99	0.7	4.65	-3.51	10.70	-0.11	-0.11				8.76	10-01-09
MSCI AC WORLD (NET)			4.94	-5.56	5.65	-6.49	-6.49				5.35	
EXCESS			-0.29	2.05	5.05	6.38	6.38				3.41	
BROWN CAPITAL GLOBAL EQUITY	220.83	0.6	3.96	-6.96	7.33	-4.27	-4.27				3.81	01-01-10
MSCI AC WORLD (NET)			4.94	-5.56	5.65	-6.49	-6.49				4.00	
EXCESS			-0.98	-1.40	1.68	2.22	2.22				-0.19	
GOLDMAN SACHS SUSTAIN	265.13	0.7	3.74	-7.23	4.82	-8.09	-8.09	9.97			9.97	07-01-09
MSCI AC WORLD CUSTOM BM			4.94	-5.56	5.65	-6.49	-6.49	11.50			11.50	
EXCESS			-1.20	-1.67	-0.83	-1.60	-1.60	-1.53			-1.53	
AQR CAPITAL- GLOBAL EQUITY	478.79	1.3	5.01	-4.91	5.71	-5.63	-5.63				7.69	08-01-10
MSCI AC WORLD (NET)			4.94	-5.56	5.65	-6.49	-6.49				6.37	
EXCESS			0.07	0.65	0.06	0.86	0.86				1.32	
D.E. SHAW INV -GLOBAL EQUITY	382.25	1.0	5.20	-5.53	7.08	-4.20	-4.20				8.85	08-01-10
MSCI WORLD (NET)			5.10	-5.07	5.91	-4.98	-4.98				7.44	
EXCESS			0.10	-0.46	1.17	0.78	0.78				1.41	
SSGA GLOBAL INDEX FUND	518.24	1.4	5.19								-4.19	05-01-12
MSCI AC WORLD (NET)			4.94								-4.47	
EXCESS			0.25								0.28	

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET²⁰

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
TOTAL PASSIVE GLOBAL EQUITY	518.24	1.4	5.19								-4.19	05-01-12
MSCI AC WORLD (NET)			4.94								-4.47	
EXCESS			0.25								0.28	
TOTAL ACTIVE GLOBAL EQUITY	4,549.25	12.3	4.63	-5.90	7.41	-6.30	-6.30	12.01	-2.38		3.21	10-01-05
MSCI AC WORLD (NET)			4.94	-5.56	5.65	-6.49	-6.49	10.80	-2.70		2.71	
EXCESS			-0.31	-0.34	1.76	0.19	0.19	1.21	0.32		0.50	
TOTAL TERRA MARIA GLOBAL EQUITY	246.70	0.7	4.47	-9.68	2.09	-11.73	-11.73	7.72			9.69	12-01-08
TERRA MARIA GLOBAL EQ BM			4.99	-5.40	5.74	-5.98	-5.98	10.59			11.67	
EXCESS			-0.52	-4.28	-3.65	-5.75	-5.75	-2.87			-1.98	
TOTAL TM GLOBAL EQ + ACTIVE GLOBAL	4,795.96	12.9	4.80	-6.21	6.98	-6.72	-6.72	11.81			-0.70	07-01-08
² TM GLOBAL + ACTIVE GLOBAL BM			4.95	-5.51	5.69	-6.36	-6.36	10.90			-0.93	
EXCESS			-0.15	-0.70	1.29	-0.36	-0.36	0.91			0.23	
TOTAL GLOBAL EQUITY EX OVERLAY	5,314.20	14.3	4.84	-6.13	7.07	-6.64	-6.64	11.84	-2.45		3.15	10-01-05
¹⁰ MSRA CUSTOM GLOBAL INDEX			4.94	-5.56	5.65	-6.49	-6.49	11.23	-2.47		2.89	
EXCESS			-0.10	-0.57	1.42	-0.15	-0.15	0.61	0.02		0.26	
RECORD CURRENCY - GLOBAL	15.95	0.0										05-01-09

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TOTAL GLOBAL EQUITY	5,330.15	14.4	4.40	-5.80	7.07	-6.34	-6.34	11.93	-2.44		3.15	10-01-05
¹⁰ <i>MSRA CUSTOM GLOBAL INDEX</i>			4.94	-5.56	5.65	-6.49	-6.49	11.23	-2.47		2.89	
<i>EXCESS</i>			-0.54	-0.24	1.42	0.15	0.15	0.70	0.03		0.26	
² <i>GLOBAL EQUITY DYNAMIC BENCHMARK</i>			4.95	-5.52	5.69	-6.36	-6.36	10.90				
<u>PUBLIC EQUITY</u>												
TOTAL PUBLIC EQUITY	15,720.10	42.4	4.15	-5.81	6.28	-6.78	-6.78	11.53	-2.53	5.04		04-01-94
² <i>PUBLIC EQ BM</i>			4.91	-5.36	6.05	-5.85	-5.85	11.76				
<i>EXCESS</i>			-0.76	-0.45	0.23	-0.93	-0.93	-0.23				
¹¹ <i>PUBLIC EQ BM 2</i>			4.95	-5.59	5.69	-6.14	-6.14	11.70				

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RATES OF RETURN - Net Manager Fees

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SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
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FIXED INCOME

SSGA PASSIVE FIXED INCOME			1,245.18	3.4	0.11	2.13	2.52	7.79	7.79	7.03	6.86	5.25	05-01-03
<i>Barclays Aggregate Bond</i>					<i>0.04</i>	<i>2.06</i>	<i>2.37</i>	<i>7.47</i>	<i>7.47</i>	<i>6.93</i>	<i>6.79</i>	<i>5.21</i>	
<i>EXCESS</i>					<i>0.07</i>	<i>0.07</i>	<i>0.15</i>	<i>0.32</i>	<i>0.32</i>	<i>0.10</i>	<i>0.07</i>	<i>0.04</i>	
PIMCO			735.09	2.0	0.13	2.36	4.32	7.60	7.60	8.80	7.22	6.22	06-01-84
¹² <i>PIMCO CUSTOM INDEX</i>					<i>0.04</i>	<i>2.06</i>	<i>2.37</i>	<i>7.47</i>	<i>7.47</i>	<i>6.93</i>	<i>6.39</i>	<i>5.64</i>	<i>8.42</i>
<i>EXCESS</i>					<i>0.09</i>	<i>0.30</i>	<i>1.95</i>	<i>0.13</i>	<i>0.13</i>	<i>1.87</i>	<i>0.83</i>	<i>0.58</i>	
<i>Barclays Aggregate Bond</i>					<i>0.04</i>	<i>2.06</i>	<i>2.37</i>	<i>7.47</i>	<i>7.47</i>	<i>6.93</i>	<i>6.79</i>	<i>5.63</i>	
WESTERN ASSET MANAGEMENT			722.40	1.9	0.53	2.40	4.48	8.52	8.52	13.12	8.83	7.51	09-01-03
¹³ <i>Custom BC Agg/US Universal Benchmark</i>					<i>0.04</i>	<i>2.06</i>	<i>2.37</i>	<i>7.47</i>	<i>7.47</i>	<i>6.93</i>	<i>6.39</i>	<i>5.57</i>	
<i>EXCESS</i>					<i>0.49</i>	<i>0.34</i>	<i>2.11</i>	<i>1.05</i>	<i>1.05</i>	<i>6.19</i>	<i>2.44</i>	<i>1.94</i>	
<i>Barclays Aggregate Bond</i>					<i>0.04</i>	<i>2.06</i>	<i>2.37</i>	<i>7.47</i>	<i>7.47</i>	<i>6.93</i>	<i>6.79</i>	<i>5.55</i>	
PYRAMIS GLOBAL ADVISORS			571.99	1.5	0.13	2.36	3.03	8.15	8.15	8.47		7.14	02-01-08
¹³ <i>Custom BC Agg/US Universal Benchmark</i>					<i>0.04</i>	<i>2.06</i>	<i>2.37</i>	<i>7.47</i>	<i>7.47</i>	<i>6.93</i>		<i>5.67</i>	
<i>EXCESS</i>					<i>0.09</i>	<i>0.30</i>	<i>0.66</i>	<i>0.68</i>	<i>0.68</i>	<i>1.54</i>		<i>1.47</i>	
<i>Barclays Aggregate Bond</i>					<i>0.04</i>	<i>2.06</i>	<i>2.37</i>	<i>7.47</i>	<i>7.47</i>	<i>6.93</i>		<i>5.94</i>	
ABERDEEN ASSET MGMT, INC			570.25	1.5	0.27	2.34	3.85	8.42	8.42	10.00		6.39	04-01-08
¹³ <i>Custom BC Agg/US Universal Benchmark</i>					<i>0.04</i>	<i>2.06</i>	<i>2.37</i>	<i>7.47</i>	<i>7.47</i>	<i>6.93</i>		<i>5.84</i>	
<i>EXCESS</i>					<i>0.23</i>	<i>0.28</i>	<i>1.48</i>	<i>0.95</i>	<i>0.95</i>	<i>3.07</i>		<i>0.55</i>	
<i>Barclays Aggregate Bond</i>					<i>0.04</i>	<i>2.06</i>	<i>2.37</i>	<i>7.47</i>	<i>7.47</i>	<i>6.93</i>		<i>6.05</i>	

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GOLDMAN SACHS FI CORE PLUS	391.46	1.1	0.29	2.28	3.44	7.91	7.91	8.21			8.75	03-01-09
13 Custom BC Agg/US Universal Benchmark			0.04	2.06	2.37	7.47	7.47	6.93			7.63	
EXCESS			0.25	0.22	1.07	0.44	0.44	1.28			1.12	
Barclays Aggregate Bond			0.04	2.06	2.37	7.47	7.47	6.93			7.22	
DODGE & COX - FI CORE	390.72	1.1	0.41	1.44	4.28	6.24	6.24	8.20			8.79	03-01-09
Barclays Aggregate Bond			0.04	2.06	2.37	7.47	7.47	6.93			7.22	
EXCESS			0.37	-0.62	1.91	-1.23	-1.23	1.27			1.57	
PRINCIPAL CORE BOND	562.60	1.5	0.18	2.15	3.22	7.45	7.45	8.11			8.11	07-01-09
Barclays Aggregate Bond			0.04	2.06	2.37	7.47	7.47	6.93			6.93	
EXCESS			0.14	0.09	0.85	-0.02	-0.02	1.18			1.18	
WESTERN ASSET GLOBAL AGGREGATE B	731.84	2.0	1.09	2.99	5.28	8.69	8.69				7.73	09-01-09
14 CUSTOM GLOBAL FIXED INCOME BM			-0.16	1.50	2.73	6.70	6.70				3.41	
EXCESS			1.25	1.49	2.55	1.99	1.99				4.32	
PIMCO GLOBAL AGGREGATE BONDS	678.21	1.8	0.65	1.84	4.36	10.86	10.86				7.58	09-01-09
14 CUSTOM GLOBAL FIXED INCOME BM			-0.16	1.50	2.73	6.70	6.70				3.41	
EXCESS			0.81	0.34	1.63	4.16	4.16				4.17	
WESTERN ASSET - ISRAEL BD	20.40	0.1	0.09	0.63	1.19	1.47	1.47	3.09	3.53		3.77	06-01-05
WESTERN ASSET ISRAEL BOND INDEX			-0.37	-0.38	0.01	1.78	1.78	1.47	0.17		-0.39	
EXCESS			0.46	1.01	1.18	-0.31	-0.31	1.62	3.36		4.16	

