Gabriel Roeder Smith & Company
Consultants & Actuaries

# STATE UNIVERSITIES RETIREMENT SYSTEM OF ILLINOIS

## ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2011

GRS
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November 9, 2011

Board of Trustees
State Universities Retirement System of Illinois
1901 Fox Drive
Champaign, Illinois 61820

Dear Members of the Board:

At your request, we present the report of the actuarial valuation of the State Universities Retirement System of Illinois ("SURS") as of June 30, 2011. GRS has prepared this report exclusively for the Trustees of the State Universities Retirement System; GRS is not responsible for reliance upon this report by any other party. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board.

This valuation provides information on the funding status and the contribution requirements of SURS. This valuation includes a determination of the State contribution level (the "Statutory Contribution") for the fiscal year ending June 30, 2013, under Section 15-155 of the SURS Article of the Illinois Pension Code and provides estimates of Statutory contributions for subsequent years. This valuation also provides the Annual Required Contribution (ARC) as determined pursuant to the Governmental Accounting Standards Board (GASB) and information as required by GASB Statement No. 25 and No. 27. This report should not be relied on for any purpose other than the purpose described.

The Statutory funding policy does not currently meet the requirements for amortizing the unfunded liability provided under GASB Statement No. 25.

This valuation is based on the provisions of SURS in effect as of June 30, 2011, data on the SURS membership and information on the asset value of the trust fund as of that date. The valuation was based upon the information furnished by SURS staff, concerning SURS benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency, but did not otherwise audit the data. We are not responsible for the accuracy or completeness of the information provided by SURS.

The benefit provisions for members hired on or after January 1, 2011, were changed under Public Act 96-0889. Members hired on or after this date and the assumed new hires in the projections were valued under these benefit provisions and different actuarial assumptions, as applicable. In addition, new actuarial assumptions that were recommended and adopted from an experience review for the period June 30, 2006, through June 30, 2010, were first effective with this valuation as of June 30, 2011. The actuarial cost method (Projected Unit Credit, as required by statute) used in this valuation is the same as that used in the prior actuarial valuation of SURS.

To the best of our knowledge, this actuarial statement is complete and accurate, fairly presents the actuarial position of SURS as of June 30, 2011, and has been prepared in accordance with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board, and with applicable statutes.

LLT/AW/LW:kb

Future actuarial measurements may differ significantly from the current measurements presented in this report 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, contribution amounts or applicable law. Due to the limited scope of the actuary's assignment, the actuary did not perform an analysis of the potential range of such future measurements in this report.

Valuations do not affect the ultimate cost of the Plan, only the timing of contributions into the Plan. Plan funding occurs over time. Contribution shortfalls (the difference between the actual contributions and the annual required contributions) remain the responsibility of the Plan sponsor and can be made in later years. If the contribution levels over a period of years are lower or higher than necessary, it is normal and expected practice for adjustments to be made to future contribution levels to take account of this variance-with a view to funding the plan over time. The current contribution variance, as measured by the Net Pension Obligation, is a cumulative $7.9 billion dollar shortfall in required contributions.

The signing actuaries are independent of the plan sponsor.

The undersigned are members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

Respectfully submitted,

Leslie L. Thompson

Amy Williams

Lance J. Weiss

| | | |
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| Senior Consultant | Consultant | Senior Consultant |

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# SUMMARY OF THE VALUATION

# PURPOSES OF THE ACTUARIAL VALUATION

At your request we have performed the actuarial valuation of the State Universities Retirement System of Illinois ("SURS") as of June 30, 2011.

The purposes of an actuarial valuation are as follows:

- To determine the funding status of SURS as of the valuation date based on the market value of assets and the actuarial value of assets,
- To determine the annually required contribution under the standards set by the Governmental Accounting Standards Board (GASB), and
- To develop the levels of contributions required under Section 15-155 of the SURS Article of the Illinois Pension Code ("Section 15-155") for the fiscal year ending June 30, 2013, and to estimate contributions required under that Section for the subsequent years of the funding period ending in the year 2045.

# REPORT HIGHLIGHTS

The Annual Required Contribution for the FYE 2010 was $1.0 billion, and increased to $1.3 billion for the FYE 2011. For the FYE 2010, the State contribution was about $0.7 billion, and for FYE 2011 was $0.8 billion. The shortfalls in this contribution become a part of the Net Pension Obligation, which as of this valuation totaled $7.9 billion dollars. This Net Pension Obligation represents a running total of the contribution shortfalls.

The Statutory contribution for FYE 2013 is $1.442 billion, and includes the SMP contribution. The 2010 valuation had projected the Statutory contribution would increase, from $1.020 billion for FYE 2012 to $1.097 billion for FYE 2013. There are three key reasons for the increase in the Statutory contribution over that which was projected in the prior valuation:

1. Decrease in assumed future payroll growth, from 5.00% per year to 3.75% per year;
2. Use of capped pay on new hires future payroll in calculating the level percent of pay contribution under the Statutory funding policy;
3. Other assumption changes.

SURS incurred significant investment losses in fiscal years 2001 through 2003, had investment gains in fiscal years 2004 through 2007, significant losses in fiscal years 2008 and 2009 and investment gains in fiscal years 2010 and 2011. The returns for the year ending June 30, 2011 amounted to about 23.8% compared to a 15.0% return in FY 2010. The average market value investment return over the most recent 10 years has been approximately 6%.

The funded ratio decreased from 46.4% as of June 30, 2010, to 44.3% as of June 30, 2011, based on the actuarial value of assets and increased from 40.2% as of June 30, 2010, to 45.3% as of June 30, 2011, based on the market value of assets.

In addition, new assumptions that were recommended and adopted from an experience review for the period June 30, 2006, through June 30, 2010, were first effective with this valuation as of June 30, 2011.

## ACTUARIAL ASSUMPTIONS

New actuarial assumptions were first adopted for use with the actuarial valuation as of June 30, 2011, and were based on the recommendations from the experience review performed for the period from June 30, 2006, through June 30, 2010. The changes in assumptions include:

- Decrease price inflation assumption from 3.75 percent to 2.75 percent
- Decrease assumed effective rate of interest (ERI) for crediting member contributions from 8.50 percent to 7.75 percent
- Decrease payroll growth assumption from 5.00 percent to 3.75 percent
- Modify service-based component of salary increase assumption and reflect 3.75 percent wage inflation
- Decrease overall retirement rates
- Modify service-based termination rates
- Update mortality rates to the RP 2000 Combined Healthy Mortality Table projected to 2017 with adjustments for males and females
- Decrease disability rates
- Include a liability load of 10 percent for service retiree benefits whose benefits have not been finalized

In addition, we have assumed that the Statutory contribution will be calculated as a level percentage of pensionable (capped) payroll on members hired on or after January 1, 2011.

The assumptions can be found in Appendix E of the report. The investment rate of return assumption of 7.75%, which was decreased from 8.50% as of June 30, 2010, and the asset valuation method, which changed from market value of assets to actuarial value of assets effective with the valuation as of June 30, 2009, are the same as those used in the prior valuation as of June 30, 2010.

## SURS BENEFITS

The benefit provisions valued in this valuation are identical to those valued in the prior valuation as of June 30, 2010. Members hired on or after January 1, 2011, were valued using the provisions of Public Act 96-0889, which establishes a second tier of benefits.

GRS made certain assumptions for provisions that were not specifically addressed in the legislation establishing a second tier of benefits. GRS assumed *employer contributions would be calculated as a level percentage of pensionable (capped) payroll*. The basis for this assumption comes from 40 ILCS 5/1-160 (b-5). Additional descriptions of the benefit provisions can be found in Appendix F of the report.

## EXPERIENCE DURING 2011

The fund earned 23.8% on a market value basis during FY 2011 and exceeded the assumption of 7.75% for FY 2011. However, the fund earned 4.5% on an actuarial value of assets basis during FY 2011, due to additional recognition in the actuarial value of assets of the significant investment loss from FY2009. Because 4.5% compares to the assumed rate of investment return of 7.75%, there was an asset loss of $430.0 million. Led by this actuarial loss on assets, the SURS defined benefit programs experienced an overall actuarial loss of $509.5 million. There was a loss of $79.5 million from actuarial liabilities, including a loss of about $251.8 million from demographic experience which was partially offset by a gain of $172.3 million from lower than expected pay increases.

The total gain or loss from liabilities for the system is calculated as follows:

| | | |
|---|---|---|
| 1. | AAL - Prior Year | $ 30,120.4 |
| 2. | Normal Cost - Prior Year [1] | 723.8 |
| 3. | Benefits and Admin Expenses Paid in FY 2011 | (1,682.4) |
| 4. | Interest on the above items | 2,297.9 |
| 5. | Expected AAL 6/30/2011 (1+2+3+4) | 31,459.7 |
| 6. | Impact of Change in Actuarial Assumptions and Methods | (24.9) |
| 7. | Actual AAL 6/30/2011 | 31,514.3 |
| 8. | Actuarial (Gain)/Loss on Liabilities (7-6-5) | $ 79.5 |

[1] *Total Normal Cost from the previous valuation which includes both employee and employer portion.*

The total net actuarial loss is the total of the loss from assets and the loss from liabilities. The total loss is as follows:

| | | |
|---|---|---|
| 1. | Actuarial (Gain)/Loss on Assets | $ 430.0 |
| 2. | Actuarial (Gain)/Loss on Liabilities | 79.5 |
| 3. | Total Actuarial (Gain)/Loss (1+2) | $ 509.5 |

The "behavior" of the population determines the liability gain or loss for the year. There was a gain on salaries, due to lower salary increases than assumed. From last year to this year, there was a gain on retirement. Based on the assumptions, there were about 3,500 employees expected to retire from active service, and only about 2,200 retired from active service. Retiree mortality experience produced a loss, meaning retirees are living a little bit longer than expected, and, as always, there was a new entrant loss. The new entrant loss occurs each year, but is offset by additional contributions in the assets. The other assumptions were so close that they generated very little actuarial gain or loss. The actuarial gains and losses were measured against assumed experience based on the assumptions used in the actuarial valuation as of June 30, 2010. Many of these assumptions have been changed effective with the valuation as of June 30, 2011.

See Table 9 (page 17), Appendix C, for detail of the gains and losses by source.

## STATUTORY APPROPRIATIONS FOR THE 2013 FISCAL YEAR AND BEYOND

Section 15-155, which governs the development of Employer/State contributions to SURS, provides that:

1. Employer/State contributions are determined under the following process:

   a) The overall objective of the statute is to achieve a funding ratio of 90% by the end of fiscal year ("FY") 2045.

b) The Employer/State contribution for FY 2011 and each year thereafter to and including FY 2045 is to be based on a (theoretically) constant percentage of the payroll[1] of active members of SURS based on the actuarial value of assets at the valuation date and assuming the actuarial value of assets earns the assumed investment return in the future.

c) After 2045, the Employer/State contribution rate is to be sufficient to maintain the funding level at 90%.

*[1] We have assumed the contribution would be based on pensionable (capped) payroll for the members hired on or after January 1, 201l.*

2. During the period of amortization of the 2003 bond issue, the Employer/State contribution in any fiscal year may not exceed the excess of:

   a) the contribution, as developed in 1., above, assuming that the special contribution (from the bond proceeds) has not been made, over

   b) the debt service on the bond issue for the fiscal year.

3. Pursuant to Section 15-165, the dollar amount of Employer/State contribution required for a fiscal year shall be certified to the Governor no later than November 15 for the fiscal year commencing on the following July 1. The required amounts are budgeted pursuant to the continuing appropriations process.

Based on the actuarial value of assets, Employer/State contributions for FY 2013 and estimates of the required contributions for the subsequent five fiscal years are below. The estimates for fiscal years 2013-2017 are calculated based on the expected actuarial value of assets at each of the future corresponding valuations, including the recognition of deferred gains and losses that will be recognized in future years as shown in Table 7 (page 15). In addition, the table below shows the certified Employer/State contributions for FY 2012 for comparison purposes, as calculated in the actuarial valuation as of June 30, 2010.

| | Estimated Statutory Contribution (in Millions) | | |
|---|---|---|---|
| Fiscal | 15% of New Members to SMP | | |
| Year [1] | SURS | SMP [2] | Total |
| 2012 | $ 977.1 | $ 42.4 | $ 1,019.5 |
| 2013 | 1,400.8 | 42.0 | 1,442.8 |
| 2014 | 1,450.5 | 45.5 | 1,496.0 |
| 2015 | 1,501.7 | 47.2 | 1,548.9 |
| 2016 | 1,492.7 | 49.1 | 1,541.8 |
| 2017 | 1,498.1 | 51.0 | 1,549.1 |
| 2018 | 1,534.2 | 52.9 | 1,587.1 |
| Seven year total | $9,855.1 | $330.1 | $10,185.2 |

*[1]FY 2012 Contribution based on June 30, 2010, valuation. FY 2013 Contribution and projected FY 2014-2018 contributions based on June 30, 2011, valuation. The Statutory contribution does not include debt service.*
*[2] Projected Self Managed Plan (SMP) contribution is based on projection of current SMP members and 15% of new members electing SMP, which is the defined contribution plan option.*

The Statutory contribution for FY 2013 is $1,442,800,000. This is equal to a gross Statutory contribution of $1,448,209,000 less $5,409,000 in SMP forfeitures. The projected SMP contributions for FY 2014-2018 are net of assumed projected SMP forfeitures.