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SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
TOTAL ACTIVE FIXED INCOME	5,374.96	14.5	0.43	2.28	4.09	8.35	8.35	9.52	6.86			07-01-86
² <i>ACTIVE FIXED INCOME BM</i>			-0.02	1.91	2.46	7.27	7.27	6.59				
<i>EXCESS</i>			0.45	0.37	1.63	1.08	1.08	2.93				
¹⁵ TOTAL TERRA MARIA FIXED INCOME	486.81	1.3	0.10	2.03	3.30	7.96	7.96	9.01			10.73	11-01-08
¹⁶ <i>TERRA MARIA FI BENCHMARK</i>			0.04	2.06	2.37	7.47	7.47	8.32			12.69	
<i>EXCESS</i>			0.06	-0.03	0.93	0.49	0.49	0.69			-1.96	
TOTAL TM FIXED INCOME + ACTIVE FI	5,861.77	15.8	0.40	2.26	4.03	8.31	8.31	9.50			7.30	07-01-08
² <i>TM FI + ACTIVE FI BM</i>			-0.01	1.92	2.45	7.29	7.29	6.86			7.13	
<i>EXCESS</i>			0.41	0.34	1.58	1.02	1.02	2.64			0.17	
TOTAL FIXED INCOME												
TOTAL FIXED INCOME	7,106.94	19.2	0.35	2.24	3.72	8.25	8.25	9.05	7.44	6.34	7.95	07-01-86
¹⁷ <i>Custom Fixed Income Benchmark</i>			-0.00	1.95	2.44	7.32	7.32	6.77	6.29	5.73		
<i>EXCESS</i>			0.35	0.29	1.28	0.93	0.93	2.28	1.15	0.61		
² <i>FIXED INCOME DYNAMIC BENCHMARK</i>			-0.00	1.95	2.43	7.33	7.33	6.77				

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SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
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CREDIT/DEBT

OAKTREE CAPITAL MANAGEMENT	344.98	0.9	2.23	1.72	5.33	7.20	7.20	13.71			17.77	03-01-09
Barclays US High Yield - 2% Issuer Cap			2.11	1.79	7.23	7.21	7.21	16.19			22.73	
EXCESS			0.12	-0.07	-1.90	-0.01	-0.01	-2.48			-4.96	

KKR FLEXIBLE CREDIT	292.51	0.8	1.60	0.86	6.13	6.28	6.28				7.55	09-01-10
¹⁸ Custom KKR Index			1.36	1.29	5.81	5.01	5.01				7.86	
EXCESS			0.24	-0.43	0.32	1.27	1.27				-0.31	

NEUBERGER BERMAN FLEX CREDIT	222.99	0.6	1.82	3.18	7.73	9.22	9.22				6.43	10-01-10
50% BC CREDIT & 50% BC HIGH YIELD			1.27	2.15	5.91	8.49	8.49				7.68	
EXCESS			0.55	1.03	1.82	0.73	0.73				-1.25	

REXITAR EMERGING MARKET DEBT	213.18	0.6	5.05	-0.51	7.25	0.13	0.13				3.35	10-01-10
JP Morgan GBI EM Global Diversified			5.58	-1.21	6.99	-1.69	-1.69				2.67	
EXCESS			-0.53	0.70	0.26	1.82	1.82				0.68	

PERELLA WEINBERG	231.94	0.6	0.13	1.42	4.37	12.53	12.53				10.82	07-01-10
HFRI ED: Distressed/Restructuring Index			-0.11	-2.06	2.68	-3.05	-3.05				4.12	
EXCESS			0.24	3.48	1.69	15.58	15.58				6.70	

ANCHORAGE CAPITAL GROUP	156.46	0.4	0.37	0.41	6.72						4.31	11-01-11
HFRI ED: Distressed/Restructuring Index			-0.11	-2.06	2.68						2.64	
EXCESS			0.48	2.47	4.04						1.67	

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

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SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
KING STREET CAPITAL	154.99	0.4	0.13	-0.09	2.95						3.32	12-01-11
<i>HFRI ED: Distressed/Restructuring Index</i>			<i>-0.11</i>	<i>-2.06</i>	<i>2.68</i>						<i>3.37</i>	
<i>EXCESS</i>			<i>0.24</i>	<i>1.97</i>	<i>0.27</i>						<i>-0.05</i>	
BRIGADE LEVERAGED CAP STR FD	126.84	0.3	0.12	0.92							1.47	03-01-12
<i>HFRI ED: Distressed/Restructuring Index</i>			<i>-0.11</i>	<i>-2.06</i>							<i>-1.23</i>	
<i>EXCESS</i>			<i>0.23</i>	<i>2.98</i>							<i>2.70</i>	
TOTAL CREDIT HEDGE FUND	670.23	1.8	0.18	0.74	4.56	8.81	8.81				8.98	07-01-10
<i>HFRI ED: Distressed/Restructuring Index</i>			<i>-0.11</i>	<i>-2.06</i>	<i>2.68</i>	<i>-3.05</i>	<i>-3.05</i>				<i>4.12</i>	
<i>EXCESS</i>			<i>0.29</i>	<i>2.80</i>	<i>1.88</i>	<i>11.86</i>	<i>11.86</i>				<i>4.86</i>	
19 TOTAL DISTRESSED DEBT	402.28	1.1	0.96	6.95	5.28	-6.11	-6.11				4.25	01-01-10
19 TOTAL MEZZANINE DEBT	274.66	0.7	0.66	3.52	7.20	8.70	8.70				6.39	01-01-10
TOTAL PUBLIC-PRIVATE INVESTMENT PRO	296.89	0.8	1.23	8.88	15.69	2.40	2.40				11.32	12-01-09
15 TOTAL TERRA MARIA CREDIT/DEBT	165.00	0.4	1.59	-0.42	4.53	2.20	2.20				8.18	01-01-10
<i>TERRA MARIA CREDIT/DEBT BENCHMARK</i>			<i>1.63</i>	<i>0.04</i>	<i>5.46</i>	<i>4.07</i>	<i>4.07</i>				<i>9.41</i>	
<i>EXCESS</i>			<i>-0.04</i>	<i>-0.46</i>	<i>-0.93</i>	<i>-1.87</i>	<i>-1.87</i>				<i>-1.23</i>	
TOTAL CREDIT/DEBT STRATEGIES	2,882.73	7.8	1.38	2.77	6.74	3.10	3.10	11.73			14.73	03-01-09
20 MSRA CUSTOM CREDIT/DEBT BM			1.27	2.15	5.91	8.49	8.49	12.17			15.07	
<i>EXCESS</i>			<i>0.11</i>	<i>0.62</i>	<i>0.83</i>	<i>-5.39</i>	<i>-5.39</i>	<i>-0.44</i>			<i>-0.34</i>	

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Returns for periods prior to 7/1/2008 are Gross of Fees

Provided by State Street Investment Analytics

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

Annual State Retirement and Pension System's Investment Overview

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
REAL RETURN												
PIMCO REAL RETURN	423.33	1.1	-0.39	3.46	4.63	11.22	11.22	10.52	9.30		7.47	02-01-06
Barclays Global Inflation Linked:US TIPS			-0.56	3.15	4.04	11.66	11.66	9.63	8.44		6.88	
EXCESS			0.17	0.31	0.59	-0.44	-0.44	0.89	0.86		0.59	
GOLDMAN SACHS - REAL RTN TIPS	403.01	1.1	-0.58	3.13	4.11	12.06	12.06	9.78			11.10	03-01-09
Barclays Global Inflation Linked:US TIPS			-0.56	3.15	4.04	11.66	11.66	9.63			10.71	
EXCESS			-0.02	-0.02	0.07	0.40	0.40	0.15			0.39	
WESTERN ASSET - REAL RTN TIPS	315.93	0.9	-0.49	3.32	4.11	11.41	11.41				8.89	10-01-09
Barclays Global Inflation Linked:US TIPS			-0.56	3.15	4.04	11.66	11.66				9.35	
EXCESS			0.07	0.17	0.07	-0.25	-0.25				-0.46	
BLACKROCK TIPS	255.82	0.7	-0.45	3.17	3.87	11.82	11.82				9.17	10-01-09
Barclays Global Inflation Linked:US TIPS			-0.56	3.15	4.04	11.66	11.66				9.35	
EXCESS			0.11	0.02	-0.17	0.16	0.16				-0.18	
TOTAL U.S. TIPS	1,398.09	3.8	-0.47	3.28	4.22	11.61	11.61	10.18	9.17		7.37	02-01-06
Barclays Global Inflation Linked:US TIPS			-0.56	3.15	4.04	11.66	11.66	9.63	8.44		6.88	
EXCESS			0.09	0.13	0.18	-0.05	-0.05	0.55	0.73		0.49	
PIMCO GLOBAL-LINKED	447.54	1.2	-0.92	2.39	3.36	10.59	10.59				9.25	09-01-09
Barclays World Inflat-Linked Bond Index			-1.12	1.48	2.73	9.28	9.28				7.76	
EXCESS			0.20	0.91	0.63	1.31	1.31				1.49	

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

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SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
WESTERN ASSET GLOBAL-LINKED	295.52	0.8	-0.90	1.53	1.89	8.80	8.80				6.10	10-01-09
<i>Barclays World Inflat-Linked Bond Index</i>			-1.12	1.48	2.73	9.28	9.28				7.50	
<i>EXCESS</i>			0.22	0.05	-0.84	-0.48	-0.48				-1.40	
TOTAL GILB	743.06	2.0	-0.91	2.05	2.77	9.87	9.87				8.27	09-01-09
<i>Barclays World Inflat-Linked Bond Index</i>			-1.12	1.48	2.73	9.28	9.28				7.76	
<i>EXCESS</i>			0.21	0.57	0.04	0.59	0.59				0.51	
NEW CENTURY ADVISORS (NT)	34.39	0.1	0.37	3.51	4.49	12.31	12.31	9.57			10.13	12-01-08
<i>Barclays World Inflat-Linked Bond Index</i>			-1.12	1.48	2.73	9.28	9.28	8.10			9.49	
<i>EXCESS</i>			1.49	2.03	1.76	3.03	3.03	1.47			0.64	
GRESHAM INVESTMENT MGMT, LLC	213.62	0.6	4.95	-4.19	-3.06	-13.53	-13.53				5.90	09-01-09
<i>Dow Jones-UBS Commodity Index TR</i>			5.49	-4.55	-3.70	-14.32	-14.32				2.76	
<i>EXCESS</i>			-0.54	0.36	0.64	0.79	0.79				3.14	
SCHRODER COMMODITY FUND	110.74	0.3	3.19	-6.72	-3.85	-11.62	-11.62				3.78	10-01-09
²¹ <i>MD/Schroder Custom Benchmark</i>			1.99	-9.87	-6.95	-14.51	-14.51				3.19	
<i>EXCESS</i>			1.20	3.15	3.10	2.89	2.89				0.59	
<i>Dow Jones-UBS Commodity Index TR</i>			5.49	-4.55	-3.70	-14.32	-14.32				2.26	
VERMILLION/CELADON COMMODITIES	204.81	0.6	5.38	-5.46	-7.53	-15.45	-15.45				1.70	04-01-10
<i>Dow Jones-UBS Commodity Index TR</i>			5.49	-4.55	-3.70	-14.32	-14.32				1.19	
<i>EXCESS</i>			-0.11	-0.91	-3.83	-1.13	-1.13				0.51	

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

Annual State Retirement and Pension System's Investment Overview

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
BLACKRIVER COMMODITY TRADING FUND	96.55	0.3	1.00	0.50	1.57	0.34	0.34				-1.63	11-01-10
BLACKROCK DJ-UBS COMMODITY INDEX	249.52	0.7	5.38	-4.66	-3.82						-3.52	10-01-11
<i>Dow Jones-UBS Commodity Index TR</i>			5.49	-4.55	-3.70						-3.37	
<i>EXCESS</i>			-0.11	-0.11	-0.12						-0.15	
ARBALET COMMODITY STRATEGIES FUND	42.83	0.1	-2.66								-2.66	06-01-12
<i>Dow Jones-UBS Commodity Index TR</i>			5.49								5.49	
<i>EXCESS</i>			-8.15								-8.15	
TOTAL COMMODITIES	918.07	2.5	4.16	-4.63	-4.13	-12.59	-12.59				3.11	09-01-09
<i>Dow Jones-UBS Commodity Index TR</i>			5.49	-4.55	-3.70	-14.32	-14.32				2.76	
<i>EXCESS</i>			-1.33	-0.08	-0.43	1.73	1.73				0.35	
TORTOISE CAPITAL DOMESTIC EQ	93.76	0.3	2.73	-3.67	-1.37	10.42	10.42				23.60	08-01-09
<i>S&P MLP Total Return Index</i>			3.27	-2.16	-0.29	7.72	7.72				22.78	
<i>EXCESS</i>			-0.54	-1.51	-1.08	2.70	2.70				0.82	
HARVEST FUND ADVISORS	89.70	0.2	3.03	-1.25	3.49	13.53	13.53				28.35	11-01-09
<i>S&P MLP Total Return Index</i>			3.27	-2.16	-0.29	7.72	7.72				23.36	
<i>EXCESS</i>			-0.24	0.91	3.78	5.81	5.81				4.99	
TOTAL MLP	183.47	0.5	2.88	-2.50	0.95	11.92	11.92				26.31	08-01-09
<i>S&P MLP Total Return Index</i>			3.27	-2.16	-0.29	7.72	7.72				22.78	
<i>EXCESS</i>			-0.39	-0.34	1.24	4.20	4.20				3.53	

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

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SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
22 TOTAL ENERGY FUNDS	296.28	0.8	0.00	9.26	10.88	24.57	24.57				15.75	01-01-10
TOTAL INFRASTRUCTURE	30.46	0.1	0.00	0.97	-0.02	0.92	0.92				2.71	10-01-09
TIMBER LP FUNDS	105.40	0.3	0.00	4.07	10.24	4.23	4.23				16.19	05-01-10
TOTAL REAL RETURN	3,709.20	10.0	0.78	1.04	2.07	4.57	4.57	9.86	8.04		6.51	02-01-06
23 CUSTOM REAL RETURN BENCHMARK			1.22	0.43	1.60	2.76	2.76	7.08	6.07		5.05	
EXCESS			-0.44	0.61	0.47	1.81	1.81	2.78	1.97		1.46	

Department of Legislative Services

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

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SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
PRIVATE EQUITY												
²⁴ TOTAL PRIVATE EQUITY	2,107.61	5.7	1.14	3.04	7.67	7.49	7.49	15.16	6.03	8.56	5.79	03-01-94
²⁵ Custom MD/SS PEI Index			1.14	3.04	5.71	3.76	3.76	15.21	4.17	10.44		
EXCESS			0.00	0.00	1.96	3.73	3.73	-0.05	1.86	-1.88		
RUSSELL 3000 + 300BPS			4.16	-2.42	10.92	6.95	6.95	20.19				

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

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STATE STREET

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SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
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ABSOLUTE RETURN

	BGI GLOBAL ASCENT	201.65	0.5	-0.82	-7.29	-1.32	-6.64	-6.64	1.70		1.71	04-01-08
26	<i>Custom Absolute Return Benchmark</i>			-0.38	-2.21	1.09	-4.40	-4.40	2.20		-1.96	
	<i>EXCESS</i>			-0.44	-5.08	-2.41	-2.24	-2.24	-0.50		3.67	
	BRIDGEWATER PURE ALPHA	463.92	1.3	-0.99	-1.12	-1.64	3.93	3.93	9.93		6.89	05-01-08
26	<i>Custom Absolute Return Benchmark</i>			-0.38	-2.21	1.09	-4.40	-4.40	2.20		-2.12	
	<i>EXCESS</i>			-0.61	1.09	-2.73	8.33	8.33	7.73		9.01	
	MELLON GLOBAL ALPHA II	192.02	0.5	0.16	-0.60	-1.50	-1.62	-1.62	4.20		0.21	07-01-08
26	<i>Custom Absolute Return Benchmark</i>			-0.38	-2.21	1.09	-4.40	-4.40	2.20		-2.47	
	<i>EXCESS</i>			0.54	1.61	-2.59	2.78	2.78	2.00		2.68	
	ROCK CREEK POTOMAC FUND LTD	411.19	1.1	-0.40	-2.69	2.51	-2.51	-2.51			2.04	02-01-10
	<i>HFRI Fund of Funds Composite Index</i>			-0.38	-2.21	1.09	-4.40	-4.40			0.46	
	<i>EXCESS</i>			-0.02	-0.48	1.42	1.89	1.89			1.58	
	DGAM DIVERSIFIED STRATEGIES FUND	306.31	0.8	0.03	0.31	3.11	1.89	1.89			2.41	01-01-11
	<i>HFRI Fund of Funds Composite Index</i>			-0.38	-2.21	1.09	-4.40	-4.40			-3.16	
	<i>EXCESS</i>			0.41	2.52	2.02	6.29	6.29			5.57	
27	PIMCO REAL RETURN ALL ASSET	307.71	0.8	2.73	-0.66	5.50	3.07	3.07	11.27		5.15	03-01-08
28	<i>Custom PIMCO All Asset Index</i>			0.29	1.29	4.22	6.77	6.77	10.62		4.99	
	<i>EXCESS</i>			2.44	-1.95	1.28	-3.70	-3.70	0.65		0.16	

Department of Legislative Services

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State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

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STATE STREET

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27 BRIDGEWATER ALL WEATHER	652.61	1.8	0.58	3.49	7.31	17.65	17.65	17.44			17.44	07-01-09
29 Custom Bridgewater Benchmark			0.53	1.61	3.23	6.55	6.55	9.59			9.59	
EXCESS			0.05	1.88	4.08	11.10	11.10	7.85			7.85	
TOTAL ABSOLUTE RETURN	2,535.42	6.8	0.17	-0.49	2.71	3.68	3.68	6.54			4.27	04-01-08
26 Custom Absolute Return Benchmark			-0.38	-2.21	1.09	-4.40	-4.40	2.20			-1.96	
EXCESS			0.55	1.72	1.62	8.08	8.08	4.34			6.23	

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

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STATE STREET

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SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
REAL ESTATE												
LASALLE ADVISORS REIT	427.36	1.2	5.43	3.52	14.55	12.85	12.85	33.98	0.97	10.49		04-01-93
³⁰ LASALLE REIT BENCHMARK			5.55	3.54	14.85	12.56	12.56	33.59	1.85	10.31	10.18	
EXCESS			-0.12	-0.02	-0.30	0.29	0.29	0.39	-0.88	0.18		
MORGAN STANLEY INVESTMENT MGMT	419.94	1.1	7.29	-0.18	15.87	-7.93	-7.93	8.94	-5.10		-2.19	11-01-06
³¹ MSIM Cus FTSE EPRA NAREIT Dev ex US(Ne			7.35	0.48	15.16	-5.74	-5.74	11.13	-5.89		-2.71	
EXCESS			-0.06	-0.66	0.71	-2.19	-2.19	-2.19	0.79		0.52	
FTSE EPRA/NAREIT Developed x US TR			7.39	0.73	15.53	-5.37	-5.37	11.53	-5.56		-2.38	
FTSE EPRA/NAREIT Developed x US (Net)			7.35	0.48	15.17	-5.75	-5.75	11.13	-5.90		-2.71	
RECORD CURRENCY MANAGEMENT-REITS	-0.21	-0.0										04-01-11
TOTAL REITS	847.10	2.3	5.86	1.67	15.22	1.48	1.48	19.10	-2.20	9.16		04-01-94
TOTAL PRIVATE REAL ESTATE	1,517.17	4.1	0.91	1.98	4.43	12.65	12.65	6.00	-0.90	7.25	8.57	03-01-94
NCREIF PROPERTY INDEX QTR LAG			2.59	2.59	5.63	13.41	13.41	5.96	2.88	8.17	9.15	
EXCESS			-1.68	-0.61	-1.20	-0.76	-0.76	0.04	-3.78	-0.92	-0.58	
TOTAL REAL ESTATE	2,364.27	6.4	2.64	1.91	8.49	8.73	8.73	11.56	-1.60	8.22	5.92	07-01-87
³² REAL ESTATE CUSTOM INDEX			3.93	2.32	9.09	9.92	9.92	12.14	0.87	8.63	7.65	
EXCESS			-1.29	-0.41	-0.60	-1.19	-1.19	-0.58	-2.47	-0.41	-1.73	
NCREIF PROPERTY INDEX QTR LAG			2.59	2.59	5.63	13.41	13.41	5.96	2.88	8.17		
WILSHIRE RESI			5.55	3.54	14.85	12.56	12.56	33.59	1.85	10.31		
³¹ MSIM Cus FTSE EPRA NAREIT Dev ex US(Ne			7.35	0.48	15.16	-5.74	-5.74	11.13	-5.89			

Department of Legislative Services

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Returns for periods prior to 7/1/2008 are Gross of Fees