The Statutory contribution increased from $1.0 billion for fiscal year 2012 to $1.4 billion for fiscal year 2013. The increase in the Statutory contribution is mainly attributable to the change in the payroll growth assumption from 5.00% used in the previous valuation to 3.75% first used in the valuation as of June 30, 2011. In addition, the use of capped payroll for new hires also has the effect of lowering future payroll growth. Decreasing the payroll growth assumption allocates a higher contribution to the earlier years so that the future funding objective can be achieved.

Estimates of Statutory contributions through 2045, assuming that 15% of future new members elect SMP, are set out in Table 15 (pages 25-26).

The Statutory contributions set out in this report represent the contribution amount determined consistent with the Statute. The net State appropriation is the total shown in this report, adjusted by contributions from federal and trust funds.

## ASSET INFORMATION

The Governmental Accounting Standards Board ("GASB") has promulgated Statements No. 25 and 27 that mandate, among other things, the use of market or market-related (actuarial) asset value. Prior to the valuation as of June 30, 2009, it was agreed that market value, without adjustment, would be used for all actuarial purposes. Legislation in 2009 determined that first effective in the valuation as of June 30, 2009, contribution projections will be set out based on the actuarial value of assets. Funding status determinations and the Annual Required Contribution (ARC) were calculated based on the actuarial value of assets.

The market value of the assets of the fund that is available for benefits has increased from $12,121.5 million as of June 30, 2010, to $14,274.0 million as of June 30, 2011. This increase is due to favorable return on fund assets. The actuarial value of assets is $13,945.7 million, which is $328.3 million lower than the market value of assets. This difference is due to the continuing recognition of the FY 2009 investment losses and the subsequent investment gains. Twenty percent of these gains and losses are recognized each year. The $0.33 billion, which is the value of net deferred gains, will be smoothed into the actuarial value of assets over the next four years. The remaining unrecognized FY 2009 losses will be smoothed in over the next two years and the remaining net asset gains from FY 2010 and FY 2011 will be smoothed in the next three and four years, respectively.

The detailed determinations of asset values utilized in this valuation and asset growth in the last year are set out in Appendix A and Table 7 (page 15) of Appendix C.

## FUNDING STATUS

The funding status of SURS is measured by the Funding Ratio. The Funding Ratio is the ratio of the assets available for benefits to the actuarial accrued liability of the System. Thus, it reflects the portion of benefits earned by SURS members, which are covered by System assets.

A funding ratio of 100% means that all of the benefits earned to date by SURS members are covered by assets. By monitoring changes in the funding ratio each year we can determine whether or not funding progress is being made.

Based on the actuarial value of assets, the SURS funding ratio decreased from 46.4% at June 30, 2010, to 44.3% at June 30, 2011. The funded ratio is 45.3% based on the market value of assets at June 30, 2011. The funded ratio based on the actuarial value of assets is projected to continue to decline for the next two fiscal years as the deferred investment losses from FY 2009 are fully recognized in the actuarial value of assets.

The table below shows a comparison for fiscal years 2008 through 2011 of the percentage of benefits that are covered by the market value of assets. The employer financed liabilities for current active and inactive members are 0% funded by the assets. Only a portion of the retiree liabilities are funded by current assets and the percentage covered increased from 38.2% as of June 30, 2010 to 45.2% as of June 30, 2011.

**Percentage of Benefits Covered by Net Assets**
**(in Millions)**

| Fiscal Year | Member Acc Contrib. (1) | Members Receiving Benefits (2) | Act/Inact Employer Portion (3) | Net Market Value of Assets | % of Benefits Covered by Assets (1) | (2) | (3) |
|---|---|---|---|---|---|---|---|
| 2008 | $ 5,426.8 | $ 13,978.1 | $ 5,512.8 | $ 14,586.3 | 100.0% | 65.5% | 0.0% |
| 2009 | 5,688.9 | 14,802.6 | 5,824.7 | 11,033.0 | 100.0% | 36.1% | 0.0% |
| 2010 | 5,697.6 | 16,834.4 | 7,588.4 | 12,121.5 | 100.0% | 38.2% | 0.0% |
| 2011 | 5,730.4 | 18,918.1 | 6,865.8 | 14,274.0 | 100.0% | 45.2% | 0.0% |

## ACTUARIAL FUNDING AND STATUTORY FUNDING

GASB requirements, as amplified by the Actuarial Standards of Practice, provide guidance on how to determine the Annual Required Contribution (ARC) for a retirement plan. This ARC is the sum of the normal cost and amortization of the unfunded accrued liability. The reason for this accrual pattern is to have benefits accrued within the same generation that has earned them as well as to ensure that all benefit obligations will be met.

The Total Actuarially Determined Contribution (ADC) for FY 2012 is $1.7 billion (Table 11, page 19). Projected member contributions for FY 2012 are $280 million, for an estimated net ARC of about $1.4 billion. On a Statutory appropriation basis the contribution for SURS (which excludes the SMP amount) for FY 2012 (from the June 30, 2010 report) was $977 million. The cumulative difference between the ARC and the contributions represents a "net pension obligation" (NPO) as defined under GASB. An NPO is viewed as the accumulated value of contribution variances – where GASB defines contribution variances as the difference between the ARC and the Statutory appropriation. In lay terms, this NPO could be viewed as a "past due" on the annual required contributions.

The Statutory funding policy creates a perpetual contribution variance. In the case of SURS, the Statutory funding policy creates a temporary underfunding of the plan in earlier years, and in later years that Statutory contribution will exceed the GASB ARC. In the earlier years until 2015, the Statute determines a contribution that is less than the ARC – thereby adding to the NPO. As shown in

Table 12 (page 20) of this report, the NPO (accumulated missed contributions) is almost $8.0 billion as of June 30, 2011. A large and growing NPO may raise concerns in the capital markets and impact the cost of debt and borrowing for the State. As shown in Graph 2 (page 27), the Statutory contributions are projected to remain below the ARC until fiscal year 2015. Beginning in 2016, the Statutory contributions exceed the ARC and continue to rise in order to meet the ultimate funding objective of a 90% funded ratio in 2045. <u>This underfunding puts the plan at serious risk for exhaustion of the trust, leaving the responsibility for the payment of benefits elsewhere.</u>

Based on projections assuming that the Statutory contributions are made every year (as shown in Table 15, pages 25-26) and an investment return of 7.75% each year, the funded ratio is projected to decline from the current level until 2012. Beginning in 2013, the funded ratio is projected to begin to increase from about 43% funded to 90% funded at 2045. The funded status is not projected to exceed 70% until 2039, and is projected to increase to 90% during the six year period from 2039 until 2045. If the Statutory contributions are not made or investment return is less than the assumption of 7.75%, the funded ratio will be lower and the cash flow strain will be higher.

## RECOMMENDATIONS

The calculations in this report were prepared based on the methods required by the Statutory funding policy including the asset smoothing method that was adopted for the first time in the June 30, 2009 actuarial valuation. In light of the current funded status of this Retirement System, we do not endorse this funding policy because the Statutory funding policy defers funding for these benefits into the future and places a higher burden on future generations of taxpayers. In addition, maintaining the Statutory funding policy in combination with the benefit provision changes for new hires further delays funding of benefits.

We recommend a funding policy that recognizes and funds to the ARC. In addition, we recommend the funding policy for paying off the current unfunded accrued liability be changed to a closed amortization period (i.e. the amortization period declines by one year with each actuarial valuation). A closed amortization period methodology pays off the unfunded accrued liability in full by the end of the 30 year period. The open amortization method (the current method) resets the funding period to 30 years each year, and pushes a portion of the unfunded accrued liability beyond the 30 year period. The current Statutory funding policy of this plan does not comply with the recommendation. If all actuarial assumptions are met, the benefit obligations will need to be funded through the payment of the ARC. In addition, the NPO will be “paid off” through contributing amounts in excess of the ARC. Continually funding the Plan below the ARC creates the risk that ultimately benefit obligations cannot be met from the trust, and will require a greater amount of funding from other State resources. In addition, continually funding the Plan below the ARC also creates more of a funding need from contributions and less is available from investment returns - thereby creating a more expensive plan.

In addition, we recommend that an asset corridor on the actuarial value of assets be implemented. The actuarial value of assets was about 30% higher than the market value of assets as of June 30, 2009, was about 15% higher than the market value of assets as of June 30, 2010, and was about 2% lower than market value as of June 30, 2011. Using an actuarial value of assets that is significantly higher than the market value of assets delays funding to the system by further deferring the contributions into the future. The plan is already in serious funding jeopardy, and we cannot recommend a policy such as “no corridor” which could further bring risk to the funding of the benefit obligations.

**We recognize that the Statute governs the funding policy of the plan. The purpose of these comments is to highlight the difference between the Statutory appropriation and the ARC, to discuss the impact of the ongoing contribution variance, and most importantly to clarify that the plan is in significant funding peril unless contributions that are at least equal to those recommended under the ARC are made.**

## GASB DISCLOSURE

The accounting policies of the State of Illinois relative to its retirement systems are based on the terms of GASB Statement No. 25 and 27. Tables 10 and 11 (pages 18 and 19) are Required Supplemental Information tables mandated by those statements. Table 12 (page 20) provides additional supporting information.

## FUTURE CONSIDERATIONS

Recent changes (such as five-year asset smoothing and the addition of the new benefit tier) have had the effect of reducing the contribution amounts that would have otherwise been made. We recognize that this is the effect of the statute. However, the change in the investment return assumption and other assumptions to align the assumption with current market expectations increased the contribution amounts that would otherwise have been made.

We must also point out that the Statute as it is currently written will take any deferred contributions and "steepen the slope" for the increasing contribution amounts (see Graph 2 on page 27). This will occur because the 90% funded ratio is fixed in Statute, and thus the funding is truly one of "pay me now or pay me more later". Later payments are more costly, since the funds were not in the trust to earn interest. The steep increase in the contribution requirement on or after 2030 will likely place a significant strain on the state's resources. We continue to recommend a funding policy to fully fund the ARC so more resources enter the plan through investment return, thereby creating less of a strain on future state revenue.