Provided by State Street Investment Analytics

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

Annual State Retirement and Pension System's Investment Overview

SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
CASH												
MARYLAND CASH ACCOUNT	642.48	1.7	0.64	1.18	2.14	5.30	5.30	3.85				09-01-94
CITIGROUP 3 MONTH T-BILL			0.01	0.02	0.03	0.04	0.04	0.10	0.87	1.77	3.15	
EXCESS			0.63	1.16	2.11	5.26	5.26	3.75				
SELF LIQUIDATING ACCOUNT	3.86	0.0	0.13	2.94	5.03	19.98	19.98	7.99	28.51	16.70		06-01-84
CITIGROUP 3 MONTH T-BILL			0.01	0.02	0.03	0.04	0.04	0.10	0.87	1.77	4.25	
EXCESS			0.12	2.92	5.00	19.94	19.94	7.89	27.64	14.93		
TOTAL CASH AGGREGATE	646.34	1.7	0.64	1.17	2.12	5.32	5.32	3.74			3.65	07-01-08
CITIGROUP 3 MONTH T-BILL			0.01	0.02	0.03	0.04	0.04	0.10			0.27	
EXCESS			0.63	1.15	2.09	5.28	5.28	3.64			3.38	

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

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SUMMARY OF PERFORMANCE

	MILLIONS	% Total	1 MO	3 MO	YTD	FYTD	1 YR	3 YRS	5 YRS	10 YRS	INCEP	Inc Date
TOTAL PLAN												
TOTAL PLAN	37,072.61	100.0	2.23	-1.53	5.42	0.36	0.36	11.17	0.78	5.89	8.15	07-01-86
33 TOTAL PLAN POLICY INDEX			2.61	-1.63	4.64	0.08	0.08	10.37	0.65	5.94		
EXCESS			-0.38	0.10	0.78	0.28	0.28	0.80	0.13	-0.05		
34 TOTAL PLAN CUSTOM STATIC INDEX			2.57	-1.11	4.81	1.10	1.10	10.20				

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Returns for periods prior to 7/1/2008 are Gross of Fees

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State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

Annual State Retirement and Pension System's Investment Overview

SUMMARY OF PERFORMANCE

Endnotes

- 1 Since 10/1/2010: 100% Russell 3000
Prior to 10/1/2010: 100% Russell 2500 Growth
- 2 Benchmark is dynamically calculated using Beginning Market Value weights of the underlying portfolios and their benchmarks
- 3 Since 11/1/2008: Benchmark is dynamically calculated using Average Balance (BMV+ Weighted Net Cash Flows) weights of the underlying portfolios and their corresponding indices. From 9/1/2008 - 10/31/2008: Benchmark was dynamically calculated based on the beginning weights of the underlying portfolios and their corresponding indices From 5/1/2008 - 8/31/2008: 11.1% S&P 500; 13.3% Russell 1000 Value; 33.3% Russell 1000 Growth; 16.7% Russell Mid Cap Growth; 25.6% Russell 2000 Value 11/1/2007 - 4/30/2008: 10.9% S&P 500; 13.1% Russell 1000 Value; 33.3% Russell 1000 Growth; 17.2% Russell Mid Cap Growth; 25.6 Russell 2000 Value Prior to 11/1/2007: 11% S&P 500; 13.1% Russell 1000 Value; 32% Russell 1000 Growth; 16.5% Russell Mid Cap Growth; 27.4% Russell 2000 Value
- 4 7/1/2008: The US Emerging Managers were added to the aggregate
- 5 Since 7/1/2008: 100% Russell 3000 From 1/1/2005 to 6/30/2008: 100% Dow Jones Willshire 5000 Prior to 1/1/2005: 100% Russell 3000
- 6 Since 09/01/2009: 100% MSCI EAFE + CANADA (NET)
From 01/01/2005 to 08/31/2009: 100% MSCI AC WORLD ex US (NET)
From 05/01/2003 to 12/31/2004: 100% MSCI EAFE (NET)

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

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SUMMARY OF PERFORMANCE

Endnotes - continued

- 7 Since 11/1/2008: Benchmark is dynamically calculated using Average Balance (BMV+ Weighted Net Cash Flows) weights Prior to 11/1/2008: 100% MSCI EAFE (net)
- 8 Since 7/1/2010: 100% MSCI All Country World ex. U.S.
From 7/1/2009 to 6/30/2010: 100% MSCI All Country World ex. U.S. IMI Net
From 1/1/2003 to 6/30/2009: 100% MSCI All Country World ex. U.S.
Prior to 1/12/2003: 100% MSCI EAFE
- 9 7/1/2008: International Equity Emerging Managers were added to the aggregate.
- 10 Since 7/1/2010: 100% MSCI AC WORLD NET
From 7/1/2009 to 6/30/2010: 100% MSCI ACWI IMI NET
Prior to 7/1/2009: 100% MSCI AC WORLD NET
- 11 Benchmark is dynamically calculated using the weights of the US Equity, International Equity, and Global Equity aggregates and the corresponding asset class benchmarks
- 12 Since 7/1/2009: 100% BC Aggregate From 11/1/2003 - 6/30/2009: 100% BC US Universal Prior to 11/1/2003: 100% Citigroup BIG

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Returns for periods prior to 7/1/2008 are Gross of Fees

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

Annual State Retirement and Pension System's Investment Overview

SUMMARY OF PERFORMANCE

Endnotes - continued

- 13 Since 7/1/2009: BC Aggregate Prior to 7/1/2009: BC U.S. Universal Index
- 14 Since 7/1/2010: 100% BC Global Aggregate Hedged
Prior to 7/1/2010: 100% BC Global Aggregate Unhedged
- 15 As of 1/1/2010 all high yield and convertible managers were moved out of the Fixed Income asset class and into the Credit/Debt asset class. Historical returns for high yield and convertible managers remain in Fixed Income composite.
- 16 Benchmark is dynamically calculated based on the Average Balance (BMV + Weighted Net Cash Flows) weights of the underlying portfolios and their corresponding indices
- 17 Since 7/1/2010: 80% BC Aggregate, 20% BC Global Bond Aggregate Hedged
1/1/2010 - 6/30/2010: 80% BC Aggregate, 20% BC Global Bond Aggregate Unhedged
7/1/2009 - 12/31/2009: Benchmark is dynamically calculated using Beginning Market Value weights of the underlying portfolios and their benchmarks
Prior to 7/1/2009: Benchmark is BC US Universal.
- 18 50% S&P/LSTA & 50% B of A ML High Yield Master II

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

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SUMMARY OF PERFORMANCE

Endnotes - continued

- 19 Prior to 2010, assets were included in Private Equity Asset Class.
- 20 Since 1/1/2010: 50% BC Credit / 50% BC High Yield Prior to 1/1/2010: 75% BC Credit / 25% BC High Yield
- 21 25% Rogers International Commodities Index / 25% RJ/CRB Total Return Series / 25% Dow Jones-UBS Commodity Total Return Index / 25% S&P GSCI Total Return Index
- 22 Prior to Jan 2010, assets were included in Private Equity Asset Class.
- 23 Since 7/1/2011: 30% - DJ UBS Commodities Index (Total Return), 10% - CPI + 5%; 8% Max , 60% - 65% BC US TIPS Index/35% BC Global Inflation Linked (USD Hedged) Index
From 7/1/2009 - 6/30/2011: 20% - DJ UBS Commodities Index (Total Return), 20% - CPI + 5%; 8% Max , 60% - 65% BC US TIPS Index/35% BC Global Inflation Linked (USD Hedged) Index
7/1/2008 - 6/30/2009: Benchmark is dynamically calculated using Beginning Market Value weights of the underlying portfolios and their benchmarks Prior to 7/1/2008: 100% Barclays US TIPS Index
- 24 Prior to 2010, Private Equity also includes Total Distressed Debt, Total Mezzanine Debt and Total Energy Fund.

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET

Annual State Retirement and Pension System's Investment Overview

SUMMARY OF PERFORMANCE

Endnotes - continued

- 25 March return is the Maryland Total Private Equity aggregate 3 month return until the State Street Private Equity Index becomes available.
- 26 As of 7/1/2008 benchmark is HFRI Fund of Funds index. Prior to 7/1/2008 benchmark was the Citigroup 3-Month T-bill + 500 bps.
- 27 Prior to 7/1/2011 this portfolio was included in the Real Return Asset Class
- 28 Since 7/1/2011 100% CPI + 5%. From 7/1/2008 through 6/30/2011: 35% MSCI AC World (net) index / 65% Barclays Multiverse index Prior to 7/1/2008: 100% Barclays TIPS 1-10 Year
- 29 Since 7/1/2011 Benchmark is composed of 100% 3 month T-Bill + 6.5%
From 7/1/2009 - 6/30/2011 Benchmark is composed of 75% Barclays Capital US TIPS , 10% DJ-AIG Commodities Total Return Index and 15% MSCI ACWI.
- 30 Since 5/1/1999: 100% Wilshire RESI Prior to 5/1/1999: 100% NAREIT Equity Share Price Index
- 31 Since 11/2007 benchmark is 100% FTSE EPRA NAREIT Developed Ex US (Net) index. Prior to 11/2007, the net version of the index was calculated by and provided to State Street by MSIM

State Retirement Agency of Maryland

RATES OF RETURN - Net Manager Fees

PERIODS ENDING - June 30, 2012



STATE STREET⁴²

SUMMARY OF PERFORMANCE

Endnotes - continued

- 32 Since 7/1/2008, a dynamic blend of the Wilshire RESI, NCREIF Property (one qtr lag), and the MSIM Custom EPRA/NAREIT Global ex US Prior to 7/1/2008, 50% Wilshire RESI & 50% NCREIF Property (one qtr lag)
- 33 Since 7/1/2008: Calculated monthly using transitional weights and asset class benchmarks. Prior to 7/1/2008: MSRA TOTAL PLAN STATIC POLICY
- 34 Calculated monthly using the strategic target weights and asset class benchmarks

Department of Legislative Services

Comparison of Retiree Health Benefits in the Teachers' and Employees' Systems and the Optional Retirement Program

**Presentation to the
Joint Committee on Pensions**

**Department of Legislative Services
Office of Policy Analysis
Annapolis, Maryland**

October 31, 2012

2012 Joint Chairmen's Report

- The 2012 *Joint Chairmen's Report* (JCR) requested the Joint Committee on Pensions to examine the retiree health benefits of the Optional Retirement Program (ORP) because of differences in retiree health benefits for certain State employees compared to the ORP employees. The JCR requested the committee to make any policy recommendations deemed necessary.

Optional Retirement Program

- In 1975, the State established ORP, which is a defined contribution program for certain eligible employees of public higher education institutions.
- Eligible employees are:
 - members of the faculty of the University System of Maryland, Morgan State University, St. Mary's College of Maryland, or a community college;
 - certain professional employees of the Maryland Higher Education Commission, community colleges, Morgan State University, and St. Mary's College of Maryland; and
 - nonclassified employees of the University System of Maryland.

Optional Retirement Program (Cont.)

- Eligible public higher education employees must elect to participate in either:
 - the ORP; or
 - the Teachers' Pension System (TPS) or the Employees' Pension System (EPS).
- The choice to join the ORP is a one-time, irrevocable decision that must be made within one year of becoming eligible to join the ORP.

Legislative History of ORP Retiree Health Benefits (1975)

- The ORP was established by Chapter 556 of 1975.
- The legislation did not include any provisions regarding retiree health benefits for ORP members.
- Therefore, when the ORP was first established, ORP members were not eligible for retiree health benefits.

Legislative History of ORP Retiree Health Benefits (1984)

- The ORP was amended by Chapter 290 of 1984.
 - The legislation established eligibility for ORP employees, spouses, and children to receive retiree health benefits.
 - Future ORP retirees were authorized to participate in the State's health insurance program and the retirees were eligible to receive:
 - a pro-rated health insurance subsidy if the retiree had at least 5 years of service, but less than 16 years of service; or
 - the maximum health insurance subsidy if the retiree had at least 16 years of service.
 - ORP spouses and children were also authorized to participate in the State's health insurance program; however, they were not eligible for a subsidy, so the retiree had to pay "all costs for the coverage for the spouse or children."

Legislative History of ORP Retiree Health Benefits (1993)

- The ORP was amended again by Chapter 479 of 1993.
 - The legislation provided a State retiree health insurance subsidy for ORP spouses and children.
 - If the ORP retiree had at least 25 years of service, the retiree's spouse and children were eligible to receive the maximum State retiree health insurance subsidy (but not eligible for a pro-rated subsidy).

Comparison Between TPS/EPS and ORP

Retiree Health Benefits Maximum Subsidy – Retiree

	TPS/EPS	ORP
Retiree Health Benefits – <u>Maximum</u> State Subsidy for Health Insurance Criteria – <u>Retiree Only</u>	<p><i>If hired prior to 7/1/11, must:</i></p> <ul style="list-style-type: none"> • Leave State service with at least 16 years of creditable service; or • Retire directly from State service with a disability retirement; or • Have retired from State service before 7/1/84. <p><i>If hired on or after 7/1/11, must:</i></p> <ul style="list-style-type: none"> • Leave State service with at least 25 years of creditable service; or • Retire directly from State service with a disability retirement. 	<p><i>If hired prior to 7/1/11, must</i></p> <ul style="list-style-type: none"> • Retire with at least 16 years of creditable service with contributions to a Maryland ORP account; and • Retire directly from a Maryland higher education institution. <p><i>If hired on or after 7/1/11 must:</i></p> <ul style="list-style-type: none"> • Retire with at least 25 years of creditable service with contributions to a Maryland ORP account; and • Retire directly from a Maryland higher education institution. <p>ORP does not have disability retirement.</p>

Comparison Between TPS/EPS and ORP Retiree Health Benefits Pro-rated Subsidy – Retiree

	TPS/EPS	ORP
Retiree Health Benefits – <u>Pro-rated State Subsidy for Health Insurance Criteria – Retiree Only</u>	<p><i>If hired prior to 7/1/11, must:</i></p> <ul style="list-style-type: none"> •Retire directly from State service with at least 5 years of creditable service, but less than 16 years. •For example, with 10 years of service, retiree would receive 10/16 of the maximum State subsidy. <p><i>If hired on or after 7/1/11, must:</i></p> <ul style="list-style-type: none"> •Retire directly from State service with at least 10 years of creditable service, but less than 25 years. •For example, with 15 years of service, retiree would receive 15/25 of the maximum State subsidy. 	<p><i>If hired prior to 7/1/11, must:</i></p> <ul style="list-style-type: none"> • Have at least 5 years of creditable service, but less than 16 years, with contributions to a Maryland ORP account; <i>and</i> •Retire directly from a Maryland higher education institution. <p><i>If hired on or after 7/1/11, must:</i></p> <ul style="list-style-type: none"> •Have at least 10 years of creditable service, but less than 25 years, with contributions to a Maryland ORP account; <i>and</i> •Retire directly from a Maryland higher education institution.

Comparison Between TPS/EPS and ORP Retiree Health Benefits Maximum Subsidy – Dependents

	TPS/EPS	ORP
Retiree Health Benefits – <u>Maximum</u> State Subsidy for Health Insurance Criteria – <u>Dependents</u>	<p><i>Dependents receive maximum State subsidy if retiree meets requirements for maximum State subsidy, which is 16 years or 25 years, depending on date of hire.</i></p> <p><i>If hired prior to 7/1/11, must:</i></p> <ul style="list-style-type: none"> • Leave State service with at least 16 years of creditable service; or • Retire directly from State service with a disability retirement; or • Have retired from State service before 7/1/84. <p><i>If hired on or after 7/1/11, must:</i></p> <ul style="list-style-type: none"> • Leave State service with at least 25 years of creditable service; or • Retire directly from State service with a disability retirement. 	<p><i>Dependents receive maximum State subsidy only at 25 years, regardless of date of hire.</i></p> <p><i>Subsidy not available at 16 years.</i></p> <p><i>ORP employee must:</i></p> <ul style="list-style-type: none"> • Retire with at least 25 years of creditable service with contributions to a Maryland ORP account; and • Retire directly from a Maryland higher education institution.

Comparison Between TPS/EPS and ORP Retiree Health Benefits Maximum Subsidy – Dependents (Cont.)

	TPS/EPS	ORP
Retiree Health Benefits – <u>Pro-rated</u> State Subsidy for Health Insurance Criteria – <u>Dependents</u>	<p><i>Dependents receive pro-rated State subsidy if retiree meets requirements for pro-rated State subsidy.</i></p> <p><i>If hired prior to 7/1/11, must:</i></p> <ul style="list-style-type: none"> • Retire directly from State service with at least 5 years of creditable service, but less than 16 years. • For example, with 10 years of service, retiree would receive 10/16 of the maximum State subsidy. <p><i>If hired on or after 7/1/11, must:</i></p> <ul style="list-style-type: none"> • Retire directly from State service with at least 10 years of creditable service, but less than 25 years. • For example, with 15 years of service, retiree would receive 15/25 of the maximum State subsidy. 	<p><i>There is no pro-rated State subsidy for dependents of ORP retirees.</i></p>

Additional Comparisons Between TPS/EPS and ORP

TPS/EPS	ORP
Defined benefit plan that provides a determinable benefit based upon salary and service.	Defined contribution plan that provides a benefit based upon the accumulated account balance.
Mandatory employee contribution is 7% of salary.	No mandatory employee contribution; employees are prohibited from contributing to the ORP account
Vesting period before eligibility. If hired prior to 7/1/11, vested with 5 years of service. If hired on or after 7/1/11, vested with 10 years of service.	Immediate vesting in the ORP account balance. Benefits may begin upon separation from employment; however, a federal tax penalty may apply.
State bears the investment risk.	Employee bears the investment risk.
TPS/EPS benefits are transferrable among other defined benefit governmental plans within the State of Maryland.	ORP accounts are transferrable to a broad array of other employers' retirement programs.
State contribution rate for fiscal 2013 is 12.29% for the Employees' Combined System and 13.29% for the Teachers' Combined Systems.	State contribution rate is 7.25%.
Retiree health insurance subsidy available for dependents beginning as early as 5 years of service on a pro-rated basis for employees hired prior to 7/1/11.	Retiree health insurance subsidy not available for dependents until at least 25 years of service.

State Subsidy Costs for Retirees Only Compared to Retirees Plus Dependents

	Maximum Annual State Subsidy	<u>Additional</u> Annual State Cost for Dependents – Maximum Subsidy	Pro-rated Annual State Subsidy 1/16	<u>Additional</u> Annual State Cost for Dependents – Pro-rated Subsidy
Retiree Only	\$4,441.92	\$0.00	\$277.62	\$0.00
Retiree + Spouse	7,995.24	3,553.32	499.70	222.08
Retiree + Family	11,105.04	6,663.12	694.07	416.45

Source: Department of Budget and Management; CareFirst PPO Annual Costs for Retiree under age 65

Next Steps?

State Retirement and Pension System Funding Study

**Presented to the
Joint Committee on Pensions**

**Department of Legislative Services
Office of Policy Analysis
Annapolis, Maryland**

November 2012

State Retirement and Pension System Funding Study

Background

During the 2011 interim, the Board of Trustees for the State Retirement and Pension System (SRPS) made a proposal to the Joint Committee on Pensions (JCP) to change the amortization of unfunded pension liabilities and to phase out the corridor funding method. The board indicated that the proposal would return the system to an actuarially sound funding methodology. In addition, the board also noted that other components of its proposal related specifically to changes to the amortization policy of the system would significantly reduce the size of employer contributions to the pension system going forward. JCP has been supportive of the board's desire to move away from the corridor funding system, but the high cost of doing so has previously made any transition prohibitive. However, the new liability outlook provided by the 2011 pension reforms provides an opportunity to rework the funding policy. The 2012 *Joint Chairmen's Report* requires that the Department of Legislative Services (DLS) and the State Retirement Agency (SRA) examine the funding method, amortization of unfunded liabilities, and the actuarial assumptions of the SRPS.

Current Funding Policy

Corridor Funding Method

Chapter 440 of 2002 enacted a change to the funding of the SRPS with respect to the Teachers' and Employees' systems. The funding method, referred to as "corridor," made changes to the way in which the State's contribution rates to the Teachers' and Employees' systems are determined. The three smaller plans, the State Police Retirement System, the Judges' Retirement System, and the Law Enforcement Officers' Pension System, and the "municipal pool" of participating local units in the Employees' System are not subject to the corridor method. Under the corridor method, the State contribution rate for those systems remains static as long as the system has a funded status between 90 and 110%; the contribution rate for a given fiscal year is the same rate as it was for the prior fiscal year. When the funded status falls outside this corridor, the contribution rate is not the actuarially determined rate for that fiscal year but rather the rate used in the prior fiscal year plus 20% of the difference between the actuarial rate and the prior year's rate. Mathematically, this is equivalent to using 80% of the prior year's rate and 20% of the actuarial rate.

The corridor method began by freezing the contribution rates for the State Employees' and Teachers' System at fiscal 2002 levels, as long as the systems posted funded ratios between 90 and 110%. The timing of the corridor's implementation in fiscal 2002 was somewhat advantageous to the State in terms of contribution requirements given the investment climate that

was to ensue in the mid-term. The impact of the fiscal 2001 and 2002 investment losses that had contributed to the implementation of the corridor methodology was reduced by positive investment experience over the subsequent five years. Reports from the SRPS actuary, Gabriel Roeder Smith & Company, indicated that over the eight-year period from fiscal 2003 to 2010, the corridor underfunded the system by \$938 million, a significant, but not overwhelming, amount given the \$34.7 billion of actuarial assets held by the system at the end of fiscal 2010. To put these figures in perspective, the system's investment losses from fiscal 2009 alone underfunded the system in that one year by \$10.2 billion on a market basis and \$7.6 billion in actuarial terms. Running these large losses through the corridor rate calculations only exacerbates system underfunding, making the corridor smoothing method exponentially more expensive.

The main obstacle to the legislature for exiting the corridor methodology has long been the cost. Providing the funds to repay the totals underfunded in the past has been expensive, amounting to nearly hundreds of millions of dollars annually in times of constrained budgetary resources. Fortunately, the reduction of the liability structure stemming from the 2011 pension reforms has created an opportunity to transition by significantly bringing down current contribution rates. The board's 2011 proposal cushioned the potential impact by phasing out the corridor methodology over 10 years, repaying the past underfunding over an extended timeframe. The cost of the corridor will continue to grow unless a phase out is undertaken in the near future, so prolonged delays will result in increased expenses to the State.