# APPENDICES

# APPENDIX A

## ASSET INFORMATION

# TABLE 1
## STATEMENT OF PLAN NET ASSETS
## AS OF JUNE 30, 2011 AND JUNE 30, 2010

| | Defined Benefit Plan | Self Managed Plan | Reporting Entity Totals 2011 | Reporting Entity Totals 2010 |
|---|---|---|---|---|
| Assets | | | | |
| Cash and short-term investments | $ 505,492,014 | - | $ 505,492,014 | $ 758,435,840 |
| Receivables | | | | |
| Participants | 9,936,358 | $ 2,262,026 | 12,198,384 | 15,208,630 |
| Federal, trust funds, and other | 3,317,220 | 1,309,800 | 4,627,020 | 3,768,845 |
| Pending investment sales | 597,196,141 | - | 597,196,141 | 729,180,673 |
| Interest and dividends | 40,462,379 | - | 40,462,379 | 37,970,185 |
| Total receivables | 650,912,098 | 3,571,826 | 654,483,924 | 786,128,333 |
| Prepaid expenses | 22,777 | - | 22,777 | 22,480 |
| Investments, at fair value | | | | |
| Equity investments | 10,086,790,110 | 44,823,063 | 10,131,613,173 | 7,634,359,192 |
| Fixed income investments | 3,189,219,461 | 20,800,782 | 3,210,020,243 | 3,596,346,644 |
| Real estate investments | 374,925,811 | 663,939 | 375,589,750 | 266,184,186 |
| Mutual fund and variable annuities | | 890,678,243 | 890,678,243 | 667,015,195 |
| Total investments | 13,650,935,382 | 956,966,027 | 14,607,901,409 | 12,163,905,217 |
| Securities lending collateral | 1,516,154,400 | - | 1,516,154,400 | 1,940,729,837 |
| Capital assets, at cost, net of accum deprec $ 17,977,465 and $17,729,535 respectively | 6,003,179 | - | 6,003,179 | 6,408,913 |
| Total assets | 16,329,519,850 | 960,537,853 | 17,290,057,703 | 15,655,630,620 |
| Liabilities | | | | |
| Benefits payable | 7,159,269 | - | 7,159,269 | 6,577,950 |
| Refunds payable | 3,416,995 | - | 3,416,995 | 3,863,392 |
| Securities lending collateral | 1,515,998,213 | - | 1,515,998,213 | 1,935,311,903 |
| Payable to brokers for unsettled trades | 511,135,516 | - | 511,135,516 | 851,863,268 |
| Administrative expenses payable | 17,806,560 | - | 17,806,560 | 16,491,806 |
| Total liabilities | 2,055,516,553 | - | 2,055,516,553 | 2,814,108,319 |
| Net assets held in trust for pension benefits | $ 14,274,003,297 | $ 960,537,853 | $ 15,234,541,150 | $ 12,841,522,301 |

# TABLE 2
# STATEMENT OF CHANGES IN PLAN NET ASSETS
# FOR YEARS ENDED JUNE 30, 2011 AND JUNE 30, 2010

| | Defined Benefit Plan | Self Managed Plan | Reporting Entity Totals 2011 | Reporting Entity Totals 2010 |
|---|---|---|---|---|
| Additions | | | | |
| Contributions | | | | |
| Employer | $ 773,594,666 | $ 44,841,140 | $ 818,435,806 | $ 739,711,843 |
| Participant | 260,177,436 | 49,756,972 | 309,934,408 | 323,570,314 |
| Total Contributions | 1,033,772,102 | 94,598,112 | 1,128,370,214 | 1,063,282,157 |
| Investment Income | | | | |
| Net appreciation in fair value of investments | 2,474,258,890 | 172,505,597 | 2,646,764,487 | 1,294,472,087 |
| Interest | 192,587,174 | - | 192,587,174 | 324,588,475 |
| Dividends | 181,007,663 | - | 181,007,663 | 153,916,871 |
| Securities lending | 5,347,769 | - | 5,347,769 | 6,534,929 |
| | 2,853,201,496 | 172,505,597 | 3,025,707,093 | 1,779,512,362 |
| Less investment expense | | | | |
| Asset management expense | 51,574,569 | - | 51,574,569 | 53,524,481 |
| Securities lending expense | 518,100 | - | 518,100 | 652,536 |
| Net investment income | 2,801,108,827 | 172,505,597 | 2,973,614,424 | 1,725,335,345 |
| Total additions | 3,834,880,929 | 267,103,709 | 4,101,984,638 | 2,788,617,502 |
| Deductions | | | | |
| Benefits | 1,611,228,356 | 11,224,239 | 1,622,452,595 | 1,483,740,506 |
| Refunds of contributions | 58,917,601 | 14,977,550 | 73,895,151 | 57,467,779 |
| Administrative expense | 12,273,786 | 344,258 | 12,618,044 | 12,455,584 |
| Total deductions | 1,682,419,743 | 26,546,047 | 1,708,965,790 | 1,553,663,869 |
| Net increase | 2,152,461,186 | 240,557,662 | 2,393,018,848 | 1,234,953,633 |
| Net assets held in trust for pension benefits | | | | |
| Beginning of year | 12,121,542,111 | 719,980,191 | 12,841,522,302 | 11,606,568,668 |
| End of Year | $ 14,274,003,297 | $ 960,537,853 | $ 15,234,541,150 | $ 12,841,522,301 |

# APPENDIX B

## MEMBERSHIP DATA

# TABLE 3
## SUMMARY OF DATA CHARACTERISTICS
### ($ IN MILLIONS)

| | June 30, 2010 | | June 30, 2011 | |
|---|---|---|---|---|
| | **Number** | **Earnings** | **Number** | **Earnings** |
| **Active Members** | | | | |
| Full time | | | | |
| Traditional SURS | 49,177 | $2,305.9 | 48,253 | $2,260.3 |
| Portable SURS | 18,543 | 1,018.9 | 18,589 | 1,044.5 |
| SMP | 9,146 | 543.6 | 9,157 | 553.9 |
| Total Full Time | 76,866 | $3,868.4 | 75,999 | $3,858.7 |
| Part time | | | | |
| Traditional SURS | 4,316 | $ 25.6 | 4,121 | $ 24.3 |
| Portable SURS | 960 | 6.6 | 925 | 6.7 |
| SMP | 600 | 4.0 | 566 | 3.7 |
| Total Part Time | 5,876 | $ 36.2 | 5,612 | $ 34.7 |
| Total | 82,742 | $3,904.6 | 81,611 | $3,893.4 |
| **Inactive Members** | | | | |
| Traditional/Portable | 71,870 | | 72,903 | |
| SMP | 8,568 | | 7,019 | |
| Total | 80,438 | | 79,922 | |
| | **Number** | **Annual Benefits** | **Number** | **Annual Benefits** |
| **Benefit Recipients** | | | | |
| Retirement | | | | |
| Traditional SURS | 38,435 | $1,324.8 | 40,263 | $1,431.2 |
| Portable SURS | 1,929 | 45.8 | 2,419 | 60.9 |
| Total Retirement | 40,364 | 1,370.6 | 42,682 | 1,492.1 |
| Survivor | | | | |
| Traditional SURS | 7,337 | 98.1 | 7,503 | 105.8 |
| Portable SURS | 65 | 0.7 | 75 | 1.0 |
| Total Survivor | 7,402 | 98.8 | 7,578 | 106.8 |
| Disability | | | | |
| Traditional SURS | 990 | 17.7 | 936 | 16.7 |
| Portable SURS | 147 | 3.4 | 174 | 4.0 |
| Total Disability | 1,137 | 21.1 | 1,110 | 20.7 |
| Total | 48,903 | $1,490.5 | 51,370 | $1,619.6 |

# TABLE 4
## DISTRIBUTION OF FULL-TIME* ACTIVE MEMBERS BY AGE AND YEARS OF SERVICE
## AS OF JUNE 30, 2011

| Age | Years of Service: Under 1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 & Over | Totals |
|---|---|---|---|---|---|---|---|---|---|
| Under 20 | 14 | 8 | - | - | - | - | - | - | 22 |
| | 74,442 | 66,203 | - | - | - | - | - | - | 140,645 |
| 20-24 | 274 | 640 | 34 | - | - | - | - | - | 948 |
| | 2,328,218 | 15,236,310 | 943,189 | - | - | - | - | - | 18,507,716 |
| 25-29 | 565 | 3,398 | 832 | 32 | - | - | - | - | 4,827 |
| | 6,229,718 | 115,195,319 | 30,505,582 | 977,421 | - | - | - | - | 152,908,040 |
| 30-34 | 549 | 3,987 | 2,591 | 636 | 15 | - | - | - | 7,778 |
| | 7,466,451 | 161,956,776 | 117,582,185 | 29,273,221 | 664,415 | - | - | - | 316,943,049 |
| 35-39 | 301 | 2,894 | 2,847 | 1,669 | 356 | 13 | - | - | 8,080 |
| | 4,676,876 | 131,322,481 | 148,383,506 | 91,062,755 | 19,095,310 | 605,077 | - | - | 395,146,005 |
| 40-44 | 281 | 2,439 | 2,924 | 2,298 | 1,082 | 408 | 31 | - | 9,463 |
| | 4,125,188 | 107,421,447 | 155,915,160 | 137,461,547 | 67,561,152 | 23,634,644 | 1,537,893 | - | 497,657,032 |
| 45-49 | 213 | 2,102 | 2,570 | 2,463 | 1,480 | 1,150 | 443 | 22 | 10,443 |
| | 2,957,765 | 86,429,828 | 124,863,522 | 144,577,839 | 97,610,885 | 75,643,576 | 26,787,131 | 1,257,088 | 560,127,633 |
| 50-54 | 193 | 1,875 | 2,509 | 2,539 | 1,719 | 1,626 | 1,083 | 241 | 11,785 |
| | 2,929,788 | 77,089,597 | 115,516,334 | 139,139,145 | 112,039,295 | 118,385,677 | 78,100,080 | 16,294,017 | 659,493,932 |
| 55-59 | 135 | 1,520 | 2,199 | 2,269 | 1,622 | 1,628 | 1,066 | 396 | 10,835 |
| | 1,982,846 | 59,675,992 | 98,790,515 | 120,753,412 | 99,868,257 | 119,034,801 | 91,703,658 | 36,026,958 | 627,836,438 |
| 60-64 | 73 | 1,039 | 1,724 | 1,541 | 1,199 | 1,141 | 673 | 435 | 7,825 |
| | 931,923 | 37,195,891 | 68,230,526 | 81,046,317 | 63,500,473 | 75,780,032 | 59,938,505 | 45,529,154 | 432,152,821 |
| 65 & Over | 21 | 419 | 904 | 823 | 650 | 549 | 235 | 392 | 3,993 |
| | 272,263 | 10,863,757 | 28,621,453 | 36,060,566 | 27,909,048 | 30,174,362 | 19,795,201 | 44,067,343 | 197,763,993 |
| Total Count | 2,619 | 20,321 | 19,134 | 14,270 | 8,123 | 6,515 | 3,531 | 1,486 | 75,999 |
| Total Payroll | 33,975,476 | 802,453,600 | 889,351,972 | 780,352,224 | 488,248,835 | 443,258,168 | 277,862,469 | 143,174,560 | 3,858,677,304 |

** Includes part-time members with at least three years of service.*

## TABLE 5
## DISTRIBUTION OF BENEFIT RECIPIENTS BY AGE
## AS OF JUNE 30, 2011

| Age | Number | Annual Benefit |
|---|---|---|
| **Retirees and Survivors** | | |
| Under 50 | 523 | $ 3,917,285 |
| 50-54 | 659 | 22,072,845 |
| 55-59 | 4,240 | 136,902,312 |
| 60-64 | 8,903 | 291,779,445 |
| 65-69 | 10,039 | 356,569,434 |
| 70-74 | 8,571 | 298,145,227 |
| 75-79 | 6,665 | 219,228,217 |
| 80-84 | 5,367 | 153,267,502 |
| 85-89 | 3,475 | 83,562,656 |
| 90 & Over | 1,818 | 33,456,475 |
| Total | 50,260 | $ 1,598,901,398 |
| **Disabilitants** | | |
| Under 50 | 191 | $ 3,570,526 |
| 50-54 | 184 | 3,544,014 |
| 55-59 | 236 | 4,580,839 |
| 60-64 | 220 | 4,399,804 |
| 65-69 | 131 | 2,481,041 |
| 70-74 | 74 | 1,287,135 |
| 75-79 | 35 | 455,614 |
| 80-84 | 28 | 289,726 |
| 85-89 | 8 | 85,072 |
| 90 & Over | 3 | 20,521 |
| Total | 1,110 | $ 20,714,292 |

# APPENDIX C

## ACTUARIAL DETERMINATIONS

# TABLE 6
# SUMMARY OF ACTUARIAL VALUES
# AS OF JUNE 30, 2011
## ($ IN MILLIONS)

| | APV of Projected Benefits | Projected Unit Credit Values: Actuarial Accrued Liability (AAL) | Projected Unit Credit Values: Gross Normal Cost (NC) [1] | Gross NC % of Pay [1] |
|---|---|---|---|---|
| **1. Active Members** | | | | |
| a. Retirement | $13,482.7 | $ 8,769.8 | $518.3 | 14.82% |
| b. Death | 311.7 | 200.8 | 12.7 | 0.36% |
| c. Disability | 643.9 | 404.0 | 36.0 | 1.03% |
| d. Termination | 1,651.5 | 1,046.2 | 121.1 | 3.46% |
| Total - Active Members | $16,089.8 | $ 10,420.8 | $688.1 | 19.67% |
| **2. Benefit Recipients** | | | | |
| a. Retirement | $17,649.4 | $17,649.4 | $ 0.0 | |
| b. Survivor | 964.7 | 964.7 | 0.0 | |
| c. Disability | 304.0 | 304.0 | 0.0 | |
| Total - Benefit Recipients | $18,918.1 | $18,918.1 | $ 0.0 | |
| **3. Other Inactive** | $ 2,175.4 | $ 2,175.4 | | |
| **4. Grand Total** | $37,183.3 | $31,514.3 | $688.1 | 19.67% |
| **5. Operating Expense** | | | $ 12.8 | 0.37% |
| **6. Total Normal Cost** | | | $700.9 | 20.04% |
| **7. Projected Defined Benefit Payroll [1]** | | | | $3,497.6 |