The corridor funding method has had the effect of reducing the annual employer contribution for the Teachers' and Employees' systems below the actuarially required rate, though it has mitigated short-term spikes in contribution rates resulting from unprecedented poor market conditions since its enactment. However, the result of the underfunding and severe investment losses of 2008 and 2009 is catching up, resulting in escalating contribution rates under the corridor methodology for Teachers' and State Employees' Systems. Even with the reforms to benefits under Chapter 397 of 2011, the employer contribution rate under the corridor methodology is expected to reach approximately \$2.5 billion in five years, and begins to exceed \$3.0 billion in fiscal 2024 under the present funding structure, and is expected to remain over \$3.0 billion for the following 12 years. By the time the system's funded status hits 80% in fiscal 2025, the projected contribution is expected to remain over \$3.0 billion for the next 11 years. **Appendix 1** shows the projections for annual employer contributions under the corridor funding method and existing actuarial assumptions.

Additionally, once the system hits 90% funded status, the contribution rates for subsequent years remain the same while the funded status remains within the corridor. This results in the dollar amount of each yearly contribution continuing to increase each year the system is above 90% but below 110% funded status. Because the rate gets locked, the benefits of increased funded status are not reflected in the yearly employer contribution as funded status increases. Additionally, losses that may be sustained while within the corridor are exacerbated. When the system funded status fell during the 2000s, the yearly contribution rates were not reflective of the declining funded status.

Amortization of Unfunded Liabilities

To offset the impact of the switch, the board's proposal alters the amortization policy employed by the SRPS for its liabilities. Currently, the SRPS has two bases that must be amortized: the unfunded liability base extant as of July 2000 and the amount that has emerged in subsequent years. The pre-July 2000 portion is being amortized over a 20-year closed period. The liabilities for all subsequent years are amortized on separate 25-year closed periods with each year creating a new base. A closed amortization period sums all outstanding liabilities and sets an end date when all the liabilities included in the base must be paid off, including new liabilities generated in each year. The proposal suggested a switch to a new, unified 25-year closed amortization base for all past liability sets, essentially beginning the financing of past obligations anew. The savings associated with a change in the amortization make it possible to phase-out the corridor method while also reducing the employer contribution to a more manageable amount.

The prime reason that the board proposal is able to move away from the corridor method is that it leverages changes to the amortization schedules, as described above. This reamortization offsets the increased cost of paying a greater share of the actuarially determined rate each year by spreading payments due in the near-term under the current amortization structure across a new 25-year unified base. This change is powerful enough to produce a net reduction in employer contribution requirements, even as additional funding to eliminate the corridor system is provided. It has the added advantage of resolving an impending problem set to occur in the State Police system. When the pre-2000 amortization base reaches the end of its closed period in 2020, the employer contribution rates, which are already over 60% of payroll, will double. Such an outcome would effectively make the State's annual pension contribution for each police officer greater than his or her actual salary. Rolling these liabilities into a new base allows a gradual resolution of this system's required payment schedule.

Actuarial Assumptions

Another component of system funding is the actuarial assumptions used in the valuation of the system and for determining employer contributions. The system's actuarial assumptions create the rule set for how the SRPS values its assets and liabilities. These assumptions help determine the amount that the State is required to contribute in each year to meet its obligations. While both the corridor methodology and the amortization policy are dictated by statute, the actuarial assumptions are, by statute, exclusively under the purview of the board, and JCP does not have an opportunity to opine on the merit of alternative assumption levels. As such, any legislative changes made to the system funding would be guided by projections based on the current set of actuarial assumptions. Those assumptions could change as the board performs its statutory duty to regularly assess the actuarial assumptions and adjust them if warranted by fiduciary responsibilities.

At least every five years, the board is required to conduct an actuarial study of the experience of the system, and if necessary, adopt appropriate changes to align the actuarial

assumptions with reasonable expectations based on system experience. During the 2012 interim, the board's actuary presented an update on the system's experience study. The actuarial assumptions consist of demographic and economic assumptions.

The demographic assumptions are factors based on what happens to people, such as life expectancy, rates of retirement and disability, and payroll. During the 2012 interim, the board updated its demographic assumptions to reflect the experience over that past four years. This change has the effect of increasing the employer contribution rates. The effect of the demographic assumption changes adopted by the board will add \$24.3 million to the employer contribution for fiscal 2014. The board acknowledged the negative effect that this action had on the State budget, but took the position that it was bound by fiduciary duties to recognize changes in the system demographics and update the assumptions accordingly.

The other element of system funding which the board has control over are the economic assumptions. Economic assumptions are factors based on what happens to money. Perhaps the most powerful assumption is the assumed rate of return on invested assets. This figure, currently set at 7.75% annually, is used to discount the system's assets and, therefore, directly impacts the annual contributions the State must pay into the pension trust in its role as employer. The higher the assumed discounting rate, the higher the value the system's assets are projected to hold in the future. Lowering the rate conversely increases how much the State must contribute as assets held in trust are assumed to grow by a lower rate over time. Because a 0.25% change can require an additional \$100 million annually in State funding, the effect of an adjustment in the rate could be mitigated by addressing the system funding method and amortization policies.

The last time the board altered the assumed rate of return was July 1, 2004, at which time it lowered the rate from 8.0 to 7.75%. Prior to this, the board had not altered the rate since July 1, 1998, when the rate was increased from 7.5 to 8.0%. At that time, increasing the actuarial rate of return to 8.0% had the effect of lowering the system's unfunded liabilities by approximately \$1.7 billion which offset the increase in liabilities resulting from the enactment of the 1998 pension enhancement.

The increasing maturity of the system indicates that there is a steadily growing proportion of retirees to active employees, which would justify a downward movement of the rate of return. As a pension system matures, inflows from member contributions are gradually subsumed by outflows in the form of benefit payments. This trend suggests that the assumed rate of return should fall as the system moves into less risky assets that have a better risk-profile match to the State's liability structure.

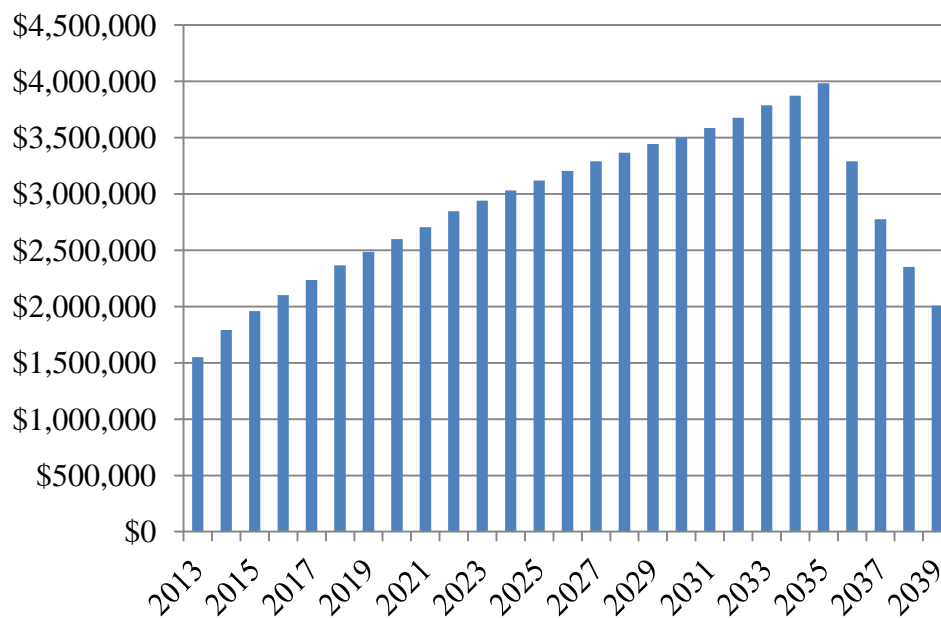
The assumptions for inflation can also have a significant impact on the employer's contribution. A reduction in the inflation assumption would result in a decrease in the employer's contributions, while a reduction in the investment return assumption would result in an increase in the employer's contributions. Over the interim, the board considered making changes to the current inflation assumption of 3.0%, to reduce it to either 2.75 or 2.8% with corresponding reductions in the assumed rate of return. The board decided to maintain the

current assumptions of 3.0% inflation and an investment return assumption of 7.75% but stated that it would revisit the discussion the following year for the 2013 system valuation.

Current System Projections

Exhibit 1 shows the projections for the current funding of the combined systems. The contribution rate for fiscal 2014 includes the reinvested savings overpayment of \$300 million for a total contribution of \$1.792 billion. The reinvestment overpayment for fiscal 2013 was \$190 million.

Exhibit 1
Current Funding
Fiscal 2013-2039
(\$ in Thousands)



Source: Gabriel Roeder Smith & Company, and State Retirement Agency

When compared to the contribution for fiscal 2014, employer contributions will have increased by 74.0% when the system reaches 80.0% funded status in fiscal 2025. Under the current system, the contribution rate as a percentage of payroll, peaks in fiscal 2022 at 22.75%. When the system reaches 100.0% funded status under the current funding policies and assumptions in fiscal 2033, the contribution is projected to be \$3.786 billion. The highest single year contribution amount is projected for fiscal 2035 at \$3.982 billion when the system is at 108.0% funding.

2011 Board of Trustees Proposal

During the 2011 interim, the board presented a proposal to JCP to phase out the corridor method over an 8-year period. The plan suggested a 10% annual switch, so that the 80% prior rate and 20% actuarial rate would be changed to 70% prior rate and 30% actuarial rate for the first year of the phase out, and so on. Under that proposal, the actuarial rate would represent 100% of the total, and the corridor would be eliminated by 2021. The proposal also included a change in the amortization of unfunded liabilities by amortizing all unfunded liabilities under a 25-year closed amortization schedule. At the end of the 25-year period, all unfunded liabilities would be paid off, and the system would be 100% funded. The proposal indicated the potential for substantial reductions in employer contributions. However, JCP and the budget committees had concerns that not knowing what possible changes to the actuarial assumptions might be considered or adopted by the board, it would be prudent to defer an action to study the effects of potential changes affecting the funding of the system. Also, there were other concerns expressed, as detailed below.

Slower Move to 2011 Reform Funding Targets

Currently, the system is projected to reach 80% funded status in 2023 and 100% funded status in 2031. One of the concerns with the board's 2011 proposal was that the State's funding goal in reaching 100% funded status would be delayed compared to the current methodology. The delay is a function of the lower annual contribution that the proposal requires.

Increased Volatility from Corridor Phaseout and New Amortization Policy

Finally, the stability in contribution rates provided by the corridor will be removed. While the phasing in of the change and the improved funded status associated with the reforms should mitigate the extent of potential swings, State contribution rates will be more exposed to single-year swings than is currently the case. For example, market results that do not meet the actuarially assumed rate of return, either by falling short or exceeding that target will not be mitigated by the effect of the corridor methodology. Similarly, while beneficial because an end date is set on repayment of all current and to-be-accrued liabilities, a single 25-year closed period is more subject to swings from missed actuarial assumptions from an annual contribution standpoint. This volatility is especially true in terms of the investment return assumption and grows as the end of the closed period approaches. However, pension systems typically adjust their funding policy as they approach the end of a closed amortization schedule.

Joint Study Proposal

Over the interim, DLS and SRA requested the system actuary to run projections based on the structure of the board's prior proposal and also to account for changes in the demographic

assumptions adopted by the board as well as potential economic assumption changes. Under the change to the amortization, all current unfunded liabilities would be amortized over a 25-year closed period. At the end of the 25-year period, all unfunded liabilities are expected to be paid off, with the system at 100% funded status.

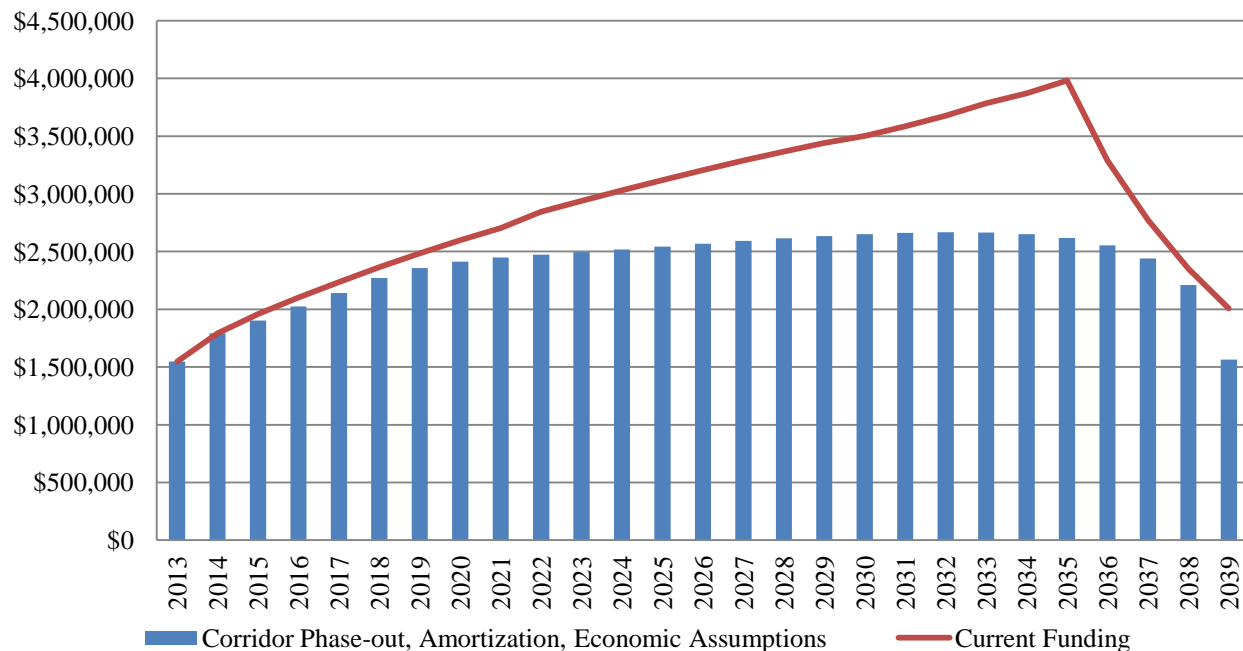
The corridor method would be phased out over a 10-year period. The corridor currently requires the prior year's rate plus 20% of the difference between the prior year's rate and the actuarial rate. The first year of the 10-year phaseout would use the prior year's rate, plus 28% of the difference between the prior year's rate and the actuarial rate. After 10 years, the contribution rate would be the actuarially determined rate.

As previously discussed, the board updated the demographic assumptions over the interim, and these are incorporated into the projections run by the actuary. The board did not make any changes to the economic assumptions but did indicate that the matter would be taken up again for the 2013 valuation. In anticipation of any potential changes to the economic assumptions, the projections assumed that for the fiscal 2015 budget that the board would have lowered the inflation assumption to 2.80% to coincide with changes made by Social Security. Additionally, the projections assume that the board would lower the investment return assumption from 7.75 to 7.55% by five basis points over a four-year period. The projections also assume that any legislative changes to phase out the corridor methodology and the change the amortization would begin in fiscal 2015, to coincide with any changes to the economic assumptions.

Based on the actuary's projections, it is anticipated that a change to a 25-year amortization schedule, phasing out the corridor funding method over a 10-year period, and changes to the economic assumptions by lowering the assumed inflation rate and investment return assumption would yield significant reductions in employer contribution rates when compared to the current funding structure.

Reductions in single-year contribution amounts exceed \$1 billion in out-years when compared to the current funding structure. Additionally, such changes would not substantially affect the State's system funding status targets while preserving current benefit levels. While there would be a delay in reaching 80% funded status by 2 years, and 100% funded status by 6 years, there would also be substantial reductions in yearly employer contributions in reaching those targets. **Exhibit 2** illustrates the differences in contribution levels under the current funding policy and assumptions versus the contributions made under the new amortization, a 10-year phase out of corridor, and anticipated economic assumption changes.

Exhibit 2
Current funding vs. Corridor Phaseout,
Reamortization, Alternate
Economic Assumption
Fiscal 2013-2039
(\$ in Thousands)



Source: Gabriel Roeder Smith & Company

As indicated, a significant feature of this approach is the consistency of yearly contribution amounts. Under this approach, the highest single-year contribution is \$2.667 billion in fiscal 2032. Under the current system, the fiscal 2032 contribution is projected to be \$3.676 billion. The current projected single-year contributions for fiscal 2021 through 2037 all exceed the highest single-year contribution under the proposal. Additionally, the contribution rate as a percentage of payroll peaks at 20.92% and is above 20.00% for only 6 years and steadily declines starting in fiscal 2020. Under the current system, the contribution rate as a percentage of payroll, peaks at 22.75% and is above 20.0% for 20 years.

Over the first five years of this proposal, the employer contribution is reduced by over \$451 million. For fiscal 2015 through 2024, the proposal saves \$ 2.22 billion over the current system. Over the entire period from fiscal 2015 through fiscal 2039 (when the proposal would take effect), cumulative employer contributions under the current system total \$74.5 billion. For

that same 25-year period, under the DLS and SRA proposal, cumulative employer contributions total \$60.7 billion.

These calculations are based on the assumption that the Board of Trustees will make the assumed changes to the inflation rate and investment return assumption. In the event that those changes are not made by the board, a change to the amortization and a 10-year phase out of the corridor method still results in significant savings over the current system. The projections for the above proposal and the proposal without the board's economic assumption changes, are attached as **Appendices 2** and **3**, respectively. It is important to note that all projections are based upon all assumptions being realized exactly. Gains and losses to the system will affect out year projected numbers as they occur.

Findings

While the corridor method has previously resulted in reduced employer contributions, working the investment losses sustained since its inception through the corridor method will have significant impact on the employer contribution in out-years. A change to the amortization of unfunded liabilities along with a phasing out of the corridor will allow the corridor method to be ended and will reduce employer contributions. The expected changes that the Board of Trustees will make in the following year to the economic assumptions, would provide additional savings in the first few years while also adjusting the investment return assumption downward, consistent with actions taken by other plans across the country. The proposed changes result in substantial reductions to employer contributions, while preserving the goals of the 2011 pension reform.

Projected Results Under Current Funding Policy
MSRPS - Combined State Systems

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Contribution Rate ¹						Projected Funded Ratios by Valuation Date	
			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%	10.94%	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.*	Contribution Rate ¹						Projected Funded Ratios by Valuation Date	
			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%	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.*	Contribution Rate ¹					Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment (\$ in thousands) ¹	Projected Funded Ratios by Valuation Date	
			Fiscal Year	Normal Cost	UAAL	Total				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

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Contribution Rate ¹					Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment (\$ in thousands) ¹	Projected Funded Ratios by Valuation Date	
			Fiscal Year	Normal Cost	UAAL	Total				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 30 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					Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment (\$ in thousands) ¹	Projected Funded Ratios by Valuation Date	
			Fiscal Year	Normal Cost	UAAL	Total				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.*	Contribution Rate ¹					Total with Reinvested Savings	Illustrated Dollar Contribution Including Reinvestment (\$ in thousands) ¹	Projected Funded Ratios by Valuation Date	
			Fiscal Year	Normal Cost	UAAL	Total				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

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Contribution Rate ¹						Projected Funded Ratios by Valuation Date	
			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

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Contribution Rate ¹						Projected Funded Ratios by Valuation Date	
			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						Projected Funded Ratios by Valuation Date	
			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	7.70%	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						Projected Funded Ratios by Valuation Date	
			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	7.70%	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

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Contribution Rate ¹						Projected Funded Ratios by Valuation Date	
			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						Projected Funded Ratios by Valuation Date	
			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	7.70%	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

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Contribution Rate ¹						Projected Funded Ratios by Valuation Date	
			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

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Contribution Rate ¹						Projected Funded Ratios by Valuation Date	
			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)

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Contribution Rate ¹						Projected Funded Ratios by Valuation Date	
			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						Projected Funded Ratios by Valuation Date	
			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%	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

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Contribution Rate ¹						Projected Funded Ratios by Valuation Date	
			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)

Valuation Date	Interest Rate Assump.	Price Inflation Assump.*	Contribution Rate ¹						Projected Funded Ratios by Valuation Date	
			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.