[1] *Fiscal year 2012; includes the use of capped payroll for members hired on or after January 1, 2011.*

# TABLE 7

## DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS

## FOR THE YEAR ENDING JUNE 30, 2011

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|
| Beginning of Year: | | | | | | |
| (1) Market Value of Assets | $ 11,032,973,403 | $ 12,121,542,111 | | | | |
| (2) Actuarial Value of Assets | 14,281,998,099 | 13,966,642,826 | | | | |
| End of Year: | | | | | | |
| (3) Market Value of Assets | 12,121,542,111 | 14,274,003,297 | | | | |
| (4) Net of Contributions and Disbursements | (565,284,128) | (648,647,641) | | | | |
| (5) Total Investment Income | | | | | | |
| =(3)-(1)-(4) | 1,653,852,836 | 2,801,108,827 | | | | |
| (6) Projected Rate of Return | 8.50% | 7.75% | | | | |
| (7) Projected Investment Income | | | | | | |
| =(1)x(6)+([1+(6)]^.5-1)x(4) | 914,268,077 | 914,753,406 | | | | |
| (8) Investment Income in | | | | | | |
| Excess of Projected Income | 739,584,759 | 1,886,355,421 | | | | |
| (9) Excess Investment Income Recognized | | | | | | |
| This Year (5 year recognition) | | | | | | |
| (9a) From This Year | 147,916,952 | 377,271,084 | | | | |
| (9b) From One Year Ago | (812,256,174) | 147,916,952 | $ 377,271,084 | | | |
| (9c) From Two Years Ago | 0 | (812,256,174) | 147,916,952 | $ 377,271,084 | | |
| (9d) From Three Years Ago | 0 | 0 | (812,256,174) | 147,916,952 | $ 377,271,084 | |
| (9e) From Four Years Ago | 0 | 0 | 0 | (812,256,174) | 147,916,951 | $ 377,271,085 |
| (9f) Total Recognized Investment Gain/(Loss) | (664,339,222) | (287,068,138) | (287,068,138) | (287,068,138) | 525,188,035 | 377,271,085 |
| (10) Change in Actuarial Value of Assets | | | | | | |
| =(4)+(7)+9[a..e] | (315,355,273) | (20,962,373) | | | | |
| End of Year: | | | | | | |
| **(3) Market Value of Assets** | **12,121,542,111** | **14,274,003,297** | | | | |
| **(11) Final Actuarial Value of Assets** | **13,966,642,826** | **13,945,680,453** | | | | |
| (12) Difference Between Market & Actuarial Values | (1,845,100,715) | 328,322,844 | | | | |
| (13) Actuarial Value Rate of Return | 1.79 % | 4.60 % | | | | |
| (14) Estimated Market Value Rate of Return | 15.38 % | 23.74 % | | | | |
| (15) Ratio of Actuarial Value to Market Value | 115 % | 98 % | | | | |
| (16) SURS Reported Market Value Rate of Return | 15.00 % | 23.80 % | | | | |

# TABLE 8
## ANALYSIS OF CHANGE IN
## UNFUNDED ACTUARIAL ACCRUED LIABILITY
## FOR THE YEAR ENDING JUNE 30, 2011
### ($ IN MILLIONS)

| | | |
|---|---|---|
| 1. Actuarial (Gain)/Loss on AAL | | |
| (a) AAL 6/30/10 | | $ 30,120.4 |
| (b) Normal Cost FY11 | $ 723.8 | |
| (c) Benefits and Admin Expenses Paid FY11 | (1,682.4) | |
| (d) Interest on (a), (b), and (c) at 7.75% | 2,297.9 | |
| (e) Expected AAL 6/30/2011 (a+b+c+d) | | 31,459.7 |
| (f) Actual AAL 6/30/2011 Before Changes | | 31,539.2 |
| (g) Actuarial (Gain)/Loss on AAL (f-e) | | $ 79.5 |
| (h) Impact of Benefit Changes | | 0.0 |
| (i) Impact of Change in Actuarial Assumptions and Methods | | (24.9) |
| (j) Actual AAL After Changes (f+h+i) | | $ 31,514.3 |
| 2. Actuarial (Gain)/Loss on Assets | | |
| (a) Actuarial Value of Assets 6/30/10 | | 13,966.6 |
| (b) Contributions FY11 | 1,033.8 | |
| (c) Benefits and Admin Expenses | (1,682.4) | |
| (d) Interest on (a), (b), and (c) at 7.75% | 1,057.7 | |
| (e) Expected Assets 6/30/2011 (a+b+c+d) | | 14,375.7 |
| (f) Actual Actuarial Value of Assets 6/30/2011 | | 13,945.7 |
| (g) Actuarial (Gain)/Loss on Assets (e-f) | | $ 430.0 |
| 3. Total Actuarial (Gain)/Loss | | |
| (a) (Gain)/Loss on AAL | | $ 79.5 |
| (b) (Gain)/Loss on Assets | | 430.0 |
| (c) Net (Gain)/Loss (a+b) | | $ 509.5 |

# TABLE 9
## ANALYSIS OF ACTUARIAL GAINS AND LOSSES
### ($ IN MILLIONS)

| | Amount of (Gain) or Loss | | | |
|---|---|---|---|---|
| | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
| Investment Return[1] | $ 2,004.4 | $ 4,061.1 | $ 940.5 | $ 430.0 |
| Salary Increase | 30.6 | (1.3) | (113.1) | (172.3) |
| Age and Service Retirement | (34.7) | (47.1) | (59.2) | (31.4) |
| General Employment Termination | 45.3 | 57.8 | 32.0 | 34.0 |
| Disability Incidence | 2.1 | (6.6) | (6.1) | (5.2) |
| In Service Mortality | (1.1) | (5.5) | 2.3 | (2.6) |
| Benefit Recipient[2] | 105.5 | 88.9 | 104.7 | 100.8 |
| New Entrants | 117.0 | 85.1 | 65.6 | 75.0 |
| Other | 95.0 | (19.4) | 71.5 | 81.2 |
| Total Actuarial (Gain)/Loss | $ 2,364.1 | $ 4,213.0 | $ 1,038.2 | $ 509.5 |

[1]*Gain/Loss is based on market value of assets prior to FY 2010, and actuarial value of assets thereafter.*

[2]*Benefit recipient (gain)/loss includes mortality gains and losses as well as gains and losses due to unexpected changes in benefit amounts from year to year. Unexpected changes may occur when benefits that are initially paid as preliminary estimates are finalized. Beginning with the valuation as of June 30, 2011, there is an additional load of 10% on the liabilities of those retirees who are currently receiving benefits as a preliminary estimate.*

# TABLE 10

## SCHEDULE OF FUNDING STATUS

### ($ IN 000'S)

| Plan Year | Assets | AAL | UAAL | Funding Ratio | Payroll/DB** | UAAL as % of Payroll |
|---|---|---|---|---|---|---|
| 1998 * | $ 9,793,809 | $ 11,416,095 | $1,622,286 | 85.79 % | $2,377,578 | 68.23 % |
| 1999 | 10,762,157 | 12,617,495 | 1,855,338 | 85.30 | 2,411,118 | 76.95 |
| 2000 | 12,063,950 | 13,679,039 | 1,615,089 | 88.19 | 2,424,209 | 66.62 |
| 2001 | 10,753,297 | 14,915,317 | 4,162,020 | 72.10 | 2,474,631 | 168.19 |
| 2002 | 9,814,677 | 16,654,041 | 6,839,364 | 58.93 | 2,607,155 | 262.33 |
| 2003 | 9,714,547 | 18,025,032 | 8,310,485 | 53.89 | 2,763,428 | 300.73 |
| 2004 | 12,586,305 | 19,078,583 | 6,492,278 | 65.97 | 2,814,071 | 230.71 |
| 2005 | 13,350,278 | 20,349,922 | 6,999,644 | 65.60 | 2,939,185 | 238.15 |
| 2006 | 14,175,147 | 21,688,935 | 7,513,788 | 65.36 | 3,054,100 | 246.02 |
| 2007 | 15,985,730 | 23,362,079 | 7,376,349 | 68.43 | 3,180,985 | 231.89 |
| 2008 | 14,586,325 | 24,917,678 | 10,331,353 | 58.54 | 3,303,220 | 312.77 |
| 2009 | 11,032,973 | 26,316,231 | 15,283,258 | 41.92 | 3,463,922 | 441.21 |
| 2009 *** | 14,281,998 | 26,316,231 | 12,034,233 | 54.27 | 3,463,922 | 347.42 |
| 2010 **** | 13,966,643 | 30,120,427 | 16,153,784 | 46.37 | 3,491,071 | 462.72 |
| 2011 | 13,945,680 | 31,514,336 | 17,568,656 | 44.25 | 3,460,838 | 507.64 |

* *Assets at Market Value*
*AAL - Actuarial Accrued Liability*
*UAAL - Unfunded Actuarial Accrued Liability*
** *Payroll is rolled forward with salary scale for one year.*
*** *Assets at Actuarial Value (Market Value up to second 2009, then Actuarial Value)*
**** *Investment rate of return assumption decreased from 8.50 percent to 7.75 percent.*

**This information is presented in draft form for review by the System's auditor. Please let us know if there are any changes so that we may maintain consistency with the System's financial statements.**

# TABLE 11
## SCHEDULE OF CONTRIBUTIONS
### ($ IN MILLIONS)

| Fiscal Year | (1) Total Normal Cost | (2) Amortization of UAAL | (3) (1) + (2) Total ADC | (4) Member Contributions | (5) (3) - (4) Net State ARC* | (6) Actual State Contribution | (7) (6) / (5) State Cont. as Percent of Net ARC |
|---|---|---|---|---|---|---|---|
| 1998 ** | | | $ 512.1 | $ 221.7 | $ 290.4 | $ 227.8 | 78.44 % |
| 1999 | | | 509.2 | 213.0 | 296.2 | 237.9 | 80.32 |
| 2000 | | | 547.8 | 222.5 | 325.3 | 241.1 | 74.11 |
| 2001 | | | 548.1 | 221.6 | 326.5 | 247.1 | 75.69 |
| 2002 | | | 686.9 | 251.6 | 435.3 | 256.1 | 58.84 |
| 2003 | | | 843.8 | 246.3 | 597.5 | 285.3 | 47.74 |
| 2004 | | | 934.8 | 243.8 | 691.0 | 1,757.5 | 254.36 |
| 2005 | | | 859.7 | 251.9 | 607.8 | 285.4 | 46.96 |
| 2006 | | | 914.9 | 252.9 | 662.0 | 180.0 | 27.19 |
| 2007 | | | 968.3 | 262.4 | 705.9 | 261.1 | 36.99 |
| 2008 | | | 971.6 | 264.1 | 707.5 | 344.9 | 48.75 |
| 2009 | | | 1,147.3 | 273.3 | 874.0 | 451.6 | 51.67 |
| 2010 *** | | | 1,278.3 | 275.0 | 1,003.3 | 696.6 | 69.43 |
| 2011 **** | 723.798 | 795.427 | 1,519.225 | 260.177 | 1,259.048 | 773.595 | 61.44 |
| 2012 | 700.972 | 1,000.612 | 1,701.584 | | | | |

* *ARC - Annual Required Contribution as defined in GASB Statements No. 25 and 27. This is the Actuarially Determined Contribution (ADC) net of member contributions.*
** *Assets at market value*
*** *Assets at actuarial value*
**** *Investment rate of return assumption decreased from 8.50 percent to 7.75 percent.*

**This information is presented in draft form for review by the System's auditor. Please let us know if there are any changes so that we may maintain consistency with the System's financial statements.**

# TABLE 12
## GENERAL INFORMATION GASB #25 AND #27
### ($ IN MILLIONS)

| Fiscal Year | (1) Total ADC | (2) Interest on NPO | (3) NPO Adjustment | (4) (1) + (2) + (3) Total Expense | (5) Member Contributions | (6) (4) - (5) State Expense | (7) Actual State Contribution | (8) Beg. of Year NPO | (9) (8) + (6) - (7) End of Year NPO |
|---|---|---|---|---|---|---|---|---|---|
| 2009 | $1,147.332 | $520.287 | $(329.542) | $1,338.077 | $273.292 | $1,064.785 | $451.617 | $6,121.020 | $6,734.188 |
| 2010 | 1,278.331 | 572.406 | (362.553) | 1,488.184 | 275.000 | 1,213.184 | 696.595 | 6,734.188 | 7,250.777 |
| 2011 | 1,519.225 | 561.935 | (357.035) | 1,724.125 | 260.177 | 1,463.948 | 773.595 | 7,250.777 | 7,941.130 |
| 2012 | 1,701.584 | 615.438 | (452.282) | 1,864.740 | | | | 7,941.130 | |