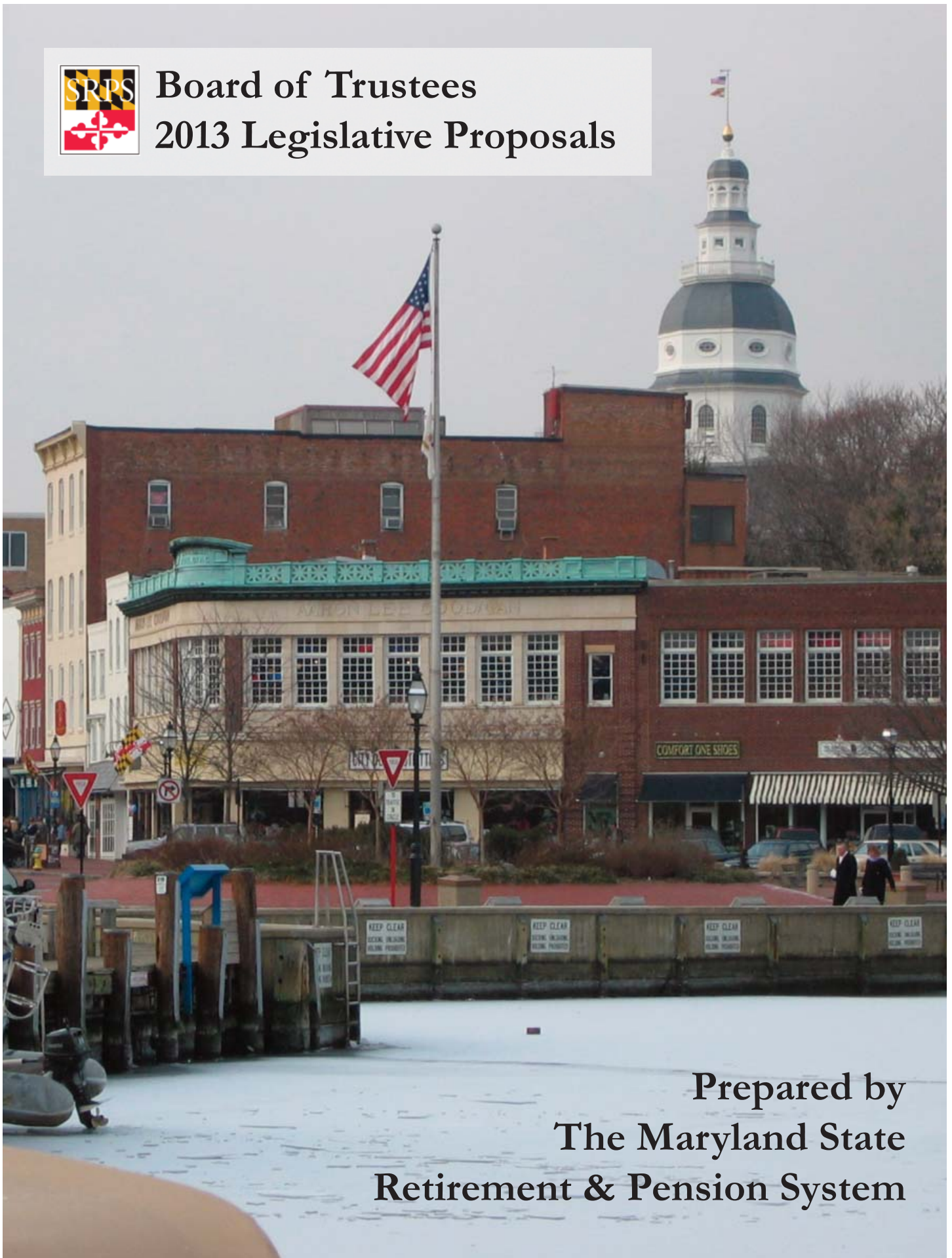
Impact of change in funding policy methodology first reflected in the June 30, 2013 valuation which affects the FY 2015 contribution rate. 25-year closed period begins in the 2013 valuation and phase out of corridor first occurs in the 2013 valuation using 70% of the prior year budgeted rate and 30%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



Board of Trustees 2013 Legislative Proposals



Prepared by
The Maryland State
Retirement & Pension System

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2013 BOARD REQUESTED LEGISLATION

The following proposals are offered by the Board of Trustees for the State Retirement and Pension System for the Joint Committee on Pensions' consideration to sponsor as legislation for the 2013 legislative session.

45-DAY BREAK IN SERVICE – REEMPLOYMENT

Background

Each of the several systems provides under various provisions of the State Personnel and Pensions Article that an individual who is receiving a normal service retirement allowance may not be reemployed within 45 days of the individual's retirement if the individual is reemployed by the same employer from which the individual retired. These provisions were added to the State Personnel and Pensions Article to protect the State Retirement and Pension System's tax qualified status under the Internal Revenue Code (IRC) by ensuring that there has been a bona fide break in service between employment and retirement in instances when the individual has retired prior to reaching normal retirement age. In addition, these provisions were added to protect a reemployed retiree from receiving a 10% premature distribution tax in instances when a retiree begins receiving benefits prior to age 59 ½. Section 72(t) of the IRC provides that in those instances, regardless of whether the individual has reached normal service retirement age, this penalty may be imposed if an individual retires prior to age 59 ½ and cannot show that there has been a clear separation from employment for the retiree.

Based on various cases, Revenue Rulings, and Information Letters from the Internal Revenue Service (IRS), it is unlikely that, without a significant break in service between retirement and reemployment, the IRS would consider a retiree as separating from employment if there was no change in services rendered or a reduction in work schedule. In light of this interpretation of "separation from employment", tax counsel for the State Retirement and Pension System (System) has advised that the more differences there are between the individual's last job before retirement and the job being performed when the person is rehired, and the longer the break between the date of retirement and date of rehire, the more likely it is that the IRS will consider it a bona fide retirement. Accordingly, this will protect the System's tax qualified status and the retiree from incurring a 10% premature distribution tax when there has not been a legitimate separation from employment.

Recommendation

Staff for the State Retirement Agency (Agency) has encountered many situations where individuals retire from one of the several systems and without incurring any break in service, return to work within days of retirement for a different participating employer of the System, performing essentially the same duties the individual was performing prior to retirement. However, because technically these individuals are not returning to work for the same employer from which they retired, the Agency may not require they assume a bona fide break in service of 45 days. Therefore, to protect the System's tax qualified status and the retiree from incurring a 10% premature distribution tax, the board is recommending legislation that would amend provisions in each of the several systems addressing reemployment of retirees to impose a 45-day break in service for all retirees, including disability retirees, who are reemployed by a participating employer in the System.

Cost

There is no cost associated with this proposal.

OVERPAYMENTS

Background

Section 21-113(b) of the State Personnel and Pensions Article provides that the Board of Trustees of the System may recover the amount of any improper payment. This provision further provides the process the board is required to follow in order to recover any overpayment. Specifically, § 21-113(b)(2)(ii) provides that "... the Board of Trustees may adjust any future monthly payments of that person's allowance to recover the amount owed."

The Agency recently encountered a situation where, following the death of a retiree, the Agency discovered that prior to the retiree's death, the retiree had received improper payments from the System in excess of what he was entitled. In accordance with § 21-113(b) and in following its past practice, the Agency attempted to recover the overpayment from the benefits paid to the deceased retiree's beneficiary. However, in this instance, the designated beneficiary's attorney argued that under § 21-113(b)(2)(ii), the Agency may only offset the retiree's benefit, not the beneficiary's benefit.

Recommendation

To avoid a similar situation in the future and codify the existing practice of the State Retirement Agency, the board recommends that § 21-113(b) be amended to allow the board to recover from the survivor benefit paid to a designated beneficiary of a deceased retiree, any improper payments made to that retiree but not discovered until after the retiree was deceased.

In addition, the board is also recommending that § 21-113(a) be clarified that the board is required to correct any error that results in a retiree or beneficiary receiving a benefit that differs from the benefit to which they are entitled. Presently, § 21-113(a) states that the board may only correct an error in the records of the several systems.

Cost

There is no cost associated with this proposal. Rather, it will assist the Agency in recovering payments made in error.

ADMINISTRATIVE FEES – PARTICIPATING GOVERNMENTAL UNITS

Background

The 2011 pension reform included provisions that require participating governmental units to pay their prorated share of the administrative costs of the Agency, based on the number of their employees who are members of the Employees' Pension System or the Employees' Retirement System. Specifically, § 21-316(e)(2) of the State Personnel and Pensions Article states that a participating governmental unit shall make its administrative fee payments to the Agency on a quarterly basis. However, § 21-316(e)(6) further states that a participating governmental unit may then deduct the total amount paid in administrative fees from the total amount of the annual employer contributions made by that participating governmental unit.

Prior to the enactment of the administrative fees, operating expenses for a participating governmental unit were withdrawn from the accumulation fund of the trust. In the following fiscal year this amount would be amortized over 25 years and 1/25 of the amount that was used for operating expenses in the previous fiscal year would be included in the annual employer contribution for that participating governmental unit. This would serve as a long term reimbursement to the accumulation fund for those operating expenses. Now, with the Agency receiving its operating expenses directly from a participating governmental unit, the Agency no longer draws these funds from the accumulation fund. Accordingly, the amount paid in administrative fees will no longer need to be amortized and included in a participating governmental unit's future annual employer contribution. Moreover, because the amortized amount of administrative fees is no longer included in future employer contributions, it would be erroneous on the part of the Agency to allow the participating governmental unit to deduct the amount paid in administrative fees from its annual employer contributions.

Recommendation

The board is recommending that legislation to repeal § 21-316(e)(6) that would allow a participating governmental unit to deduct its administrative fees from its annual employer contributions.

Cost

There is no cost associated with this proposal. This legislation will prevent the underfunding the System by the amount of administrative fees that a participating governmental unit may deduct from its employer contributions.

UNUSED SICK LEAVE

Background

Section 20-206 of the State Personnel and Pensions Article provides that at the time of retirement, a member may receive creditable service for unused sick leave. This section further states that a member may not earn more than 15 days of sick leave per year as an active employee with a participating employer and that if a participating employer provides more than 15 days of sick leave per year, the board shall reduce the member's accumulated sick leave by the lesser of:

1. the days of sick leave used by the member in that year; or
2. the number of days of sick leave provided by the participating employer for that year, less 15.

Participating employers that provide more than 15 days of sick leave per year are generally the local boards of education. However, because these employers only report total cumulative sick leave to the Agency, it is impossible to perform the calculation provided under § 20-206(e)(3)(iii). Instead, the Agency determines based on the total number of years of service the member has earned, what the maximum amount of service credit the member could have received at a rate of 15 days per year. Based on this number the Agency then determines that amount of creditable service to which the member is entitled.

Recommendation

Because the current calculation required under § 20-206(e)(3)(iii) is impossible for the agency to perform, to avoid confusion for members who are employed by participating employers who provide more than 15 days of sick leave per year, the board is recommending legislation to amend this subparagraph to clarify the calculation that the Agency actually performs.

Cost

There is no cost associated with this proposal. It will codify existing Agency practice.

COST OF LIVING ADJUSTMENTS

Background

Chapter 599 of 2011 required the State Retirement Agency to review § 24-401 and Title 29, Subtitle 4 of the State Personnel and Pensions Article and make recommendations to the Joint Committee on Pensions to provide accuracy and clarity to the provisions governing cost of living adjustments (COLAs) for retirees of the several systems. During the 2011 interim, the Agency submitted a draft to the joint committee that was introduced as legislation during the 2012 session (House Bill 808/Senate Bill 879). However, while the bills were being considered before the legislature, the Agency and the Department of Legislative Services determined that Title 29 would be better served if a more comprehensive revision was undertaken. After discussions with both the subcommittee chairs of the Senate and House Oversight Committees on Pensions, they agreed to withdraw the bills with the expectation that a more extensive revision of § 24-401 and Title 29, Subtitle 4 of the State Personnel and Pensions Article would be presented to the joint committee during the 2012 interim.

Recommendation

The board is recommending legislation to amend § 24-401 and Title 29, Subtitle 4 to reflect the Agency practice and computer programing used by the Agency to calculate COLAs each year. This proposed legislation would not make any substantive changes to the COLA calculations for any of the several systems.

Cost

There is no cost associated with this proposal.