## Notes in Trend Data

| Information | Data |
|---|---|
| Valuation Date | June 30, 2011 |
| Actuarial Cost Method | Projected Unit Credit |
| Amortization Method | Level Percent, Open |
| Remaining Amortization Period | 30 years |
| Asset Valuation Method | 5-Year Smoothed Market |
| **Actuarial Assumptions** | |
| Investment rate of return* | 7.75% |
| Projected salary increases* | 3.75% - 12.00% |
| Cost-of-living adjustment (pre/post 1/1/2011 hires) | 3.0%/1.375% |

*Includes price inflation of 2.75%

**This information is presented in draft form for review by the System's auditor. Please let us know if there are any changes so that we may maintain consistency with the System's financial statements.**

# APPENDIX D

## ACTUARIAL PROJECTIONS

# TABLE 13

## BASELINE PROJECTIONS – ACTUARIAL VALUATION JUNE 30, 2011

## ASSUMES CONTRIBUTIONS BASED ON TABLE 15 & INVESTMENT RETURN OF 7.75% EACH YEAR

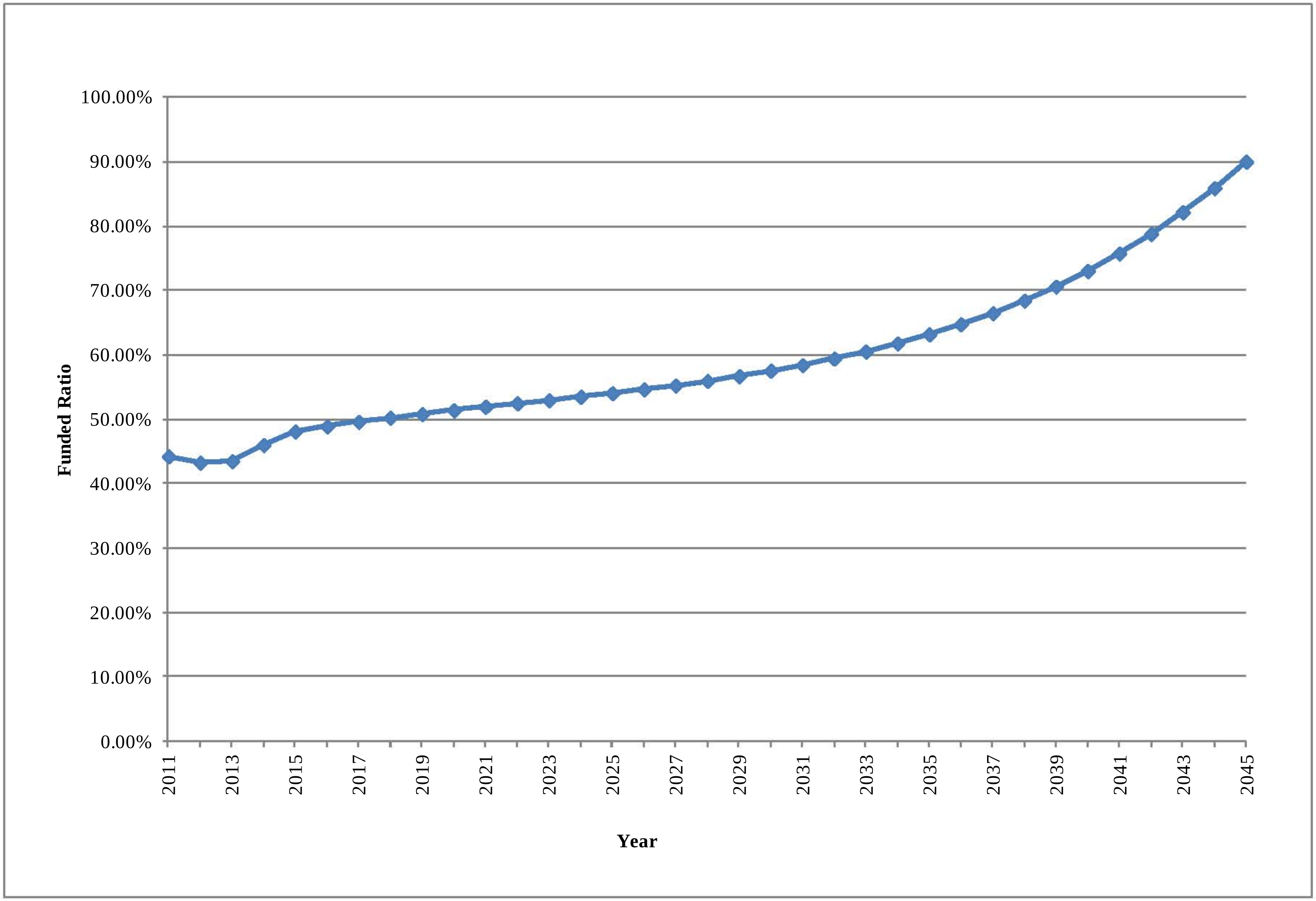
### ($ IN MILLIONS)

| Fiscal Year Ending | Total Payroll [1] | SMP Payroll | DB Payroll [1] | Total Contributions [2] | Benefits | Expenses | Assets EOY | AAL | Funding Ratio |
|---|---|---|---|---|---|---|---|---|---|
| 2011 | $ 3,893.394 | $ 557.646 | $ 3,335.748 | $ 1,033.772 | $ 1,670.146 | $ 12.274 | $ 13,945.680 | $ 31,514.336 | 44.25 % |
| 2012 | 4,094.820 | 597.195 | 3,497.625 | 1,257.525 | 1,803.833 | 12.843 | 14,184.434 | 32,799.672 | 43.25 |
| 2013 | 4,180.662 | 618.638 | 3,562.025 | 1,686.134 | 1,887.339 | 13.325 | 14,821.665 | 34,100.113 | 43.47 |
| 2014 | 4,272.863 | 642.165 | 3,630.699 | 1,741.309 | 1,992.496 | 13.824 | 16,290.384 | 35,386.276 | 46.04 |
| 2015 | 4,370.964 | 666.937 | 3,704.027 | 1,798.374 | 2,104.817 | 14.343 | 17,626.414 | 36,649.155 | 48.10 |
| 2016 | 4,473.685 | 692.822 | 3,780.864 | 1,795.523 | 2,226.094 | 14.881 | 18,530.070 | 37,878.181 | 48.92 |
| 2017 | 4,579.603 | 719.585 | 3,860.019 | 1,807.337 | 2,357.886 | 15.439 | 19,378.640 | 39,060.351 | 49.61 |
| 2018 | 4,689.793 | 747.332 | 3,942.461 | 1,849.987 | 2,493.493 | 16.018 | 20,195.881 | 40,188.848 | 50.25 |
| 2019 | 4,804.097 | 776.019 | 4,028.078 | 1,894.238 | 2,629.385 | 16.618 | 20,980.709 | 41,260.142 | 50.85 |
| 2020 | 4,921.806 | 805.542 | 4,116.263 | 1,939.808 | 2,766.410 | 17.241 | 21,730.782 | 42,269.392 | 51.41 |
| 2025 | 5,567.572 | 956.118 | 4,611.454 | 2,190.726 | 3,392.281 | 20.726 | 25,073.912 | 46,393.520 | 54.05 |
| 2030 | 6,280.740 | 1,102.769 | 5,177.971 | 2,467.081 | 3,849.034 | 24.915 | 28,370.004 | 49,300.091 | 57.55 |
| 2035 | 7,049.840 | 1,280.047 | 5,769.793 | 2,768.411 | 4,235.808 | 29.950 | 32,256.189 | 51,052.999 | 63.18 |
| 2040 | 7,880.901 | 1,512.710 | 6,368.192 | 3,088.212 | 4,471.741 | 36.003 | 37,945.729 | 51,948.012 | 73.05 |
| 2045 | 8,856.000 | 1,812.824 | 7,043.177 | 3,461.267 | 4,482.610 | 43.279 | 47,607.935 | 52,897.705 | 90.00 |

[1] *Payroll shown is pensionable pay. It does not include amounts in excess of the pay cap that is applicable to members hired on or after January 1, 2011, participating in the DB plans.*

[2] *Includes member and employer contributions. Excludes SMP contributions.*

## GRAPH 1
## PROJECTED FUNDED RATIO BASED ON STATUTORY CONTRIBUTIONS
## ACTUARIAL VALUATION AS OF JUNE 30, 2011



# TABLE 14
## PROJECTED STATUTORY CONTRIBUTIONS
## ACTUARIAL VALUATION AS OF JUNE 30, 2011
## BEFORE IMPACT OF BONDS ISSUED IN 2004
### ($ IN MILLIONS)

| | 15% of New Members to SMP | | | |
|---|---|---|---|---|
| | | | Total Contribution | |
| FYE | SURS Cont. | SMP Cont. | $ | % of Pay [1] |
| 2013 | $ 1,534.830 | $ 41.984 | $ 1,576.814 | 37.72 % |
| 2014 | 1,583.537 | 45.502 | 1,629.039 | 38.13 |
| 2015 | 1,633.640 | 47.254 | 1,680.894 | 38.46 |
| 2016 | 1,636.406 | 49.084 | 1,685.490 | 37.68 |
| 2017 | 1,650.421 | 50.975 | 1,701.397 | 37.15 |
| 2018 | 1,690.132 | 52.937 | 1,743.069 | 37.17 |
| 2019 | 1,731.326 | 54.964 | 1,786.290 | 37.18 |
| 2020 | 1,773.746 | 57.051 | 1,830.797 | 37.20 |
| 2021 | 1,817.901 | 59.147 | 1,877.048 | 37.21 |
| 2022 | 1,863.287 | 61.274 | 1,924.562 | 37.22 |
| 2023 | 1,910.040 | 63.424 | 1,973.464 | 37.24 |
| 2024 | 1,957.696 | 65.566 | 2,023.262 | 37.25 |
| 2025 | 2,006.471 | 67.698 | 2,074.168 | 37.25 |
| 2026 | 2,056.262 | 69.819 | 2,126.080 | 37.26 |
| 2027 | 2,107.078 | 71.916 | 2,178.994 | 37.27 |
| 2028 | 2,158.672 | 73.976 | 2,232.648 | 37.27 |
| 2029 | 2,210.791 | 76.015 | 2,286.807 | 37.28 |
| 2030 | 2,263.486 | 78.077 | 2,341.563 | 37.28 |

[1] *Percent of pay amounts are calculated based on pensionable pay. Pensionable pay does not include amounts in excess of the pay cap that is applicable to members hired on or after January 1, 2011, participating in the DB plans.*

# TABLE 14
## PROJECTED STATUTORY CONTRIBUTIONS
## ACTUARIAL VALUATION AS OF JUNE 30, 2011
## BEFORE IMPACT OF BONDS ISSUED IN 2004
## (CONCLUDED)
### ($ IN MILLIONS)

| | 15% of New Members to SMP | | | |
|---|---|---|---|---|
| | | | Total Contribution | |
| FYE | SURS Cont. | SMP Cont. | $ | % of Pay [1] |
| 2031 | $ 2,317.027 | $ 80.282 | $ 2,397.309 | 37.29 % |
| 2032 | 2,371.511 | 82.660 | 2,454.172 | 37.29 |
| 2033 | 2,427.196 | 85.177 | 2,512.373 | 37.30 |
| 2034 | 2,483.696 | 87.843 | 2,571.539 | 37.31 |
| 2035 | 2,540.658 | 90.620 | 2,631.279 | 37.32 |
| 2036 | 2,598.131 | 93.516 | 2,691.647 | 37.34 |
| 2037 | 2,656.379 | 96.572 | 2,752.951 | 37.35 |
| 2038 | 2,715.678 | 99.861 | 2,815.539 | 37.36 |
| 2039 | 2,776.715 | 103.366 | 2,880.081 | 37.38 |
| 2040 | 2,840.160 | 107.069 | 2,947.229 | 37.40 |
| 2041 | 2,906.526 | 110.957 | 3,017.483 | 37.41 |
| 2042 | 2,975.296 | 115.017 | 3,090.313 | 37.43 |
| 2043 | 3,046.011 | 119.253 | 3,165.264 | 37.45 |
| 2044 | 3,118.198 | 123.677 | 3,241.875 | 37.47 |
| 2045 | 3,191.572 | 128.272 | 3,319.844 | 37.49 |
| Total | $74,550.477 | $2,610.808 | $77,161.284 | |

[1] *Percent of pay amounts are calculated based on pensionable pay. Pensionable pay does not include amounts in excess of the pay cap that is applicable to members hired on or after January 1, 2011, participating in the DB plans.*

# TABLE 15
## PROJECTED STATUTORY CONTRIBUTIONS
## ACTUARIAL VALUATION AS OF JUNE 30, 2011
## INCLUDING IMPACT OF BONDS ISSUED IN 2004
### ($ IN MILLIONS)

| FYE | 15% of New Members to SMP | | | | Debt Service | | GASB Annual Required Contribution | Projected % of ARC |
|---|---|---|---|---|---|---|---|---|
| | | | Total Contribution | | | | | |
| | SURS Cont. | SMP Cont. | $ | % of Pay [1] | $ | % of Pay [1] | (ARC) | Contributed [2] |
| 2013 | $ 1,400.816 | $ 41.984 | $ 1,442.800 | 34.51 % | $ 114.754 | 2.74 % | $ 1,470.967 | 95.23 % |
| 2014 | 1,450.491 | 45.502 | 1,495.993 | 35.01 | 114.000 | 2.67 | 1,498.696 | 96.78 |
| 2015 | 1,501.682 | 47.254 | 1,548.935 | 35.44 | 113.227 | 2.59 | 1,477.591 | 101.63 |
| 2016 | 1,492.676 | 49.084 | 1,541.759 | 34.46 | 112.435 | 2.51 | 1,462.846 | 102.04 |
| 2017 | 1,498.149 | 50.975 | 1,549.125 | 33.83 | 116.476 | 2.54 | 1,471.245 | 101.83 |
| 2018 | 1,534.196 | 52.937 | 1,587.133 | 33.84 | 120.304 | 2.57 | 1,480.610 | 103.62 |
| 2019 | 1,571.589 | 54.964 | 1,626.553 | 33.86 | 123.920 | 2.58 | 1,489.311 | 105.52 |
| 2020 | 1,610.096 | 57.051 | 1,667.147 | 33.87 | 132.009 | 2.68 | 1,497.149 | 107.54 |
| 2021 | 1,650.176 | 59.147 | 1,709.323 | 33.89 | 139.615 | 2.77 | 1,504.171 | 109.71 |
| 2022 | 1,691.376 | 61.274 | 1,752.650 | 33.90 | 146.736 | 2.84 | 1,510.404 | 111.98 |
| 2023 | 1,733.815 | 63.424 | 1,797.239 | 33.91 | 153.373 | 2.89 | 1,515.401 | 114.41 |
| 2024 | 1,777.073 | 65.566 | 1,842.640 | 33.92 | 164.417 | 3.03 | 1,518.857 | 117.00 |
| 2025 | 1,821.348 | 67.698 | 1,889.046 | 33.93 | 174.604 | 3.14 | 1,520.570 | 119.78 |
| 2026 | 1,866.545 | 69.819 | 1,936.364 | 33.94 | 179.149 | 3.14 | 1,520.457 | 122.76 |
| 2027 | 1,912.674 | 71.916 | 1,984.590 | 33.94 | 183.195 | 3.13 | 1,518.273 | 125.98 |
| 2028 | 1,959.507 | 73.976 | 2,033.483 | 33.95 | 191.634 | 3.20 | 1,513.792 | 129.44 |
| 2029 | 2,006.818 | 76.015 | 2,082.833 | 33.95 | 199.325 | 3.25 | 1,506.527 | 133.21 |
| 2030 | 2,052.326 | 78.077 | 2,130.403 | 33.92 | 211.160 | 3.36 | 1,495.923 | 137.19 |

[1] *Percent of pay amounts are calculated based on pensionable pay. Pensionable pay does not include amounts in excess of the pay cap that is applicable to members hired on or after January 1, 2011, participating in the DB plans.*

[2] *Compares SURS Contribution against GASB ARC calculated using a 30-year open amortization period as a level percentage of pay.*

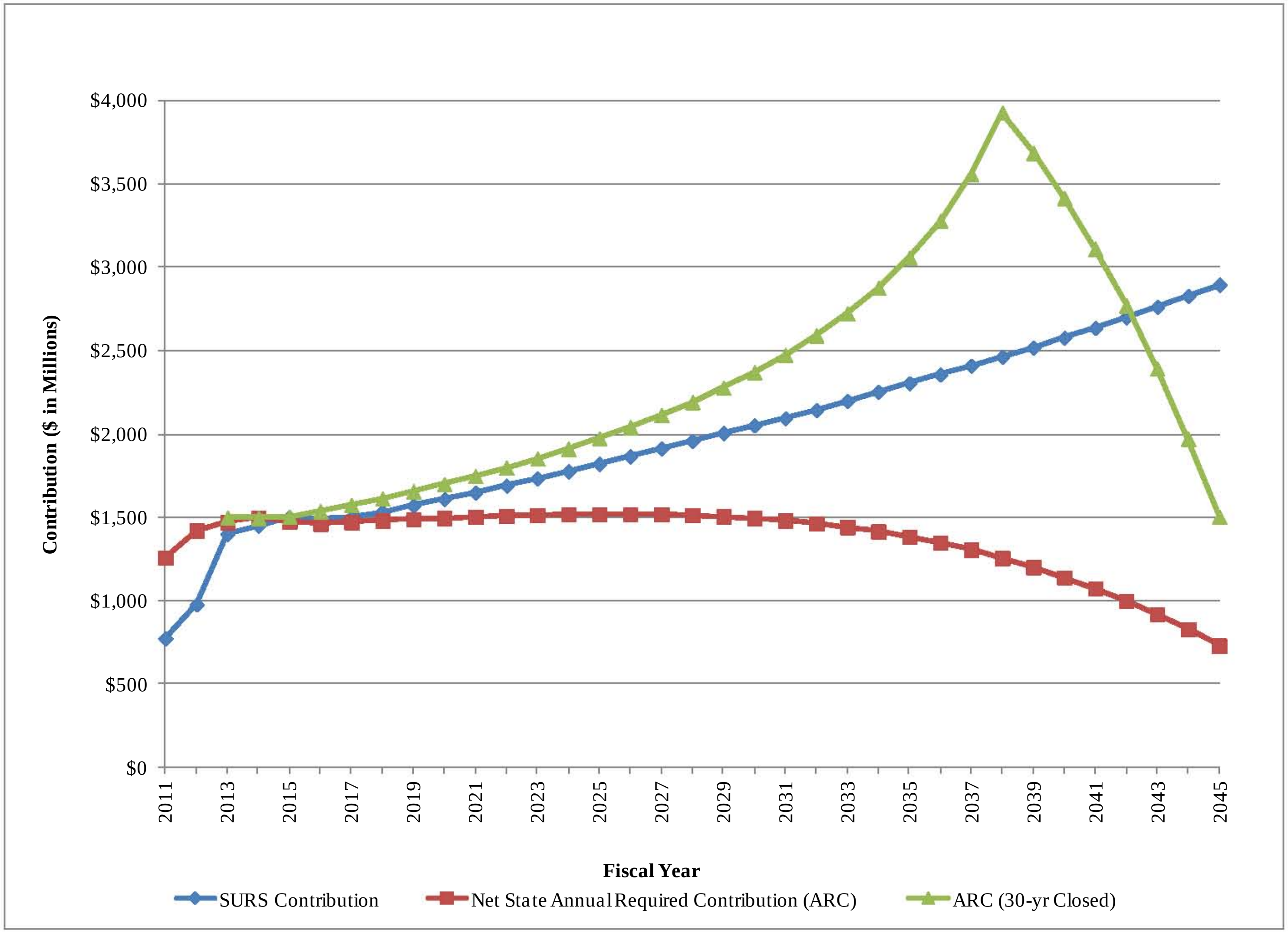
## TABLE 15
## PROJECTED STATUTORY CONTRIBUTIONS
## ACTUARIAL VALUATION AS OF JUNE 30, 2011
## INCLUDING IMPACT OF BONDS ISSUED IN 2004
## (CONCLUDED)
### ($ IN MILLIONS)

| | 15% of New Members to SMP | | | | | | GASB Annual | |
|---|---|---|---|---|---|---|---|---|
| | | | Total Contribution | | Debt Service | | Required Contribution | Projected % of ARC |
| FYE | SURS Cont. | SMP Cont. | $ | % of Pay [1] | $ | % of Pay [1] | (ARC) | Contributed [2] |
| 2031 | $ 2,095.030 | $ 80.282 | $ 2,175.312 | 33.83 % | $ 221.997 | 3.45 % | $ 1,481.712 | 141.39 % |
| 2032 | 2,144.568 | 82.660 | 2,227.228 | 33.85 | 226.944 | 3.45 | 1,463.886 | 146.50 |
| 2033 | 2,200.947 | 85.177 | 2,286.125 | 33.94 | 226.249 | 3.36 | 1,442.193 | 152.61 |
| 2034 | 2,254.544 | 87.843 | 2,342.387 | 33.99 | | | 1,416.067 | 159.21 |
| 2035 | 2,306.250 | 90.620 | 2,396.871 | 34.00 | | | 1,384.907 | 166.53 |
| 2036 | 2,358.421 | 93.516 | 2,451.937 | 34.01 | | | 1,348.352 | 174.91 |
| 2037 | 2,411.294 | 96.572 | 2,507.866 | 34.02 | | | 1,305.941 | 184.64 |
| 2038 | 2,465.122 | 99.861 | 2,564.983 | 34.04 | | | 1,257.137 | 196.09 |
| 2039 | 2,520.528 | 103.366 | 2,623.894 | 34.06 | | | 1,201.904 | 209.71 |
| 2040 | 2,578.120 | 107.069 | 2,685.188 | 34.07 | | | 1,140.569 | 226.04 |
| 2041 | 2,638.362 | 110.957 | 2,749.319 | 34.09 | | | 1,073.466 | 245.78 |
| 2042 | 2,700.787 | 115.017 | 2,815.805 | 34.11 | | | 1,000.229 | 270.02 |
| 2043 | 2,764.978 | 119.253 | 2,884.231 | 34.12 | | | 919.605 | 300.67 |
| 2044 | 2,830.504 | 123.677 | 2,954.182 | 34.14 | | | 830.226 | 340.93 |
| 2045 | 2,897.109 | 128.272 | 3,025.381 | 34.16 | | | 730.813 | 396.42 |
| Total | $67,697.916 | $2,610.808 | $ 70,308.724 | | $3,365.521 | | $ 73,674.246 | |

[1] *Percent of pay amounts are calculated based on pensionable pay. Pensionable pay does not include amounts in excess of the pay cap that is applicable to members hired on or after January 1, 2011, participating in the DB plans.*

[2] *Compares SURS Contribution against GASB ARC calculated using a 30-year open amortization period as a level percentage of pay.*

## GRAPH 2
## PROJECTED STATUTORY CONTRIBUTIONS VS. GASB ANNUAL REQUIRED CONTRIBUTIONS
## ACTUARIAL VALUATION AS OF JUNE 30, 2011




*Compares SURS Contribution against GASB ARC calculated using a 30-year open amortization period as a level percentage of pay and ARC calculated using a 30-year closed* amortization period as a level percentage of pay, which is the GRS recommended funding policy. All calculated contributions are based on the same underlying assets and liabilities that are based on making the Statutory contributions. *30-year closed period opens with 5 years remaining for illustrative purposes.*

# APPENDIX E

## ACTUARIAL METHODS AND ASSUMPTIONS

# PROJECTED UNIT CREDIT METHOD

The Projected Unit Credit Method is mandated under Section 15-155 as the funding method to be used for all purposes under SURS.

The concept of this method is that funding of benefits should occur as benefits are accrued (earned) by active members of SURS.

The Normal Cost (NC) for a fiscal year under this method is the actuarial present value of all benefits expected to be accrued during the fiscal year. The Actuarial Accrued Liability (AAL) under this method is the actuarial present value of all benefits accrued to the valuation date. To the extent that the assets of the fund are insufficient to cover the AAL, an Unfunded Actuarial Accrued Liability (UAAL) develops. Under the classical application of this method, the contribution for a year is the NC for that year plus an amount to amortize the UAAL.

Under Section 15-155, the employer/State contribution is determined such that the assets of SURS reach 90% of the AAL by the end of FY 2045.

This contribution is determined as a level percentage of pay for all years except that the contribution rates through 2010 shall grade in equal steps to the desired level contribution rate. *We have assumed the contribution would be based on pensionable (capped) payroll for members hired on or after January 1, 2011.* Pensionable pay does not include amounts in excess of the pay cap ($106,800 in 2011, increased by the lesser of 3% and 1/2 of the increase in CPI-U as measured in the preceding 12-month calendar year) that is applicable to members hired on or after January 1, 2011, participating in the defined benefit plans.

# ASSET VALUATION METHOD

Prior to the valuation as of June 30, 2009, market value of assets was used. Beginning with the June 30, 2009, valuation, the asset value is the actuarial value of assets which is calculated by recognizing 20% of the investment gain or loss (the difference between the actual investment return and the expected investment return, which is 8.5% prior to June 30, 2010, and 7.75% thereafter) on the market value of assets for each of the five following fiscal years. This method was not applied retroactively to recognize a portion of investment gains or losses from previous fiscal years.

# ACTUARIAL ASSUMPTIONS
# (MOST ADOPTED EFFECTIVE WITH THE JUNE 30, 2011 ACTUARIAL VALUATION)

***Rate of Investment Return.*** For all purposes under the system the rate of investment return is assumed to be 7.75% per annum beginning with the **June 30, 2010**, valuation. This assumption is net of investment expenses.

***Effective Rate of Interest:*** The assumed rate credited to member accounts is 7.75% per annum.

***Annual Compensation Increases.*** Each member's compensation is assumed to increase by 3.75% each year, 2.75% reflecting salary inflation and 1.00% reflecting standard of living increases. That rate is increased for members with less than 9 years of service. The total assumed increase follows:

| Service Year | Total Increase |
|---|---|
| 0 | 12.00% |
| 1 | 10.00% |
| 2 | 8.50% |
| 3 | 7.25% |
| 4 | 6.50% |
| 5 | 6.25% |
| 6 | 6.00% |
| 7 | 5.75% |
| 8 | 5.50% |
| 9-13 | 5.00% |
| 14-19 | 4.75% |
| 19-33 | 4.25% |
| 34+ | 3.75% |

***Mortality.*** The mortality assumption for retirees, beneficiaries and disabilities is based on the RP2000 Combined Mortality table, projected with Scale AA to 2017, sex-distinct, with rates multiplied by 0.80 for males and 0.85 for females. The assumed mortality rates for active members are 85 percent of the postretirement assumption for males and 60 percent for females. *Based on the most recent experience study, the current mortality assumption has an estimated margin of 10% for future mortality improvements.*

# ACTUARIAL ASSUMPTIONS
# (MOST ADOPTED EFFECTIVE WITH THE JUNE 30, 2011 ACTUARIAL VALUATION)
# (CONTINUED)

**Sample Mortality Rates**

| | Postretirement | | Preretirement | |
|---|---|---|---|---|
| **Age** | **Male** | **Female** | **Male** | **Female** |
| 35 | 0.0568% | 0.0335% | 0.0483% | 0.0201% |
| 40 | 0.0753% | 0.0464% | 0.0640% | 0.0278% |
| 45 | 0.0966% | 0.0726% | 0.0821% | 0.0436% |
| 50 | 0.1256% | 0.1064% | 0.1068% | 0.0639% |
| 55 | 0.2093% | 0.2014% | 0.1779% | 0.1209% |
| 60 | 0.4103% | 0.3946% | 0.3488% | 0.2367% |
| 65 | 0.8018% | 0.7576% | 0.6815% | 0.4546% |
| 70 | 1.3740% | 1.3068% | 1.1679% | 0.7841% |
| 75 | 2.3817% | 2.0841% | 2.0244% | 1.2505% |

***Disability.*** A table of disability incidence with sample rates follows:

| Age | Males/Females |
|---|---|
| 20 | 0.050% |
| 25 | 0.062% |
| 30 | 0.075% |
| 35 | 0.095% |
| 40 | 0.145% |
| 45 | 0.195% |
| 50 | 0.270% |
| 55 | 0.345% |
| 60 | 0.420% |
| 65 | 0.495% |
| 70 | 0.570% |

# ACTUARIAL ASSUMPTIONS
# (MOST ADOPTED EFFECTIVE WITH THE JUNE 30, 2011 ACTUARIAL VALUATION)
# (CONTINUED)

***Retirement.*** Upon eligibility, active members are assumed to retire as follows:

| | Members Hired Before January 1, 2011 and Eligible for | | Members Hired on or after January 1, 2011 and Eligible for | |
|---|---|---|---|---|
| **Age** | **Normal Retirement** | **Early Retirement** | **Normal Retirement** | **Early Retirement** |
| Under 50 | 40.0% | - | - | - |
| 51 | 38.0 | - | - | - |
| 52 | 38.0 | - | - | - |
| 53 | 38.0 | - | - | - |
| 54 | 34.0 | - | - | - |
| 55 | 32.0 | 7.0% | - | - |
| 56 | 26.0 | 5.0 | - | - |
| 57 | 26.0 | 4.5 | - | - |
| 58 | 26.0 | 5.5 | - | - |
| 59 | 26.0 | 6.0 | - | - |
| 60 | 11.0 | - | - | - |
| 61 | 11.0 | - | - | - |
| 62 | 13.0 | - | - | 35.0% |
| 63 | 13.0 | - | - | 15.0 |
| 64 | 13.0 | - | - | 15.0 |
| 65 | 17.0 | - | - | 15.0 |
| 66 | 15.0 | - | - | 15.0 |
| 67 | 15.0 | - | 50.0% | - |
| 68 | 15.0 | - | 35.0 | - |
| 69 | 15.0 | - | 30.0 | - |
| 70-79 | 30.0 | - | 30.0 | - |
| 80+ | 100.0 | - | 100.0 | - |

Members that retire are assumed to elect the most valuable option on a present value basis – refund of contributions (or portable lump sum retirement, if applicable) or a retirement annuity.

# ACTUARIAL ASSUMPTIONS
# (MOST ADOPTED EFFECTIVE WITH THE JUNE 30, 2011 ACTUARIAL VALUATION)
# (CONTINUED)

***General Turnover.*** A table of termination rates based on experience in the 2006-2010 period. The assumption is a table of turnover rates by years of service. A sample of these rates follows:

| Years of Service | All Members |
|---|---|
| 0 | 22.0% |
| 1 | 22.0 |
| 2 | 16.0 |
| 3 | 14.0 |
| 4 | 12.0 |
| 5 | 10.5 |
| 6 | 9.0 |
| 7 | 7.5 |
| 8 | 6.5 |
| 9 | 6.0 |
| 10 | 5.5 |
| 11 | 4.5 |
| 12 | 4.0 |
| 13 | 3.7 |
| 14 | 3.2 |
| 15 | 3.0 |
| 16 | 2.6 |
| 17 | 2.3 |
| 18 | 2.1 |
| 19 | 2.0 |
| 20 | 1.7 |
| 21 | 1.5 |
| 22 | 1.5 |
| 23 | 1.5 |
| 24 | 1.5 |
| 25 | 1.5 |
| 26 | 1.5 |
| 27 | 1.5 |
| 28 | 1.5 |
| 29 | 1.5 |

Part time members with less than 3 years of service (all members classified as part time for valuation purposes) are assumed to terminate at the valuation date.

Members that terminate with at least 5 years of service are assumed to elect the most valuable option on a present value basis – refund of contributions or a deferred benefit.

# Actuarial Assumptions (Most Adopted Effective with the June 30, 2011 Actuarial Valuation) (Continued)

***Operational Expenses.*** The amount of operational expenses for administration incurred in the latest fiscal year are supplied by SURS staff and incorporated in the Normal Cost.

***Marital Status.*** Members are assumed to be married in the following proportions:

| Age | Males | Females |
|---|---|---|
| 20 | 25 % | 40 % |
| 30 | 70 | 75 |
| 40 | 80 | 80 |
| 50 | 85 | 80 |
| 60 | 85 | 70 |

***Spouse Age.*** The female spouse is assumed to be 3 years younger than the male spouse.

***Load on Final Average Salary.*** No load is assumed to account for higher than assumed pay increases in final years of employment before retirement.

***Load on Liabilities for Service Retirees With Non-finalized Benefits.*** A load of 10% on liabilities for service retirees whose benefits have not been finalized as of the valuation date is assumed to account for finalized benefits that on average are 10% higher than 100% of the preliminary estimated benefit.

***Valuation of Inactives.*** An annuity benefit is estimated based on information provided by staff for members with five or more years of service.

***Assumption for Missing Data.*** Members with an unknown gender are assumed to be female. Active and inactive members with an unknown date of birth are assumed to be 30 years old at the valuation. An assumed spouse date of birth is calculated for current service retirees in the traditional plan for purposes of calculating future survivor benefits. The female spouse is assumed to be 3 years younger than the male spouse. 70% of current total male retirees and 80% of current total female retirees in the traditional plan that have not elected a survivor refund are assumed to have a spouse at the valuation date.

# ACTUARIAL ASSUMPTIONS
# (MOST ADOPTED EFFECTIVE WITH THE JUNE 30, 2011 ACTUARIAL VALUATION)
# (CONTINUED)

***Reciprocal Service.*** Reciprocal service is included for current inactive members for purposes of determining vesting eligibility and eligibility age to commence benefits. The recently updated actuarial assumptions (including retirement and termination rates) were based on SURS service only.

Therefore, reciprocal service was not included for current active members. Reciprocal service will be collected and analyzed in the future and will be considered in the next experience review.

***Projection Assumptions:***
The number of total active members will remain the same as the total number of active members in the current valuation throughout the projection period.

15% of total future hires will elect to participate in the Self Managed Plan.

# APPENDIX F

## SUMMARY OF BENEFIT PROVISIONS OF TRADITIONAL SURS

**It should be noted that the purpose of this Appendix is to describe the benefit structures of SURS for which actuarial values have been generated. There is no description of the Self Managed Plan (SMP) and many portions of the defined plans are described in a manner which is not legally complete or precise.**

**It is not our intent to provide an exhaustive description of all benefits provided under SURS or the policies and procedures utilized by SURS staff. A more precise description of the provisions of SURS is contained in the Member's Guide, published by SURS staff. Of course, the statute is controlling.**

# General

## Plans

There are two defined benefit plans available under SURS, the Traditional Plan and the Portable Plan, and one defined contribution plan, the Self Managed Plan (SMP). A Member must select one of these plans within the first six months of participation. If no choice is made in that time, the Traditional Plan is deemed chosen. Members hired on or after January 1, 2011, are eligible to choose one of the benefit plans.

The Self Managed Plan is a defined contribution plan under which members contribute 8.0% of compensation and the State contributes 7.6% of compensation. A portion of the employer contribution is used to fund disability benefits for SMP participants. Members hired on or after January 1, 2011, that participate in the SMP are not subject to the pay cap established under Public Act 96-0889.

The provisions of the defined benefit plans are identical in many areas. The description below is primarily of the Traditional Plan. Where different, the Portable plan provisions will be described in *italics.*

## Member Contributions

Most members contribute a total of 8% of compensation, broken down as follows:

| | |
|---|---|
| Retirement Annuity | 6.5% |
| Survivor Benefits | 1.0% |
| Annual Increases in Retirement Benefits | 0.5% |

Police officers and firefighters contribute a total of 9.5% of compensation, with the additional 1.5% allocated to the retirement annuity.

*Portable Plan members contribute a total of 8% of compensation, but the breakdown set out above does not apply.*

Contributions for members hired on or after January 1, 2011, are assumed not to be made on pay in excess of $106,800 in 2010, increased by the lesser of 3% and 1/2 of the increase in CPI-U as measured in the preceding 12-month calendar year.

Since January 1, 1981, the member contributions under SURS have been "picked up" by employers.

## Effective Rate of Interest

The interest rate credited to member contribution accounts for most purposes under the system is called the Effective Rate of Interest ("ERI"). Effective for the 2006 fiscal year, the ERI for the purpose of determining the money purchase benefit is established annually by the State Comptroller. The ERI for purposes other than the money purchase benefit is certified annually by the SURS Board and may differ from the rate established by the State Comptroller.

For the purposes of withdrawal of contributions at termination by Traditional Plan Members, this rate is not greater than 4.5% by statute.

## RETIREMENT BENEFITS

### Normal Retirement:

#### Eligibility

For police officers and firefighters, separation from service on or after the attainment of the earlier of:

1. Age 55 with 20 years of service, or
2. Age 50 with 25 years of service.

For other members hired before January 1, 2011, separation from service on or after attainment of the earlier of:

1. Age 62 with 5 years of service,
2. Age 60 with 8 years of service, and
3. 30 years of service regardless of age.

For members hired on or after January 1, 2011, separation from service on or after attainment age 67 with 10 years of service.

#### Initial Benefit Amount

There are 3 alternate formulae. The initial benefit is the largest produced by one of the three:

1. General Formula: The following percentages of high 4 consecutive year average compensation for each year of service:

| Year of Service | General | Police/Fire |
|---|---|---|
| 1st 10 Years | 2.20 % | 2.25 % |
| Next 10 Years | 2.20 | 2.50 |
| Over 20 | 2.20 | 2.75 |

For members hired on or after January 1, 2011, the above percentages of high final eight consecutive year average compensation within the last 10 years of service for each year of service. Final rate of earnings is limited to $106,800 in 2010, which is the Social Security Taxable Wage Base (SSTWB). The maximum final rate of earnings will be increased by the lesser of 3% and 1/2 of the increase in CPI-U as measured in the preceding 12-month calendar year. We have assumed the limit applies to individual pay amounts that are used to develop the final average compensation.

2. Money Purchase Formula:

   a) The member contributions for retirement benefits accumulated with interest at the ERI, plus

   b) An imputed employer contribution match at $1.40 per dollar of member contribution accumulated with interest at the ERI.

   c) The total of the accumulations in (a) and (b) is converted into an annuity using a life annuity factor that takes into account neither the automatic 50% spousal survivor benefit nor the automatic annual increases.

   Members hired on or after July 1, 2005 no longer receive the Money Purchase Formula under the plan.

3. Minimum Benefit - A benefit for each year of service, up to 30, based on final annual pay, as follows:

| | |
|---|---|
| Under 3,500 | $ 8 |
| $3,500 - $4,500 | 9 |
| $4,500 - $5,500 | 10 |
| $5,500 - $6,500 | 11 |
| $6,500 - $7,500 | 12 |
| $7,500 - $8,500 | 13 |
| $8,500 - $9,500 | 14 |
| Over $9,500 | 15 |

   Minimum Retirement Annuity – No retiree shall receive a retirement annuity less than $25 per month for each year of service up to 30. The comparable benefit for survivor benefit recipients is $17.50 per month for each year of service up to 30.

**Maximum Benefit**

80% of high 4-year average compensation for members hired before January 1, 2011, and 80% of final 8-year average for members hired on or after January 1, 2011.

Contribution waivers are applicable to members whose benefits are capped at 80% of final average compensation. Member contributions made once the maximum benefit is achieved are refunded to the member with interest (at the Effective Rate of Interest).

The present value of the benefits for pay increases in excess of 6% during the last four years prior to retirement will be paid by the employer. The employer will pay this amount in a lump sum to the Retirement System.

**Benefit Duration**

The Normal Retirement benefit is payable for the lifetime of the retired member. If the retiree under the Traditional Plan has a spouse at date of retirement and if that spouse survives the retiree the spouse will receive, upon the death of the retiree, a survivor benefit equal to 50% of the monthly benefit being paid to the retiree as of the date of death. Such benefit will continue for the lifetime of the surviving spouse.

The survivor benefit for members hired on or after January 1, 2011, is equal to 66 2/3% of the monthly benefit being paid to the retiree as of the date of death.

*For retirees under the Portable Plan, the normal form of benefit is an annuity which is payable for the lifetime of the retiree only. Benefit forms, which provide for continuation of the benefit to a surviving spouse after the death of the retiree, are available as options. Those selecting such an option will have their benefit reduced to cover the cost of the option.*

*Portable Plan members may also elect to receive their retirement benefit as a lump sum equal to member contributions with an equal employer match (if have at least five years of service), accumulated with interest (at the Effective Rate of Interest that is certified annually by the SURS Board).*

### Annual Increases

For members hired before January 1, 2011, each January 1 subsequent to retirement date the monthly benefit being paid each retiree shall be increased by 3%. The adjustment for the first January after retirement shall be proportional based on the portion of the year retired.

For members hired on or after January 1, 2011, each January 1 subsequent to retirement date the monthly benefit being paid each retiree shall be increased fifty percent of the Consumer Price Index (CPI) up to a maximum of 3% applied to the original benefit. The first increase will be granted upon the later of the attainment of age 67 or the first anniversary of the commencement of the annuity.

## Early Retirement

### Eligibility

For members hired before January 1, 2011, other than police and fire employees, separation from service on or after attainment of age 55 with 8 years of service but not eligible for Normal Retirement. For members hired on or after January 1, 2011, separation from service on or after attainment of age 62 with 10 years of service but not eligible for Normal Retirement.

### Benefits

The benefit amounts and all terms of benefit payment are the same as that for Normal Retirement, except that the benefit amounts calculated under the General Formula and the Minimum Formula shall be reduced by .5% for each month by which the retirement date precedes the 60$^{th}$ birthday for members hired before January 1, 2011. The Minimum Formula shall be reduced by .5% for each month by which the retirement date precedes the 67th birthday for members hired on or after January 1, 2011.

# BENEFITS ON DEATH BEFORE RETIREMENT

## Survivor Benefits – Traditional Plan Only

### Eligibility

Death of an active member with at least 1.5 years of service or a terminated member with at least 10 years of service. For this purpose, service under the State Employees' Retirement System, the Teachers' Retirement System of the State of Illinois, and the Public School Teachers' Pension and Retirement Fund of Chicago is recognized.

### Benefits

For members hired before January 1, 2011, an annuity to the surviving spouse equal to the greater of:

1. 50% of the benefit accrued to the date of the death of the member, and
2. The applicable benefit from the following list:
    a) $400 per month to a single survivor (spouse, child or dependent parent), or
    b) $600 to two or more survivors.

For members hired on or after January 1, 2011, an annuity to the surviving spouse equal to 66 2/3% of the participant's earned retirement annuity at the date of death.

### Benefit Duration

Surviving spouse may receive a lifetime benefit commencing at the later of the member's date of death and the spouse's attainment of age 50. Benefits are payable to a spouse at an earlier date so long as there is a surviving dependent, unmarried child under age 18 (over 18 if disabled).

### Annual Increases

For members hired before January 1, 2011, each January 1 subsequent to retirement date the monthly benefit being paid each survivor annuity recipient shall be increased by 3%. The adjustment for the first January after retirement shall be proportional.

For members hired on or after January 1, 2011, each January 1 subsequent to retirement date the monthly benefit being paid each survivor annuity recipient shall be increased fifty percent of the Consumer Price Index (CPI) up to a maximum of 3% of the originally granted survivor annuity. The first increase will be granted upon January 1 following the first anniversary of the commencement of the annuity.

## Death Benefit – Portable Plan

Upon the death of a member of the Portable Plan prior to retirement, the member's survivors will receive a benefit whose value is the larger of:

1. A Pre-Retirement Survivor Annuity, or
2. A refund of all member contributions plus interest at the full Effective Rate, plus, if the member has at least 5 years of service at death, a like amount of imputed employer contributions.

## Lump Sum Death Benefit – Traditional and Portable Plan

### Eligibility

Death of member prior to retirement.

### Benefit

The following are payable to the member's beneficiary:

1. Refund of accumulated member contributions for retirement and annual adjustment,
2. $1,000
3. If survivor benefits not payable,
   a) Refund of the accumulated member contribution for survivor benefits, and
   b) $5,000 to a dependent beneficiary or $2,500 to a non-dependent beneficiary

# Benefits For Disability

## Disability Benefit

### Eligibility

Disablement after completing 2 years of service. The service requirement is waived if the disablement is accidental.

Disability definition - inability to perform the duties of "own occupation".

Pregnancy and childbirth are, by definition, disablement.

### Benefit

50% of the basic compensation paid at date of disablement. This base benefit level is offset dollar for dollar by each of the following:

1. Earnings while disabled in excess of the disability benefit.
2. Other disability insurance either fully or partially employer provided.
3. Worker's compensation benefits.

### Duration of Benefit

Benefits become payable on the later of the termination of salary and sick leave, or the 61st day after disablement and continue to the earlier of the following:

1. Recovery or death
2. Benefits paid equal 50% of total compensation during the period of SURS service
3. If disablement occurs prior to age 65, the attainment of age 70
4. If disablement occurs at or after attainment of age 65, completion of 5 years in disablement.

If, at discontinuance of the disability benefit, the member is eligible for a retirement benefit (based on service, which includes the period of disability), the member may retire and receive that benefit.

### Annual Increases

For members hired before January 1, 2011, each January 1 subsequent to retirement date the monthly benefit being paid each retiree shall be increased by 3%. The adjustment for the first January after retirement shall be proportional.

For members hired on or after January 1, 2011, each January 1 subsequent to retirement date the monthly benefit being paid each retiree shall be increased fifty percent of the Consumer Price Index (CPI) up to a maximum of 3% applied to the original benefit. The first increase will be granted upon the later of the attainment of age 67 or the first anniversary of the commencement of the annuity.

## Disability Retirement Annuity

### Eligibility

Continuing disablement after discontinuation of the disability benefit as a result of reaching the "50% of total earnings" limitation. Disability is defined in accordance with the Social Security disability definition.

### Benefit

35% of the compensation being earned at disablement.

### Duration of Benefit

Benefits become payable upon discontinuance of the disability benefit and continue to the earlier of the following:

1. Recovery or death
2. Election to receive a retirement benefit

### Annual Increases

For members hired before January 1, 2011, each January 1 subsequent to retirement date the monthly benefit being paid each retiree shall be increased by 3%. The adjustment for the first January after retirement shall be proportional.

For members hired on or after January 1, 2011, each January 1 subsequent to retirement date the monthly benefit being paid each retiree shall be increased fifty percent of the Consumer Price Index (CPI) up to a maximum of 3% of the originally granted benefit. The first increase will be granted upon the later of the attainment of age 67 or the first anniversary of the commencement of the annuity.

# BENEFITS FOR DEFERRED MEMBERS

**Eligibility**

For members hired before January 1, 2011, separation from employment with at least 5 years of service and separation from employment with at least 10 years of service for members hired on or after January 1, 2011.

**Benefit**

Benefit as defined for normal retirement purposes, but calculated based on final average compensation and service at date of termination.

**Commencement of Benefit**

Benefits commence when member reaches the age condition for either normal or early retirement.

**Annual Increases**

For members hired before January 1, 2011, each January 1 subsequent to retirement date the monthly benefit being paid each retiree shall be increased by 3%. The adjustment for the first January after retirement shall be proportional.

For members hired on or after January 1, 2011, each January 1 subsequent to retirement date the monthly benefit being paid each retiree shall be increased fifty percent of the Consumer Price Index (CPI) up to a maximum of 3% applied to the original benefit. The first increase will be granted upon the later of the attainment of age 67 or the first anniversary of the commencement of the annuity.

# APPENDIX G

## GLOSSARY OF TERMS

# GLOSSARY OF TERMS

***Actuarial Value of Assets (AVA).*** Smoothed value of assets that recognizes the difference between the expected investment return using the valuation assumption of 8.0 percent and the actual investment return over a five-year period. Dampens volatility of asset value over time.

***Actuarial Accrued Liability (AAL).*** The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability."

***Actuarial Assumptions.*** Estimates of future plan experience such as investment return, expected lifetimes and the likelihood of receiving a pension from the Pension Plan. Demographic, or "people" assumptions, include rates of mortality, retirement and separation. Economic, or "money" assumptions, include expected investment return, inflation and salary increases.

***Actuarial Cost Method.*** A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

***Actuarial Present Value of Future Plan Benefits.*** The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

***Amortization.*** Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

***Annual Required Contribution.*** The sum of the normal cost and amortization of the unfunded actuarial accrued liability over a period not to exceed 30 years. Currently required for accounting purposes by the Governmental Accounting Standards Board (GASB).

***Asset Return.*** The net investment return for the asset divided by the mean asset value. Example: if $1.00 is invested and yields $1.08 after a year, the asset return is 8.00 percent.

***Funded Ratio.*** The actuarial value of assets divided by the actuarial accrued liability. Measures the portion of the actuarial accrued liability that is currently funded.

***Market Value of Assets (MVA).*** The value of assets currently held in the trust available to pay for benefits of the Pension Plan. Each of the investments in the trust is valued at market price which is the price at which buyers and sellers trade similar items in the open market

# GLOSSARY OF TERMS

***Normal Cost (NC).*** The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

***Unfunded Actuarial Accrued Liability (UAAL).*** The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability."