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Program Review

Florida Retirement System Pension Plan Fully Funded and Valuation Met Standard

Report No. 06-38 April 2006

Office of Program Policy Analysis and Government Accountability

an office of the Florida Legislature

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Gary R. VanLandingham, OPPAGA Director

The Florida Legislature

OFFICE OF PROGRAM POLICY ANALYSIS AND GOVERNMENT ACCOUNTABILITY

Gary R. VanLandingham, Director

April 2006

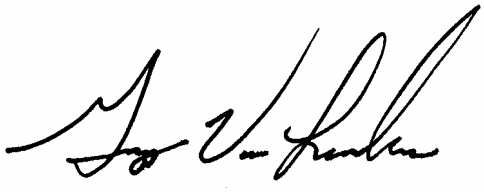
The President of the Senate,
the Speaker of the House of Representatives,
and the Joint Legislative Auditing Committee

Section 112.658, *Florida Statutes*, directs the Office of Program Policy Analysis and Government Accountability to review the actuarial valuation of the Florida Retirement System pension plan to determine whether the valuation complies with the Florida Protection of Public Employee Retirement Benefits Act, Ch. 112, Part VII, *Florida Statutes*.

The results of this review are presented to you in this report. To complete the review, we contracted with Gabriel, Roeder, Smith & Company to serve as our actuarial consultant. Chuck Hefren and Jeanine King conducted the review under the supervision of Kara Collins-Gomez.

We wish to express our appreciation to the staff of the Florida Department of Management Services for their assistance.

Sincerely,



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Summary

Florida Retirement System Pension Plan Fully Funded and Valuation Met Standards

The Florida Retirement System pension plan continues to be fully funded. The 2005 actuarial valuation determined that the plan's assets exceed its liabilities, with a surplus of $8.8 billion as of July 1, 2005. However, In Fiscal Year 2003-04, the pension plan experienced an actuarial loss of $3.07 billion; this decline in funding status is attributable in part to implementation of the Rate Stabilization Mechanism and to greater than expected increases in actuarial liabilities. The 2005 actuarial valuation also shows that the plan's funding status (as measured by the ratio of its assets to liabilities) has experienced a decline over the last six fiscal years (from 118% in Fiscal Year 1999-00 to 109% in Fiscal Year 2004-05).

Our actuarial consultant, Gabriel, Roeder, Smith & Company, concluded that the 2005 valuation was made in accordance with relevant state laws and rules and actuarial standards. It further concluded that the assumptions and methods used in the 2005 valuation were generally reasonable.

However, our consultant also made several technical recommendations and observations. Our consultant recommended that the department's consulting actuary include a more detailed analysis of the causes of gains and losses to the system's liabilities, which would enable an outside actuary to better assess the factors causing recent gains and losses. For example, our consultant believes that the valuation could be improved by providing prior year results along with side-by-side current year results as appropriate. This information would provide a ready comparison both in terms of changes in absolute value and percentage changes (page 27). [1]

Additionally, our consultant recommended that additional analysis of the causes of the greater than expected increase in actuarial liabilities be conducted. For example, our consultant believes that additional analysis and detail is warranted for the liability loss of $1.317 billion that was attributed to inactive data clean-up (pages 53-54).

Based on observations made by our consultant and our review of the 2005 valuation and experience study, we made two additional recommendations. We continue to recommend that all information required for actuarial reports for local public employee retirement systems as specified in Ch. 60T-1, *Florida Administrative Code,* also be included in the FRS actuarial valuation report (pages 26-32). We also recommend

[1] Suggestions of key valuation disclosures are provided in Chapter 60T-1.003(4)(h), *F.A.C.*

that the Legislature, the Department of Management Services, and the department's consulting actuary continue to closely monitor the FRS pension plan's funding status.

Gabriel, Roeder, Smith & Company's report on the 2005 actuarial valuation is presented in its entirety in Appendices A and B, on pages 8 and 53, respectively. The Secretary of the Department of Management Services provided a written response to our preliminary report. The Secretary described actions the department is taking to implement the actuary's recommendations. See Appendix C, page 55, for the response.

Florida Retirement System Pension Plan Fully Funded and Valuation Met Standards

Scope

Section 112.658, *Florida Statutes*, directs the Office of Program Policy Analysis and Government Accountability (OPPAGA) to review the 2005 actuarial valuation of the Florida Retirement System pension plan to determine whether it complies with provisions of the Florida Protection of Public Employee Retirement Benefits Act. [2] The act establishes reporting and disclosure standards for actuarial reports on state and local government retirement plans. These reports must address the adequacy of employer contribution rates, assess the plan's assets and projected liabilities, and use actuarial cost methods approved by the Employee Retirement Income Security Act of 1974 and as permitted under regulations prescribed by the U.S. Secretary of the Treasury. The act requires OPPAGA to use the same actuarial standards the Department of Management Services uses to monitor local government pension plans.

Our review objectives were to determine whether the Department of Management Services' consulting actuary made the 2005 actuarial valuation of the Florida Retirement System pension plan using generally accepted and statutorily required standards, methods, and procedures; whether the valuation's results were reasonable; and whether the plan continued to have sufficient assets to pay future benefits when due. To complete this review, we contracted with Gabriel, Roeder, Smith & Company to serve as our actuarial consultant.

[2] Sections 112.60 to 112.67, *F.S.*

Background

Florida law requires the Department of Management Services to cause an actuarial valuation of the Florida Retirement System (FRS) pension plan to be made annually with the results reported to the Legislature by December 31 prior to the next legislative session. [3]

Actuarial valuations are made for several reasons:

- to determine the contribution rates needed to cover the plan's normal costs (the percentage of salary needed to be contributed each year to cover the cost of future benefits owed system members);
- to determine the contribution rates needed to amortize any unfunded actuarial liability (the amount of pension liabilities not covered by contributions made at the normal cost rate or by investment of plan assets); and
- to assess the system's funding status (the ability of system assets to cover its liabilities).

The FRS pension plan provides benefits to state employees and employees of local school districts, counties, certain cities, community colleges, and state universities. Most of the plan's active members are not state employees. For example, in Fiscal Year 2003-04, school district employees composed 48% of the plan's active members, state employees composed 22%, county employees composed 23%, city and special district employees composed 4%, and community college employees composed 3%. [4]

Over the past 24 years, the plan has experienced significant growth overall in the number of active members and annuitants (retirees or their beneficiaries receiving retirement payments). Between Fiscal Years 1980-81 and 2004-05, the number of active system members increased from 393,894 to 598,063 (52%). During this same period, the number of system annuitants increased from 59,533 to 236,681 (398%). Exhibit 1 shows the growth in active members and annuitants since 1992-93.

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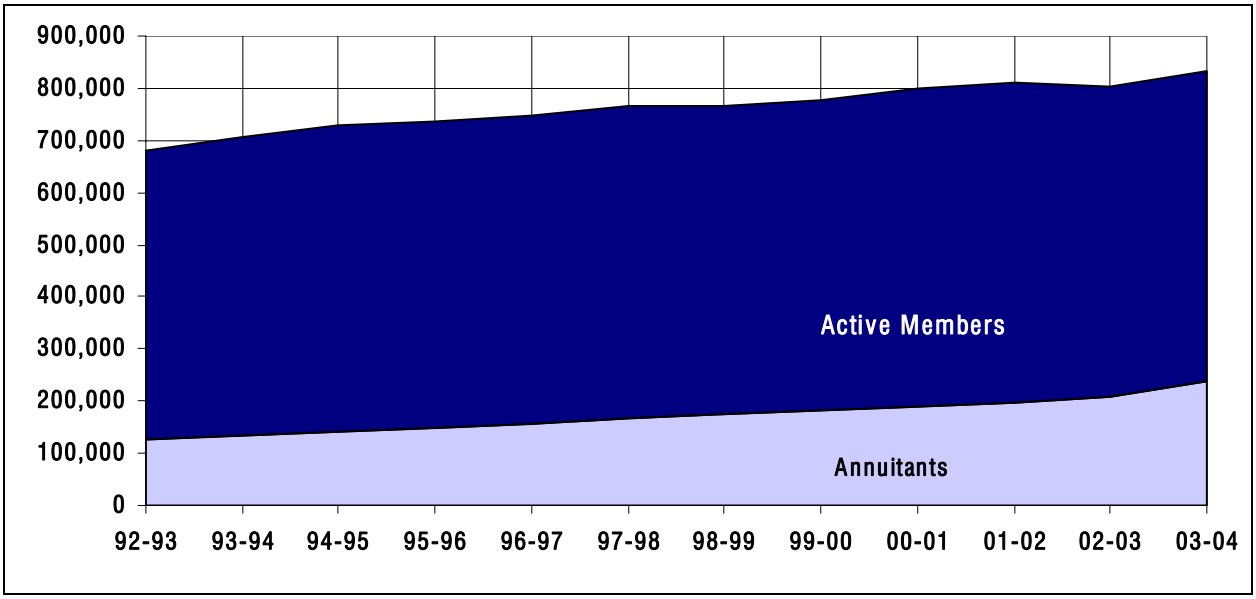
[3] Florida Retirement System members may join one of two retirement benefit options—the pension plan or the investment plan. The FRS pension plan is a defined benefit plan, meaning that employer contributions to employees' retirement benefits are invested by the employer. The employer guarantees a certain level of benefit payment and bears the risk that investment returns will not support that level of benefits. Participants' retirement benefits are based upon a formula taking into account factors such as their salary levels, years of service, compensation, and FRS membership class. The investment plan, or Public Employee Optional Retirement Program (PEORP), is a defined contribution plan. Investment plan participants are guaranteed a certain level of contributions from their employers and the participants select how these funds will be invested from a list of authorized investment accounts. Participants bear the risk of poor investment returns, but after meeting certain requirements, participants can take their retirement accounts with them if they no longer work with an employer participating in the FRS. Current election percentages into the investment plan are around approximately 7.5% of total active membership.

[4] The Fiscal Year 2003-04 FRS annual report contains the most recent data available on the sources of pension plan membership. This report combines data on State University System employees with data for state employees.

Despite a small increase during Fiscal Year 2004-05 (687), the number of active members has declined since June 30, 2002, from 611,178 to 598,063 on June 30, 2005. [5] During the same period, the number of annuitants increased from 198,054 to 236,681.

Exhibit 1
The Number of FRS Members and Annuitants Has Increased Since Fiscal Year 1992-93 [1]



[1] Data presented in this exhibit excludes (1) FRS pension plan members who are in the Deferred Retirement Option Program (DROP) and (2) terminated vested members (persons who are vested and are no longer working for a government entity participating in the system, but have not begun to receive retirement benefits). The 2005 actuarial valuation indicates that the FRS pension plan has 31,450 DROP members and 74,864 terminated vested members as of July 1, 2005.

Source: Division of Retirement documents and the Florida Retirement System Actuarial Valuation as of July 1, 2005.

The Department of Management Services' Division of Retirement administers the Florida Retirement System pension plan. Pension benefits and all Division of Retirement operating expenses are paid from revenues deposited in the Florida Retirement System Trust Fund. For Fiscal Year 2005-06, the Legislature provided the Division of Retirement spending authority of $30.6 million to operate the division. [6]

The State Board of Administration invests FRS pension plan assets. As of June 30, 2005, the market value of pension plan assets was $110.2 billion. During Fiscal Year 2004-05, the Florida Retirement System paid $5.2 billion in pension payments to retired, disabled, or beneficiary members.

The department contracted with Milliman USA to conduct the plan's 2005 actuarial valuation.

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[5] During Fiscal Year 2002-03, FRS members were required to choose between staying in the pension plan or joining the recently created investment plan.

[6] The Division of Retirement's operating budget includes $14 million in general revenue to pay benefits for some small, closed retirement systems.

Findings

The pension plan's 2005 valuation was made in accordance with standards, and its assumptions and methods are reasonable

Our consulting actuary Gabriel, Roeder, Smith & Company concluded that the assumptions and methods used in the 2005 valuation were reasonable and generally complied with relevant state laws and rules and actuarial standards. However, while reasonable, the inflation rate assumption of 3% is at the lower end of the range of reasonable inflation assumptions. For calendar year 2005, inflation was 3.4%.

In addition, our consulting actuary noted that the treatment of the Deferred Retirement Option Program (DROP) is nontraditional and could conflict with government accounting standards and generally accepted actuarial standards of practice. Specifically, the consulting actuary reported that two methods were used to treat DROP. One method was used to determine the effect of DROP on the actuarial valuation and for measurement of surplus, while a separate method was used to determine the required contribution for each employee class. The method used to determine the effect on the actuarial valuation does not reflect the probability of future DROP participation by active members. Use of a method that factors in the future DROP participation by active members would have resulted in a $1.396 billion reduction in the reported July 1, 2005, surplus, from $8.8 billion to $7.4 billion.

The Gabriel, Roeder, Smith & Company report on the 2005 actuarial valuation is presented in its entirety in Appendix A.

The pension plan continues to be fully funded in 2005

Actuarial valuations provide a means to assess whether a pension plan is making progress in improving its funding status. One indicator of a plan's funding status is the sufficiency of its assets in covering benefit liabilities.

The FRS pension plan continues to be fully funded, with assets that exceed its liabilities. [7] The 2005 valuation determined that the actuarial value of the plan's assets exceeded its liabilities by $8.8 billion as of July 1, 2005. [8] As shown in Exhibit 2, the plan's ratio of assets to liabilities significantly increased from Fiscal Year 1982-83 to 2004-05 (from 50% to 109%). This improvement primarily was due to significantly higher than expected investment returns resulting from the exceptional performance of the stock market during the 1980s and 1990s and member salary increases being lower than expected.

Although the pension plan is fully funded, its funding status has experienced a decline over the last six fiscal years. This decline in funding status is attributable in part to implementation of the Rate Stabilization Mechanism by the Legislature in 2000. [9] The Rate Stabilization Mechanism was designed to recover a portion of the surplus through reduced employer contributions while minimizing the risk of future increases in contribution rates. The plan's ratio of assets to liabilities declined from 118% in Fiscal Year 1999-00 to 109% in Fiscal Year 2004-05.

In Fiscal Year 2004-05, the pension plan experienced an actuarial loss of $3.07 billion, which was $2.51 billion greater than expected. The primary reason for the actuarial loss was greater than expected increases in actuarial liabilities. In Fiscal Year 2004-05, the actuarial liabilities increased by $7.34 billion, which was $2.74 billion more than anticipated based on the current economic and demographic assumptions. Factors such as larger than expected salary increases, transfers between membership

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[7] The 2005 valuation produced an actuarial surplus of $9 billion. The surplus represents the difference between the actuarial value of assets ($111.5 billion) and the actuarial accrued liability ($102.5 billion). The actuarial value of assets is based on a five-year averaging methodology that is designed to attenuate fluctuations in asset values. The actuarial accrued liability represents the difference between the present value of future benefits ($127.3 billion) and the present value of future employer contributions ($24.7 billion). The present value of future benefits incorporates projected pension plan benefit payments and associated expenses. The present value of future employer contributions is based on normal costs, which are the percentage of salary that if paid from the year of entry to the year of retirement would fully fund a member's projected benefits at retirement.

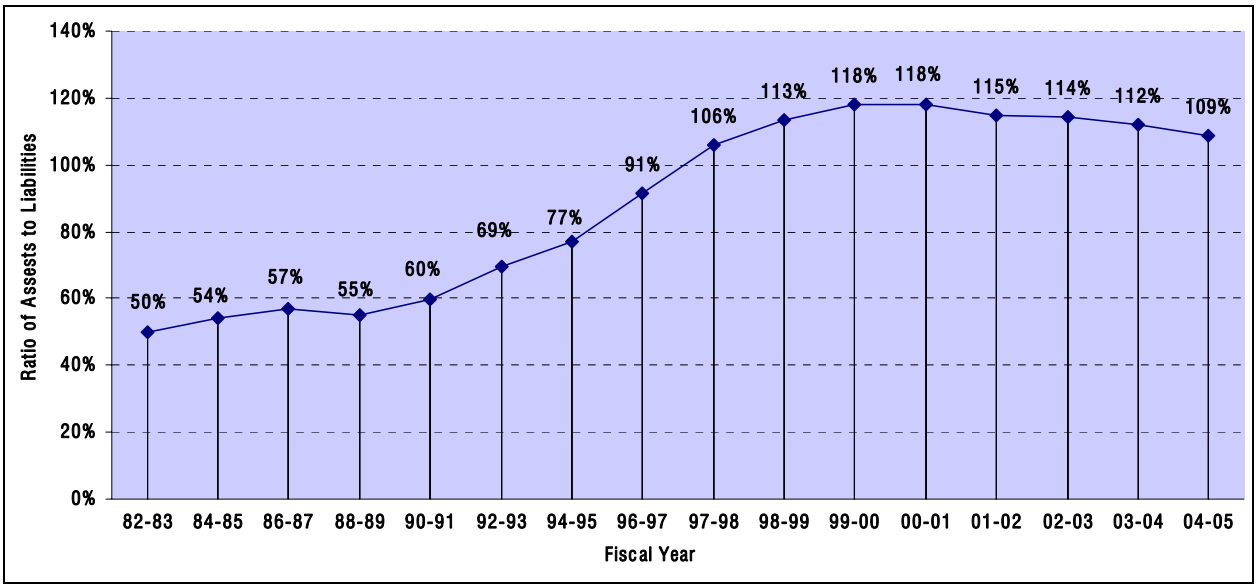
[8] The valuation initially calculated the surplus at $9 billion. However, the surplus was adjusted to $8.8 billion to account for the contingent liability due to FRS investment plan members' ability to exercise a second election to go back into the FRS pension plan. As provided by Ch. 2001-235, *Laws of Florida*, the actuarial gain from members electing to join the investment plan shall be amortized within 30 years as a separate unfunded actuarial base independent of the rate stabilization mechanism defined in s. 121.031(3)(f), *F.S.* For the first 25 years, no direct amortization payment is to be calculated for this base. During this 25-year period, this separate base is to be used to offset the impact of employees exercising their ability to rejoin the pension plan.

[9] As specified in s. 121.031(3)(f), *F.S.*

classes, and reentries into the FRS workforce by inactive members contributed to the unexpected increase in actuarial liabilities.

In addition, the Fiscal Year 2004-05 actuarial valuation indicated that $1.317 billion of the greater than expected increase in actuarial liabilities was attributed to "inactive data clean-up". Our actuary identified two potential sources of actuarial gains/losses resulting from inactive data clean-up. The first source was attributed to using the same age for the 2005 valuation as was used in the 2004 valuation for 1,238 members. which reduced the actuarial liability calculation by $840,252. The second source was attributed to expected benefit payments exceeding the reported benefit paid for 10,841 members, which increased the actuarial liability calculation by $33,850,176. Together, these two identified sources produced a net actuarial gain of $33,009,924 and materially contrasts with the liability loss of $1.317 billion that was attributed to inactive data clean-up in the valuation.

Exhibit 2
Pension Plan Funding Status Has Improved Over Time, But Has Been on a Downward Trend in Recent Years



Source: Division of Retirement documents and the Florida Retirement System Actuarial Valuation as of July 1, 2004.

Recommendations

Based on the review by Gabriel, Roeder, Smith & Company, we make the recommendations presented below.

- We recommend that additional analysis of the causes for differences between expected and reported actuarial liabilities be conducted. Specifically, each source and the associated amount contributing to the difference should be identified, as well as the primary cause for the discrepancy.
- We recommend that all information required for actuarial reports for local public employee retirement systems as specified in Ch. 60T-1 of the *Florida Administrative Code* also be included in the FRS actuarial valuation report. This information adds value for stakeholders and imposes a discipline on the report preparer.
- We recommend that the Legislature, the Department of Management Services, and the department's consulting actuary continue to closely monitor the FRS pension plan's funding status. The downward trend in the plan's funding status is not a major concern at this time because the plan continues to be fully funded.

Appendix A

ACTUARIAL REVIEW

OF

July 1, 2005 Actuarial Valuation

of the

Florida Retirement System

FOR

OFFICE OF PROGRAM POLICY ANALYSIS

AND GOVERNMENT ACCOUNTABILITY

Submitted by:
Gabriel, Roeder, Smith & Company

March 3, 2006

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March 3, 2006

Mr. Chuck Hefren
Senior Legislative Analyst
Government Operations
Office of Program Policy Analysis
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State of Florida
111 W. Madison St., Suite 312
Tallahassee, Florida 32399-1475

Re: Actuarial Review

Dear Chuck:

As requested, we have completed our preliminary review of the July 1, 2005 Actuarial Valuation Report of the Florida Retirement System (FRS) prepared by Milliman USA including the revised Valuation Exhibits provided under memorandum from Ms. Sarabeth Snuggs dated February 10, 2006 (copy attached).

Based upon this preliminary review, we find that the actuarial assumptions and methods appropriately develop actuarial values of the System. We have also replicated key financial results of the July 1, 2005 Actuarial Valuation and there are no material differences in the valuation results.

Our specific findings are:

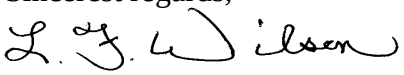
1. The Department of Management Services' actuaries are generally in compliance with the requirements of Florida Statutes, government accounting standards and actuarial standards of practice regarding their actuarial valuation of FRS. We have identified a few areas where consideration of refinement may be warranted.
2. The Department's actuaries for the most part use generally accepted actuarial cost methods, bases for assumptions and reporting standards. We have similarly identified areas where documentation and considerations or refinements may be warranted.
3. The specific economic and demographic assumptions used are arrived at from a sufficient level of detail considered and are generally reasonable in light of recent experience.
4. The Department's actuaries provide sufficient information as to the causes of gains, losses and net change in the unfunded liability to allow evaluation of specific factors. Additional disclosures may add value.

5. The Department's actuaries' actuarial report for the most part adequately provides necessary information that another actuary, unfamiliar with the situation, would find information to appraise the findings and arrive at reasonably similar results. FRS is a complicated System. We have identified information of a comparative nature that would be helpful in this regard.
6. We have found other aspects of the Department's actuaries' report where further disclosure and further consideration may be warranted.

We wish to thank Mr. Gary Green and FRS staff and Mr. Robert Dezube of Milliman USA without whom this review could not have been completed. We also wish to thank Mr. Chuck Janes and the Auditor General Staff for their insights gleaned while performing an actuarial review of the accounting disclosure (GASB 25 and 27) and the Federal contribution rate.

We look forward to responding to any questions or comments from the interested parties. If you should have any question concerning the above, please do not hesitate to contact us.

Sincerest regards,



Lawrence F. Wilson, A.S.A.
Senior Consultant and Actuary

Ky T. Le
Consultant

Enclosure

Introduction

I. Introduction

As a matter of policy the Office of Program Policy Analysis and Government Accountability (OPPAGA) engages an independent reviewing actuary to conduct various actuarial reviews and analysis. The scope of this work includes an actuarial review of the annual actuarial valuation and periodic experience study. In addition, contracted services include actuarial review of the CAFR pension disclosures (GASB 25 and 27) along with review of the federal contribution rate performed on behalf of the Office of the Auditor General.

The work to be reviewed is produced by the current Department of Management's actuaries - Milliman USA with Mr. Robert Dezube as actuary.

This actuarial review is a review and a replication of the July 1, 2005 Actuarial Valuation Report and incorporates the Revised Valuation Exhibits provided under memorandum dated February 10, 2006 from Ms. Sarabeth Snuggs..

The scope of this project is limited to reviewing the work of Milliman USA to the degree necessary to express opinions regarding the accuracy and reasonableness of the following:

1. Compliance with the requirements of Florida Statutes, government accounting standards and actuarial standards of practice regarding their actuarial valuation of FRS.
2. Use of generally accepted actuarial cost methods, bases for assumptions and reporting standards.
3. Use of specific economic and demographic assumptions arrived at from a sufficient level of detail considered and are generally reasonable in light of recent experience.
4. Provision of sufficient information as to the causes of gains, losses and net change in the unfunded liability to allow evaluation of specific factors.
5. Adequacy of actuarial report in providing necessary information that another actuary, unfamiliar with the situation, would find information to appraise the findings and arrive at reasonably similar results.
6. Aspects of the Department's actuaries work and report that are insufficient.

Executive Summary

II. Executive Summary

We have reviewed the July 1, 2005 Actuarial Valuation Report prepared by Milliman USA (Department of Management's retained valuation actuary). We find that the actuarial assumptions and methods generally develop appropriate actuarial values for FRS. We have also replicated the results of the July 1, 2005 Actuarial Valuation incorporating the revised Valuation Exhibits, and there are no material differences in the valuation results.

Prior to completing this project we have reviewed the:

- Accounting disclosure information for the CAFR based upon information prepared by Milliman USA and
- Federal contribution requirements prepared by Milliman USA for compliance with OMB Circular A-87.

In reviewing actuarial assumptions and methods, it is important to recognize that there is not a single *correct* set of actuarial assumptions and methods. There is a range of reasonableness within which individual assumptions, methods and the entire valuation basis may fall. Assumptions may be characterized as conservative (producing relatively higher near term contributions) or aggressive (producing relatively lower near term contributions) within this range. Similarly acceptable actuarial methods impact the incidence of required contributions.

During the course of our review of the July 1, 2005 Actuarial Valuation Report, we found that the liability for the active employees of the Special Risk Administrative Support Class using retirement rates reflective of future Deferred Retirement Option Program members was understated. The understatement was generally not material to the liabilities for the entire FRS but was somewhat material to the liabilities for the Special Risk Administrative Support Class. Revised liabilities and Valuation Exhibits were prepared.

In this light, we have the following comments on the July 1, 2005 Actuarial Valuation including revised Valuation Exhibits (actuarial valuation).

1. **Compliance with requirements of the Florida Statutes, Department rules, government accounting standards and actuarial standards of practice:** Overall, the actuarial valuation is compliant with these requirements. However, the application of the Rate Stabilization Mechanism (RSM) and treatment of the Deferred Retirement Option Program (DROP) may be somewhat nontraditional. Application of the RSM is questionable in combination with DROP treatment.

2. **Use of generally accepted actuarial cost methods, bases for assumptions and reporting standards:** Generally, the actuarial valuation meets these requirements. The use of the RSM may be a somewhat nontraditional *actuarial cost method*.

3. **Economic and demographic assumptions arrived at from a sufficient level of detail**

considered and collective effect of all assumptions: For the most part, the actuarial assumptions are reasonably related to plan experience based upon the results of the latest Experience Study. We continue to find the actuarial assumptions internally consistent including consistent recognition of anticipated inflation in the economic assumptions.

4. **Disclosure of sources of gains and losses:** Actuarial gains and losses are identified by source in sufficient detail to evaluate specific factors (i.e. investment return, salary increases, etc.). The reported actuarial loss for the year ended June 30, 2005 was $3.072 billion based upon the actuarial assumptions used in the July 1, 2004 Actuarial Valuation. It appears this actuarial loss is impacted by the somewhat nontraditional treatment of the DROP. Additional disclosures may be warranted.

5. **Disclosure of sufficient information that another actuary, unfamiliar with the situation, could appraise the findings and arise at similar results:** The actuarial valuation provides significant information. FRS is complicated and the methods employed for certain benefits (DROP), the allocation of contribution requirement by Class and the use of the Rate Stabilization Mechanism are somewhat non-traditional. Additional side-by-side comparison of current and prior year results would add value.

6. **Other aspects of the Valuation:** As stated above, the actuarial valuation provides significant information. We fully believe that disclosures of the normal costs, actuarial liabilities and actuarial gain / (loss) fully reflecting the DROP are appropriate. In addition, disclosure of the present value of future benefits would be helpful to the reader. The method used to determine the actuarial value of assets may warrant further review.

Analysis and

Recommendations

III. Analysis and Recommendations

The following are detailed analysis and recommendations based upon our examination and review of the work of the Department of Management Services' actuaries as evidenced by the July 1, 2005 Actuarial Valuation to determine whether:

A. *The Department of Management Services' actuaries are in compliance with the requirements of the Florida Statutes, Department rules, government accounting standards and actuarial standards of practice regarding their actuarial valuation of the Florida Retirement System pension plan*

Overall, we believe the actuarial valuation is compliant with these requirements.

However, we believe some of the requirements of the Florida Statutes and Department rules could conflict with government accounting standards and generally accepted actuarial standards of practice. In addition, we are uncertain as to the proper application of Florida Statutes dealing with the Rate Stabilization Method. Finally, we believe the nontraditional treatment of the DROP has a significant impact on the size of the reported surplus.

Actuarial Cost (Funding) Method: An actuarial cost method is a set of techniques for conversion of the actuarial present values of benefits into contribution information. Actuarial methods are characterized by:

1. Normal Cost – the cost of the system without consideration of funding status

2. Actuarial Accrued Liability – the assets which would have accumulated to date had contributions been made at the level of the normal cost since the date of the first benefit accrual, all actuarial assumptions had been exactly realized and there had been no benefit changes.

The total contribution produced by an actuarial cost method is the total of the normal cost and an amount to amortize any unfunded actuarial accrued liability.

The method used in the valuation for FRS is the Entry Age Normal Method. The normal cost under this method is the annual cost, expressed as a level percentage of pay, which will support the benefits of the System. Entry Age Normal is the most prevalent funding method in the public sector. It is appropriate for the public sector because it produces costs that remain stable as a percentage of payroll over time, resulting in intergenerational equity for taxpayers.

There are a couple of areas in which the application of the Entry Age Normal Method in the FRS valuation is non-traditional. First, the use of the surplus (excess of actuarial value of assets over actuarial accrued liabilities is governed by Florida Statute.

Specifically, F.S., 121.031(3)(f) requires application of the Rate Stabilization Mechanism (RSM) for determining the amount of surplus to be recognized in any given year as follows:

f) The actuarial model used to determine the adequate level of funding for the Florida Retirement System shall include a specific rate stabilization mechanism, as prescribed herein. It is the intent of the Legislature to maintain as a reserve a specific portion of any actuarial surplus, and to use such reserve for the purpose of offsetting future unfunded liabilities caused by experience losses, thereby minimizing the risk of future increases in contribution rates. It is further the intent of the Legislature that the use of any excess above the reserve to offset retirement system normal costs shall be in a manner that will allow system employers to plan appropriately for resulting cost reductions and subsequent cost increases. The rate stabilization mechanism shall operate as follows:

1. *The actuarial surplus shall be the value of actuarial assets over actuarial liabilities, as is determined on the preceding June 30 or as may be estimated on the preceding December 31.*

2. *The full amount of any experience loss shall be offset, to the extent possible, by any actuarial surplus.*

3. *If the actuarial surplus exceeds 5 percent of actuarial liabilities, one-half of the excess may be used to offset total retirement system costs. In addition, if the actuarial surplus exceeds 10 percent of actuarial liabilities, an additional one-fourth of the excess above 10 percent may be used to offset total retirement system costs. In addition, if the actuarial surplus exceeds 15 percent of actuarial liabilities, an additional one-fourth of the excess above 15 percent may be used to offset total retirement system costs.*

4. *Any surplus amounts available to offset total retirement system costs pursuant to subparagraph 3. should be amortized each year over a 10-year rolling period on a level-dollar basis.*

We understand the RSM, enacted into Florida law in 2000, was the result of an involved lengthy study involving members of the Florida Legislature, FRS employers, legislative and executive branch policy staff, professionals from the Florida State Board of Administration (SBA) and the Division of Retirement, two independent actuarial firms and SBA Trustees. The group recommended that the Legislature consider a method to stabilize contribution rates and ease the burden of contribution volatility on FRS participating employers.

In fact, the Legislature included their philosophy in F.S., section 121.031(3)(f) as follows …… *It is the intent of the Legislature to maintain as a reserve a specific portion of any actuarial surplus, and to use such reserve for the purpose of offsetting future unfunded liabilities caused by experience losses, thereby minimizing the risk of future increases in contribution rates. It is further the intent of the Legislature that the use of any excess above the reserve to offset retirement system normal costs shall be in a manner that will allow system employers to plan appropriately for resulting cost reductions and subsequent cost increases.*

Further, we understand the reported surplus (excess of the actuarial value of assets over the accrued actuarial liability) has arisen primarily due to favorable historic investment returns and not from direct employer contributions.

In fact, as per the statute, a portion of the surplus has been used to stabilize contribution rates and fund System benefits.

The Actuarial Standards Board (ASB) promulgates standards of practice for actuaries. *Actuarial Standard of Practice* (ASOP) *No. 4 – Measuring Pension Obligations* addresses amortizations.

Paragraph 5.2.7 *Amortization—Factors Considered—* reads as follows:

Amortization may be required for such things as initial or unfunded actuarial liabilities, actuarial gains and losses and changes in actuarial liabilities due to plan amendments or changes in actuarial assumptions. The choice of an amortization period or range of periods should reflect:

a. Any known limitations in the continuing ability of the plan sponsor to fund the plan. For example, consideration should be given to the probable future careers of the firm's principals for the plan of a small professional corporation, or the probable future lifetime of the plan sponsor;

b. The period over which the sponsor is benefited by the plan provision giving rise to the actuarial present value being amortized;

c. The existing relationship between assets and actuarial liabilities;

d. Progress towards meeting cash flow needs or a desired funding goal; and

e. Permissible smoothing of costs or contributions.

The pattern of amortization during each selected period should be rational and systematic, such as a level annual dollar amount or a level percentage of participants' payroll.

The Government Accounting Standards Board (GASB) promulgates accounting standards for public entities. GASB Statements 25 and 27 generally set out expense and disclosure requirements for retirement systems.

Under GASB standards, expense should include provisions for amortizing the total unfunded actuarial liability (UAL), whether the UAL is positive or negative. Consequently, a negative unfunded accrued liability (surplus) is required to be amortized (See Guide to Implementation of GASB Statements 25, 26 and 27 on Pension Reporting and Disclosure by State and Local Government Plans and Employers - Question 40) and GASB Statement 27 (Footnote 10).

The maximum amortization period is 40 years for fiscal year ended June 30, 2005 (See Guide to Implementation of GASB Statements 25, 26 and 27 on Pension Reporting and Disclosure by State

and Local Government Plans and Employers - Question 41) and GASB Statement 27 (Paragraph 10.f.1.).

Paragraph 148 of GASB Statement 25 reads *The Board also believes that, when components of the total unfunded actuarial liability are separately amortized, gains and losses of a similar type ... should be amortized over similar periods; that is it would not be appropriate to recognize all gains immediately or over very short periods and spread all losses over longer periods. The Board recognizes that a required minimum period may not always be appropriate. For example, in some circumstances, the immediate recognition of a gain to offset a loss may help to reduce volatility in the ARC.* Note that paragraph 148 is included in the *Basis for Conclusions* section rather than in the formal statement section. Consequently, it may represent GASB's preference, but not a formal requirement.

The July 1, 2005 actuarial valuation now includes conforming GASB reporting. However, there is no guarantee that the RSM will produce compliant GASB contribution requirements in the future.

A **second issue** deals with the *policy* decision for treatment of the Deferred Retirement Option (DROP) program.

As stated on page I-12 of the July 1, 2005 Actuarial Valuation Report (Report) the DROP contribution requirement is determined on a two step approach. Based upon communication with the Department's actuary, we understand the process to proceed as follows:

Step 1 (1st bullet) - The liabilities are determined under the entry age normal actuarial cost method by Class utilizing assumed rates of future retirement that do not reflect the probability of entering the DROP. We understand current DROP members are treated as retired and included in their respective Class. The required contribution by Class is determined as the normal cost less reflected surplus recognized through the rate stabilization method (RSM) (See Table IV-8 of the Report).

Step 2 (2nd bullet) – The liabilities are re-determined under the entry age normal actuarial cost method utilizing assumed rates of future retirement that do reflect the probability of entering the DROP in the future. The required contribution for the DROP is determined as the increase in normal cost plus the increase in actuarial accrued liability amortized over 30 years as a level dollar amount assuming mid-year payment in the fiscal year following the Report year (See Table IV-8 of the Report).

We understand for the remainder of the Report (excluding GASB) values are shown based upon Step 1 only.

The cost for the DROP may not have been determined under a GASB compliant actuarial cost method as defined under GASB Statement 27.

1. Page IV-9 of the July 1, 2005 Actuarial Valuation Report states that … *DROP* <contribution> *rates are special charges to cover the assumed cost of DROP participants. They are not Normal Cost or UAL Cost in the traditional sense.*
2. Paragraph 10.a. of GASB Statement 27 states *Benefits to be included - The actuarial present value of total projected benefits should include all pension benefits to be provided by the plan to plan members or beneficiaries in accordance with (1) the terms of the plan and (2) any additional statutory or contractual agreement(s) to provide pension benefits through the plan that are in force at the actuarial valuation date.*
3. Paragraph 10.d. of GASB Statement 27 states *Actuarial cost method – One of the following actuarial cost methods should be used: entry-age, frozen entry age, attained age, projected unit credit, or the aggregate actuarial cost method as described in Paragraph 40, Section B.*

We believe all GASB accounting information has been presented based upon the STEP 2 results.

Finally, we note that the measurement of surplus for purposes of the RSM is based upon the actuarial accrued liability measured under Step 1. This tends to overstate the amount of surplus since the Step 1 actuarial accrued liability does not reflect the actuarial accrued liability for expected future DROPs. F.S., 121.031(3)(f)(1) uses the term actuarial liabilities without further definition. We might have expected the use of the full actuarial accrued liability measured inclusive of expectations of future DROPs (Step 2).

The actuarial valuation shows that use of the actuarial accrued liability determined under the Step 2 approach would decrease the reported July 1, 2005 surplus by $1.396 billion.

B. *The Department's actuaries use generally accepted actuarial cost methods, bases for assumptions and reporting standards*

For the most part, the actuarial valuation meets these requirements. As explained above (paragraph A), the use of the RSM is a somewhat nontraditional *actuarial cost method and the nontraditional treatment of DROPs understates plan liabilities.* Our discussion of certain aspects of the actuarial cost methods are included in paragraph A above.

A number of actuarial assumptions were updated for the July 1, 2004 Actuarial Valuation based upon the Experience Study covering the five-year period ended June 30, 2003. We believe that the updated assumptions may generally better reflect prior experience and future expectations. The current actuarial assumptions remain substantially unchanged from those employed in the prior actuarial valuation.

Process for Assumption Setting: The principles set forth in Actuarial Standards of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations* guide the proper selection of **economic assumptions**. In particular, they proscribe that the actuary develop a best estimate range for each economic assumption, and then recommend a specific point within that range. After completing the assumption process, the actuary should review the set of economic assumptions for consistency.

The economic assumptions may be reasonable and appropriate; however, we have found no demonstration or rationale to support the changes made effective July 1, 2004. We note the inflation assumption (3.0%) may be at the lower end of the range of reasonable inflation assumptions. In fact for calendar year 2005 (December) inflation as observed by the CPI-U was 3.4%.

While the economic assumptions may be reasonable, best practices would dictate documentation of the rationale for such changes.

The principles set forth in ASOP No. 35, Selection of Demographic and Other **Noneconomic Actuarial Assumptions** for Measuring Pension Obligations guide the proper selection of the remaining actuarial assumptions. In particular, they proscribe the actuary to use professional judgment to estimate possible future outcomes based on past experience and future expectations, and select assumptions based upon application of that professional judgment. The actuary should select reasonable demographic assumptions in light of the particular characteristics of the System that is the subject of the measurement. A reasonable assumption is one that is expected to appropriately model the contingency being measured and is not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

The following comments on the remaining actuarial assumptions remain valid.

1. ***Early retirement / withdrawal rates*** – Early retirement and withdrawal rates are combined due to the somewhat unusual early retirement eligibility under the System (completion of six years of service regardless of age). The valuation assumes early retirement (immediate reduced benefit commencement) for vested members leaving employment within ten years of normal retirement. All other vested terminations are assumed to elect an unreduced deferred benefit commencing at normal retirement date.

   These rates reflect ten (10) year select and ultimate rates. It may be common to use a select period that coincides with the vesting period (6 years vs. 10 years). Also, we are unaware of any analysis to determine experience relating to members electing immediate reduced benefits vs. deferring unreduced benefits to normal retirement date.

   In addition, some of the rates were contrary to observed experience in the alatest Experience Study. For example, the rates for the Special Risk Class 10+ years were reduced notwithstanding the fact that observed exits exceeded expectations based upon the prior rates.

2. ***Retirement rates and DROP*** – We have discussed in detail issues relating to the treatment of current and future DROPs (see Paragraph A).

In brief, two sets of retirement rates are determined. Set one does not reflect the probability of entering the DROP. Set 2 reflects the probability of entering the DROP. The Actuarial Valuation Report is substantially based upon Set 1 retirement rates.

As stated above, we believe the Report should substantially reflect Set 2 retirement rates. The allocation to Classes could be included in the Report based upon Step 1 rates consistent with our understanding of policy decisions.

3. ***Inactive mortality and disabled mortality rates*** - The inactive mortality rates (separate male and female rates) used for all Classes were updated to reflect experience (higher than expected observed mortality - except for disabled males).

   The following summarizes the inactive healthy and disabled experience for the Classes with most of the observed experience.

   We continue to be surprised that assumed mortality rates for disabled members for each gender are selected from different published mortality studies. In fact, there was a minimal amount of observed disabled mortality experience during the Experience Study period.

   In addition, the female healthy inactive mortality rates appear to overshoot the observed rates from the Experience Study and do not appear to leave margin for conservatism. We continue to be uncertain as to why the updated rates warrant the 115% increase over the published mortality rates. The updated rates are projected (generational as described below) which may offset some of this lack of conservatism shown above.

C. *The specific economic and demographic assumptions used are arrived at from a sufficient level of detail considered, and are reasonable in light of recent experience. Such analysis should also comment on the collective effect of all assumptions*

Except for the economic assumptions referred to in Paragraph B, the actuarial assumptions were for the most part examined in the recently completed Experience Study.

D. *The specific economic and demographic assumptions used are arrived at from a sufficient level of detail considered, and are reasonable in light of recent experience. Such analysis should also comment on the collective effect of all assumptions*

Except for the economic assumptions referred to in Paragraph B, the actuarial assumptions were for the most part examined in the recently completed Experience Study.

In Paragraph C (above) we have provided our insights regarding the economic and demographic assumptions in light of the Experience Study.

The net effect of theses changes was to make the collective actuarial basis less conservative. This was born out by the reduction in the actuarial accrued liability shown in the July 1, 2004 Actuarial Valuation Report..

E. *The Departments actuaries provide sufficient information as to causes for gains, losses, and net change in the unfunded liability to allow evaluation of specific factors*

The July 1, 2005 Actuarial Valuation Report provides information on actuarial gains and losses and net change in unfunded on several different pages.

The Executive Summary breaks out gains and losses by source for the actuarial accrued liability. Gains and losses by source are first determined based upon the total actuarial accrued liability (exclusive of gains and losses from assumed investment return) followed by the effect on the unfunded actuarial accrued liability showing the loss from investment return.

The System experienced an actuarial **loss of $3.072 billion** during fiscal year ended June 30, 2005. This amount is not explicitly shown in the Executive Summary. We believe this is a key result which should be readily available to reader of this Report.

We note that Chapter 60T-1, Florida Administrative Code establishes requirements for Actuarial Reports for Florida *local law* public employee retirement systems. F.A.C, Chapter 60T-1.001(2) provides ***Scope and Purpose*** ….. *The objectives of this chapter are to enhance and further clarify the intent of Part VII, Chapter 112, Florida Statutes, so that governmental retirement systems may be managed, administered, operated, and funded in such manner as to maximize the protection of public employee retirement benefits. Inherent in this intent is the recognition that the pension liabilities attributable to the benefits promised public employees be fairly, orderly, and equitably funded by the current, as well as future, taxpayers.*

F.A.C., Chapter 60T-1.003(4)(h) provides ***Actuarial Reports*** ….. *Disclosure, for each plan year, of the derivation of the current unfunded actuarial accrued liability from the amount established as of the immediately preceding valuation date. (Unfunded actuarial accrued liabilities are amortized by nonemployee contributions in excess of normal cost and interest requirements.) The disclosure shall, minimally, include the following:*

1 Total unfunded actuarial accrued liability for the immediately prior actuarial valuation date (state date)		*$*
2. Plan sponsor normal cost for this plan year		*$*
3. Interest accrued on 1. and 2.		*$*
4. Plan sponsor contributions for this plan year (including amounts expected to be paid)		*$*
5. Interest on 4.		*$*
6. Changes due to a. + b. + c. + d.		
a. assumptions	*$*	
b. funding method	*$*	
c. plan amendments	*$*	
d. actuarial gain/loss	*$*	

7. Total current unfunded actuarial accrued liability
1. + 2. + 3. - 4. - 5. + 6. *$* _____

If this information must be provided by all local law public retirement systems in Florida, it seems reasonable and appropriate for it to be included in the FRS Actuarial Valuation Report. We believe this information adds value for the reader and imposes a discipline on the Report preparer.

Finally, we believe it may be more appropriate to determine actuarial gains and losses fully recognizing the probability of future DROPs and traditional treatment of current DROPs. This is the Step 2 approach described above and the required approach for GASB reporting.

We believe the Step 1 approach may only be appropriate for funding allocation.

F. *The Departments actuaries' actuarial report adequately provides necessary information that another actuary, unfamiliar with the situation, would find sufficient to appraise the findings and arrive at reasonably similar results*

The Actuarial Valuation Report provides significant information. Both in terms of importance and in volume. The FRS is complicated and the valuation methods employed are somewhat non-traditional for: (1) certain benefits (DROP), (2) the allocation of contribution requirement by Class and (3) the use of the Rate Stabilization Mechanism.

In addition to our comments in the above paragraphs, we believe that additional information would be both helpful and appropriate. For example, the actuarial present value of future benefits and the actuarial present value of future pay are not shown. Based upon our experience, these elements are of great value to another actuary in assessing another actuary's results.

As detailed later in this Review, we requested and were provided with these actuarial present values by Class and the actuarial present value of future benefits was requested and provided further broken down by decrement. This detailed was provided both under the retirement assumptions that do not recognize future DROPs (Step 1 retirement assumptions) and fully recognizing future DROPs. This is the basis for our validation of the results of the actuarial valuation.

We believe the Report could be further improved by providing prior year results along with side-by-side current year results as appropriate. The reader of the Report would gain insight from a ready comparison both in terms of changes in absolute value and percentage changes.

We may again look to Chapter 60T-1, Florida Administrative Code which endorses the prior year / current year side by side comparison along with suggestions of key valuation disclosures.

F.A.C., Chapter 60T-1.003(4)(h) provides ***Actuarial Reports*** ….. *(l) A comparative summary of principal valuation results, essentially in the following format:*

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS
(Not a required format – to be used as a guide only)

	Actuarial Valuation Prepared as of	
	Current Date	*Prior Date*
1. Participant Data		
Active members	*#*	*#*
Total annual payroll	*$*	*$*
Retired members and beneficiaries (other than disabled)	*#*	*#*
Total annualized benefit	*$*	*$*
Disabled members receiving benefits	*#*	*#*
Total annualized benefit	*$*	*$*
Terminated vested members	*#*	*#*
Total annualized benefit	*$*	*$*
2. Assets		
Actuarial value of assets	*$*	*$*
Market value of assets	*$*	*$*
3. Liabilities		
Present value of all future expected benefit payments:		
Active members	*$*	*$*
Retirement benefits	*$*	*$*
Vesting benefits	*$*	*$*
Disability benefits	*$*	*$*
Death benefits	*$*	*$*
Return of contribution	*$*	*$*
Total	*$*	*$*
Terminated vested members	*$*	*$*
Retired members and beneficiaries:		
Retired (other than disabled) and beneficiaries	*$*	*$*
Disabled members	*$*	*$*
Total	*$*	*$*
Total present value of all future expected benefit payments	*$*	*$*
Liabilities due and unpaid	*$*	*$*
**Actuarial accrued liability*	*$*	*$*
**Unfunded actuarial accrued liability*	*$*	*$*

**Refers to liabilities not funded by future normal cost contributions. Show amount, date and amortization period a*

establishment, and current amount of each such liability not amortized		
4. Actuarial present value of accrued benefits (to be determined in accordance with a. and b. below)		
Statement of actuarial present value of all accrued benefits		
Vested accrued benefits	*$*	*$*
Inactive members and beneficiaries	*$*	*$*
Active members (includes nonforfeitable accumulated member contributions in the amount of)	*$*	*$*
Total value of all vested accrued benefits	*$*	*$*
Non-vested accrued benefits	*$*	*$*
Total actuarial present value of all accrued benefits	*$*	*$*
Statement of changes in total actuarial present value of all accrued benefits		
Actuarial present value of accrued benefits at beginning of year	*$*	
Increase (decrease) during year attributable to (where applicable):		
Plan amendment	*$*	
Changes in actuarial assumptions	*$*	
Increase for interest and probability of payment due to decrease in discount period and benefits accrued	*$*	
Benefits paid	*$*	
Other changes (identify and state amount)	*$*	
Net increase (decrease)	*$*	
Actuarial present value of accrued benefits at end of year	*$*	

a. Accrued benefits are those future promised benefits that are determined in accordance with the plan's provisions based on the service members have rendered to the actuarial valuation date. Accrued benefits are those payable under all applicable plan circumstances – retirement, death, disability, and termination of employment – to the extent they are deemed attributable to member service rendered to the valuation date. Benefits to be provided by insured contracts for which the plan sponsor has no future liability and which are excluded from plan assets are to be excluded from plan benefits.

b. All determinations are to be on a consistent basis. Any change is to be disclosed, together with an explanation. The exhibit entries for the actuarial valuation date as of which a change is made shall show the entries on a before and after change basis.

5. Pension cost (specify applicable funding period)		
Normal cost (show cost for each benefit if so		

calculated and amount of administrative expenses, if applicable.)	*$*	*$*
Payment to amortize unfunded liability	*$*	*$*
Expected plan sponsor contribution (including normal cost, amortization payment and interest, as applicable)	*$*	*$*
As % of payroll	*%*	*%*
Amount to be contributed by members	*$*	*$*
As % of payroll	*%*	*%*
6. Past contributions		
For each plan year since last report:		
Required plan sponsor contribution	*$*	*$*
Required member contribution	*$*	*$*
Actual contributions made by:		
Plan's sponsor	*$*	*$*
Members	*$*	*$*
Other (e.g., Chapters 175 or 185, F.S.)	*$*	*$*
7. Net actuarial gain (loss) (if applicable)	*$*	*$*
8. Other disclosures (where applicable)		
Present value of active member:		
Future salaries		
at attained age	*$*	*$*
at entry age	*$*	*$*
Future contributions		
at attained age	*$*	*$*
at entry age	*$*	*$*
Present value of future contributions from other sources (identify)	*$*	*$*
Present value of future expected benefit payments for active members at entry age	*$*	*$*

F. *Whether other aspects of the Department's actuaries work and report are sufficient*

As stated above, the Actuarial Valuation Report provides significant information. We believe that disclosures of the normal costs and actuarial liabilities fully reflecting the DROP are appropriate. In addition, disclosure of the present value of future benefits would be helpful to the reader.

F.S. 121.031(3)(a) provides *The valuation of plan assets shall be based on a 5-year averaging methodology such as that specified in the United States Department of Treasury Regulations, 26 C.F.R. s. 1.412(c)(2)-1, or a similar accepted approach designed to attenuate fluctuations in asset values.*

The July 1, 2005 actuarial value of assts method starts with the July 1, 2004 actuarial value of assets and determines an expected actuarial value of assets as of July 1, 2005 assuming the expected fund return (8% for fiscal 2005) recognizing non-investment cash flows. The July 1, 2005 actuarial value of assets is the July 1, 2005 expected actuarial value plus 20% of the excess (deficiency) of July 1, 2005 market value of assets over the July 1, 2005 expected value of assets.

We believe this actuarial value of assets method is an acceptable method under Treasury regulations and complies with Florida statute. However, we note that if a retirement plan covered by the above Treasury regulation were to switch from another approved method to this method, they would require prior IRS approval. This is not the case with other pre-approved methods. We believe that a method subject to automatic approval may be preferable.

A deficiency of the current actuarial value of assets method is that if actual investment returns exactly matched expected investment returns over the 5-year averaging period, the actuarial value would not equal the market value.

Replication of July 1, 2005

Actuarial Valuation Results

IV. Replication of key financial results of the July 1, 2005 Actuarial Valuation

In this phase of the review, GRS reviewed the calculated values (present value of benefits) supplied by the Department's actuaries subdivided by Class and type of benefit for active members (i.e., service retirement, vesting and reduced retirement, ordinary and service disability, ordinary and service death, and refunds of contributions) and pensioners by category (retirees, terminated vesteds and current DROPS) divided by Class. In addition, we reviewed the calculation of the present values of future salaries divided by Class.

The following tables compare the results of the System actuaries and GRS calculations of present value of benefits and future compensation for each Class under regular retirement rates and increased retirement rates that reflect anticipated future DROPs.

GRS established quantitative measures to determine whether, on a present value line by line basis (i.e., retired members, beneficiaries, active retirement, death, disability, etc.), results calculated separately by GRS and the System actuaries agreed with each other to within reasonable tolerances. One of our quantitative tests is the ratio of the line present value calculated by GRS to the line present value calculated by the System actuaries. To PASS this test requires a difference not in excess of 5.0%. This test is sensitive to the size of the line present value that is measured in thousand dollar increments. For example, the present value for return of contributions for active Senior Management (No Future DROP Retirement Rates) (SM) Class members is three (3). A GRS calculation of anything but three (3) would fail this 5.0% test. In fact, GRS calculated twelve (12), which is only off by nine (9) but fails the percentage test (300%).

Measure Two of our quantitative test is the ratio of the difference between the line present value calculation of the System actuaries and the GRS line present value calculation divided by the total liability calculated by the System actuaries. To PASS this test requires a ratio within 0.5%. The present value for return of contributions for active Senior Management (No Future DROP

Retirement Rates) (SM) Class members mentioned above clearly passes this test (less than 0.00% ratio) as expected due to the minimal dollar difference. A PASS is assigned to each line present value only if Measure One or Measure Two is passed.

Every line liability PASSES for all Classes and for both retirement rate assumption sets and in our opinion our results have verified the calculations of the Department's actuaries. Our results should not replace the results of the System actuaries. Our calculations are sufficient only for the purpose intended (actuarial review) and are not suitable for any other purpose.

	FLORIDA RETIREMENT SYSTEM	**GRAND TOTAL - No Future DROPs Retirement Rates**										
	($ 000)						**Liability Test**					
				Liability Ratio			**Individual**		**PVFB**			
	Active PVFB	**M&R**	**GRS**	**Individual**	**Total**		**5%**		**0.5%**		**Composite**	
	Withdrawal / Early Retirement	$13,660,777	$13,383,704	(0.0203)	(0.0022)		Pass		Pass		Pass	
	Retirement	57,486,734	58,121,766	0.0110	0.0050		Pass		Pass		Pass	
	Non-Duty Death	1,276,071	1,234,185	(0.0328)	(0.0003)		Pass		Pass		Pass	
	Duty Death	491,239	559,244	0.1384	0.0005		**Fail**		Pass		Pass	
	Non-Duty Disability	2,516,486	2,653,978	0.0546	0.0011		**Fail**		Pass		Pass	
	Duty Disability	637,168	716,098	0.1239	0.0006		**Fail**		Pass		Pass	
	Return of Contributions	103	313	2.0381	0.0000		**Fail**		Pass		Pass	
	Subtotal	$76,068,578	$76,669,288	0.0079	0.0047		Pass		N/A		Pass	
	Less PVF Contributions	1,897	1,897	0.0000	0.0000		Pass		Pass		Pass	
	Total Active PVFB	**$76,066,681**	**$76,667,391**	**0.0079**	**0.0047**		**Pass**		N/A		**Pass**	
	Count	597,948	597,948	0.0000	N/A		Pass		N/A		Pass	
	Active PVF Salary:	$211,323,706	216,161,025	0.0229	N/A		Pass		N/A		Pass	
	Inactive PVFB											
	Retirees	$35,742,438	$36,465,657	0.0202	0.0057		Pass		**Fail**		Pass	
	Terminated Vesteds	3,322,825	3,258,977	(0.0192)	(0.0005)		Pass		Pass		Pass	
	DROPs	$12,149,047	$12,166,775	0.0015	0.0001		Pass		Pass		Pass	
	Total Inactive	**51,214,310**	**51,891,409**	**0.0132**	**0.0053**		**Pass**		N/A		**Pass**	
	Total	**$127,280,991**	**$128,558,800**	**0.0100**	**0.0100**		**Pass**		N/A		**Pass**	

	FLORIDA RETIREMENT SYSTEM	**GRAND TOTAL - No Future DROPs Retirement Rates**										
	($ 000)						**Liability Test**					
					Liability Ratio		**Individual**		**PVFB**			
	Active PVFB	**M&R**	**GRS**		**Individual**	**Total**	**5%**		**0.5%**		**Composite**	
	Withdrawal / Early Retirement	$2,547	2,709		0.0636	0.0018	**Fail**		Pass		Pass	
	Retirement	16,424	16,546		0.0074	0.0014	Pass		Pass		Pass	
	Non-Duty Death	339	296		(0.1268)	(0.0005)	**Fail**		Pass		Pass	
	Duty Death	161	180		0.1180	0.0002	**Fail**		Pass		Pass	
	Non-Duty Disability	618	661		0.0696	0.0005	**Fail**		Pass		Pass	
	Duty Disability	346	387		0.1185	0.0005	**Fail**		Pass		Pass	
	Return of Contributions	0	0		0.0000	0.0000	Pass		Pass		Pass	
	Subtotal	$20,435	$20,779		0.0168	0.0038	Pass		N/A		Pass	
	Less PVF Contributions	0	0		0.0000	0.0000	Pass		Pass		Pass	
	Total Active PVFB	**$20,435**	**$20,779**		**0.0168**	**0.0038**	**Pass**		N/A		**Pass**	
	Count	76	76		0.0000	N/A	Pass		N/A		Pass	
	Active PVF Salary:	$31,846	$32,695		0.0267	N/A	Pass		N/A		Pass	
	Inactive PVFB											
	Retirees	$52,233	$52,903		0.0128	0.0075	Pass		**Fail**		Pass	
	Terminated Vesteds	$2,016	$1,680		(0.1667)	(0.0037)	**Fail**		Pass		Pass	
	DROPs	$15,070	$15,096		0.0017	0.0003	Pass		Pass		Pass	
	Total Inactive	**69,319**	**69,679**		**0.0052**	**0.0040**	**Pass**		N/A		**Pass**	
	Total	**$89,754**	**$90,458**		**0.0078**	**0.0078**	**Pass**		N/A		**Pass**	

	FLORIDA RETIREMENT SYSTEM	**GRAND TOTAL - No Future DROPs Retirement Rates**										
	($ 000)							**Liability Test**				
					Liability Ratio			**Individual**		**PVFB**		
	Active PVFB	**M&R**	**GRS**		**Individual**	**Total**		**5%**		**0.5%**		**Composite**
	Withdrawal / Early Retirement	$2,068,404	$2,045,589		(0.0110)	(0.0008)		Pass		Pass		Pass
	Retirement	15,310,997	15,373,228		0.0041	0.0023		Pass		Pass		Pass
	Non-Duty Death	309,739	350,545		0.1317	0.0015		**Fail**		Pass		Pass
	Duty Death	152,850	196,599		0.2862	0.0016		**Fail**		Pass		Pass
	Non-Duty Disability	657,127	692,107		0.0532	0.0013		**Fail**		Pass		Pass
	Duty Disability	361,537	419,929		0.1615	0.0022		**Fail**		Pass		Pass
	Return of Contributions	2	32		15.0000	0.0000		**Fail**		Pass		Pass
	Subtotal	$18,860,656	$19,078,029		0.0115	0.0080		Pass		N/A		Pass
	Less PVF Contributions	0	0		0.0000	0.0000		Pass		Pass		Pass
	Total Active PVFB	**$18,860,656**	**$19,078,029**		**0.0115**	**0.0080**		**Pass**		N/A		**Pass**
	Count	64,848	64,848		0.0000	N/A		Pass		N/A		Pass
	Active PVF Salary:	$37,535,961	$38,068,101		0.0142	N/A		Pass		N/A		Pass
	Inactive PVFB											
	Retirees	$5,554,585	$5,683,152		0.0231	0.0048		Pass		Pass		Pass
	Terminated Vesteds	$509,610	$438,393		(0.1397)	(0.0026)		**Fail**		Pass		Pass
	DROPs	$2,092,280	$2,103,732		0.0055	0.0004		Pass		Pass		Pass
	Total Inactive	**8,156,475**	**8,225,277**		**0.0084**	**0.0025**		**Pass**		N/A		**Pass**
	Total	**$27,017,131**	**$27,303,306**		**0.0106**	**0.0106**		**Pass**		N/A		**Pass**

	FLORIDA RETIREMENT SYSTEM	**GRAND TOTAL - No Future DROPs Retirement Rates**										
	($ 000)						**Liability Test**					
					Liability Ratio			**Individual**		**PVFB**		
	Active PVFB	**M&R**	**GRS**		**Individual**	**Total**		**5%**		**0.5%**		**Composite**
	Withdrawal / Early Retirement	$272,046	$273,019		0.0036	0.0003		Pass		Pass		Pass
	Retirement	1,549,618	1,548,938		(0.0004)	(0.0002)		Pass		Pass		Pass
	Non-Duty Death	37,333	37,299		(0.0009)	0.0000		Pass		Pass		Pass
	Duty Death	11,138	11,964		0.0742	0.0003		**Fail**		Pass		Pass
	Non-Duty Disability	37,230	39,012		0.0479	0.0006		Pass		Pass		Pass
	Duty Disability	6,068	6,525		0.0753	0.0002		**Fail**		Pass		Pass
	Return of Contributions	3	12		3.0000	0.0000		**Fail**		Pass		Pass
	Subtotal	$1,913,436	$1,916,769		0.0017	0.0012		Pass		N/A		Pass
	Less PVF Contributions	0	0		0.0000	0.0000		Pass		Pass		Pass
	Total Active PVFB	**$1,913,436**	**$1,916,769**		**0.0017**	**0.0012**		**Pass**		N/A		**Pass**
	Count	5,652	5,652		0.0000	N/A		Pass		N/A		Pass
	Active PVF Salary:	$4,033,891	$4,143,080		0.0271	N/A		Pass		N/A		Pass
	Inactive PVFB											
	Retirees	$560,802	$564,142		0.0060	0.0012		Pass		Pass		Pass
	Terminated Vesteds	$95,074	$93,454		(0.0170)	(0.0006)		Pass		Pass		Pass
	DROPs	$318,896	$320,322		0.0045	0.0005		Pass		Pass		Pass
	Total Inactive	**974,772**	**977,918**		**0.0032**	**0.0011**		**Pass**		N/A		**Pass**
	Total	**$2,888,208**	**$2,894,687**		**0.0022**	**0.0022**		**Pass**		N/A		**Pass**

	FLORIDA RETIREMENT SYSTEM	**GRAND TOTAL - No Future DROPs Retirement Rates**										
	($ 000)						**Liability Test**					
					Liability Ratio			**Individual**		**PVFB**		
	Active PVFB	**M&R**	**GRS**		**Individual**	**Total**		**5%**		**0.5%**		**Composite**
	Withdrawal / Early Retirement	$11,218,057	$10,964,867		(0.0226)	(0.0027)		Pass		Pass		Pass
	Retirement	39,921,241	40,532,284		0.0153	0.0064		Pass		**Fail**		Pass
	Non-Duty Death	897,363	811,405		(0.0958)	(0.0009)		**Fail**		Pass		Pass
	Duty Death	320,604	344,374		0.0741	0.0002		**Fail**		Pass		Pass
	Non-Duty Disability	1,801,279	1,903,015		0.0565	0.0011		**Fail**		Pass		Pass
	Duty Disability	265,294	285,151		0.0748	0.0002		**Fail**		Pass		Pass
	Return of Contributions	92	256		1.7826	0.0000		**Fail**		Pass		Pass
	Subtotal	$54,423,930	$54,841,352		0.0077	0.0044		Pass		N/A		Pass
	Less PVF Contributions	1,897	1,897		0.0000	0.0000		Pass		Pass		Pass
	Total Active PVFB	**$54,422,033**	**$54,839,455**		**0.0077**	**0.0044**		**Pass**		N/A		**Pass**
	Count	525,463	525,463		0.0000	N/A		Pass		N/A		Pass
	Active PVF Salary:	$168,301,777	$172,486,783		0.0249	N/A		Pass		N/A		Pass
	Inactive PVFB											
	Retirees	$28,915,519	$29,498,031		0.0201	0.0061		Pass		**Fail**		Pass
	Terminated Vesteds	$2,672,540	$2,680,807		0.0031	0.0001		Pass		Pass		Pass
	DROPs	$9,506,869	$9,510,162		0.0003	0.0000		Pass		Pass		Pass
	Total Inactive	**41,094,928**	**41,689,000**		**0.0145**	**0.0062**		**Pass**		N/A		**Pass**
	Total	**$95,516,961**	**$96,528,455**		**0.0106**	**0.0106**		**Pass**		N/A		**Pass**

	FLORIDA RETIREMENT SYSTEM	**GRAND TOTAL - No Future DROPs Retirement Rates**										
	($ 000)						**Liability Test**					
					Liability Ratio		**Individual**		**PVFB**			
	Active PVFB	**M&R**	**GRS**		**Individual**	**Total**	**5%**		**0.5%**		**Composite**	
	Withdrawal / Early Retirement	$49,790	$48,467		(0.0266)	(0.0013)	Pass		Pass		Pass	
	Retirement	452,660	464,744		0.0267	0.0115	Pass		**Fail**		Pass	
	Non-Duty Death	22,764	25,881		0.1369	0.0030	**Fail**		Pass		Pass	
	Duty Death	4,654	4,368		(0.0615)	(0.0003)	**Fail**		Pass		Pass	
	Non-Duty Disability	13,714	14,044		0.0241	0.0003	Pass		Pass		Pass	
	Duty Disability	2,908	3,026		0.0406	0.0001	Pass		Pass		Pass	
	Return of Contributions	0	7		699.0000	0.0000	**Fail**		Pass		Pass	
	Subtotal	$546,490	$560,537		0.0257	0.0133	Pass		N/A		Pass	
	Less PVF Contributions	0	0		0.0000	0.0000	Pass		Pass		Pass	
	Total Active PVFB	**$546,490**	**$560,537**		**0.0257**	**0.0133**	**Pass**		N/A		**Pass**	
	Count	742	742		0.0000	N/A	Pass		N/A		Pass	
	Active PVF Salary:	$979,023	$984,045		0.0051	N/A	Pass		N/A		Pass	
	Inactive PVFB											
	Retirees	$342,543	$346,656		0.0120	0.0039	Pass		Pass		Pass	
	Terminated Vesteds	$16,653	$17,667		0.0609	0.0010	**Fail**		Pass		Pass	
	DROPs	$146,720	$147,946		0.0084	0.0012	Pass		Pass		Pass	
	Total Inactive	**505,916**	**512,269**		**0.0126**	**0.0060**	**Pass**		N/A		**Pass**	
	Total	**$1,052,406**	**$1,072,806**		**0.0194**	**0.0194**	**Pass**		N/A		**Pass**	

	FLORIDA RETIREMENT SYSTEM	**GRAND TOTAL - No Future DROPs Retirement Rates**										
	($ 000)						**Liability Test**					
					Liability Ratio			**Individual**		**PVFB**		
	Active PVFB	**M&R**	**GRS**		**Individual**	**Total**		**5%**		**0.5%**		**Composite**
	Withdrawal / Early Retirement	$10,549	$10,350		(0.0189)	(0.0021)		Pass		Pass		Pass
	Retirement	20,985	21,223		0.0113	0.0025		Pass		Pass		Pass
	Non-Duty Death	1,055	1,163		0.1024	0.0011		**Fail**		Pass		Pass
	Duty Death	246	236		(0.0407)	(0.0001)		Pass		Pass		Pass
	Non-Duty Disability	624	653		0.0465	0.0003		Pass		Pass		Pass
	Duty Disability	140	149		0.0643	0.0001		**Fail**		Pass		Pass
	Return of Contributions	0	0		0.0000	0.0000		Pass		Pass		Pass
	Subtotal	$33,599	$33,774		0.0052	0.0018		Pass		N/A		Pass
	Less PVF Contributions	0	0		0.0000	0.0000		Pass		Pass		Pass
	Total Active PVFB	**$33,599**	**$33,774**		**0.0052**	**0.0018**		**Pass**		N/A		**Pass**
	Count	146	146		0.0000	N/A		Pass		N/A		Pass
	Active PVF Salary:	$54,113	$55,183		0.0198	N/A		Pass		N/A		Pass
	Inactive PVFB											
	Retirees	$41,049	$41,489		0.0107	0.0046		Pass		Pass		Pass
	Terminated Vesteds	$6,600	$6,822		0.0336	0.0023		Pass		Pass		Pass
	DROPs	$15,194	$15,249		0.0036	0.0006		Pass		Pass		Pass
	Total Inactive	**62,843**	**63,560**		**0.0114**	**0.0074**		**Pass**		N/A		**Pass**
	Total	**$96,442**	**$97,334**		**0.0092**	**0.0092**		**Pass**		N/A		**Pass**

	FLORIDA RETIREMENT SYSTEM	**GRAND TOTAL - No Future DROPs Retirement Rates**										
	($ 000)						**Liability Test**					
					Liability Ratio		**Individual**		**PVFB**			
	Active PVFB	**M&R**	**GRS**		**Individual**	**Total**	**5%**		**0.5%**		**Composite**	
	Withdrawal / Early Retirement	$39,384	$38,703		(0.0173)	(0.0012)	Pass		Pass		Pass	
	Retirement	162,723	164,803		0.0128	0.0037	Pass		Pass		Pass	
	Non-Duty Death	7,092	7,596		0.0711	0.0009	**Fail**		Pass		Pass	
	Duty Death	1,586	1,523		(0.0397)	(0.0001)	Pass		Pass		Pass	
	Non-Duty Disability	4,347	4,486		0.0320	0.0002	Pass		Pass		Pass	
	Duty Disability	875	931		0.0640	0.0001	**Fail**		Pass		Pass	
	Return of Contributions	6	6		0.0000	0.0000	Pass		Pass		Pass	
	Subtotal	$216,013	$218,048		0.0094	0.0036	Pass		N/A		Pass	
	Less PVF Contributions	0	0		0.0000	0.0000	Pass		Pass		Pass	
	Total Active PVFB	**$216,013**	**$218,048**		**0.0094**	**0.0036**	**Pass**		N/A		**Pass**	
	Count	1,021	1,021		0.0000	N/A	Pass		N/A		Pass	
	Active PVF Salary:	$387,095	$391,138		0.0104	N/A	Pass		N/A		Pass	
	Inactive PVFB											
	Retirees	$275,707	$279,284		0.0130	0.0063	Pass		**Fail**		Pass	
	Terminated Vesteds	$20,332	$20,154		(0.0088)	(0.0003)	Pass		Pass		Pass	
	DROPs	$54,018	$54,268		0.0046	0.0004	Pass		Pass		Pass	
	Total Inactive	**350,057**	**353,706**		**0.0104**	**0.0064**	**Pass**		N/A		**Pass**	
	Total	**$566,070**	**$571,754**		**0.0100**	**0.0100**	**Pass**		N/A		**Pass**	

FLORIDA RETIREMENT SYSTEM	**GRAND TOTAL - Future DROPs Retirement Rates**											
($ 000)							**Liability Test**					
				Liability Ratio			**Individual**		**PVFB**			
Active PVFB	**M&R**	**GRS**		**Individual**	**Total**		**5%**		**0.5%**		**Composite**	
Withdrawal / Early Retirement	$13,660,777	$13,385,142		(0.0202)	(0.0021)		Pass		Pass		Pass	
Retirement	58,843,169	59,480,532		0.0108	0.0050		Pass		Pass		Pass	
Non-Duty Death	1,135,025	1,095,360		(0.0349)	(0.0003)		Pass		Pass		Pass	
Duty Death	458,862	525,725		0.1457	0.0005		**Fail**		Pass		Pass	
Non-Duty Disability	2,349,466	2,474,054		0.0530	0.0010		**Fail**		Pass		Pass	
Duty Disability	593,589	661,520		0.1144	0.0005		**Fail**		Pass		Pass	
Return of Contributions	103	296		1.8731	0.0000		**Fail**		Pass		Pass	
Subtotal	$77,040,991	$77,622,629		0.0075	0.0045		Pass		N/A		Pass	
Less PVF Contributions	1,723	1,723		0.0000	0.0000		Pass		Pass		Pass	
Total Active PVFB	**$77,039,268**	**$77,620,906**		**0.0075**	**0.0045**		**Pass**		N/A		**Pass**	
Count	597,948	597,948		0.0000	N/A		Pass		N/A		Pass	
Active PVF Salary:	$202,587,690	208,653,251		0.0299	N/A		Pass		N/A		Pass	
Inactive PVFB												
Retirees	$35,742,438	$36,465,657		0.0202	0.0056		Pass		**Fail**		Pass	
Terminated Vesteds	3,322,825	3,258,977		(0.0192)	(0.0005)		Pass		Pass		Pass	
DROPs	$12,149,047	$12,166,775		0.0015	0.0001		Pass		Pass		Pass	
Total Inactive	**51,214,310**	**51,891,409**		**0.0132**	**0.0053**		**Pass**		N/A		**Pass**	
Total	**$128,253,578**	**$129,512,315**		**0.0098**	**0.0098**		**Pass**		N/A		**Pass**	

	FLORIDA RETIREMENT SYSTEM	**Special Risk Admin (SRA) - - Future DROPs Retirement Rates**										
	($ 000)						**Liability Test**					
					Liability Ratio			**Individual**		**PVFB**		
	Active PVFB	**M&R**	**GRS**		**Individual**	**Total**		**5%**		**0.5%**		**Composite**
	Withdrawal / Early Retirement	$2,547	2,709		0.0636	0.0018		**Fail**		Pass		Pass
	Retirement	16,685	17,014		0.0197	0.0037		Pass		Pass		Pass
	Non-Duty Death	304	236		(0.2237)	(0.0008)		**Fail**		Pass		Pass
	Duty Death	148	153		0.0338	0.0001		Pass		Pass		Pass
	Non-Duty Disability	558	547		(0.0197)	(0.0001)		Pass		Pass		Pass
	Duty Disability	315	325		0.0317	0.0001		Pass		Pass		Pass
	Return of Contributions	0	0		0.0000	0.0000		Pass		Pass		Pass
	Subtotal	$20,557	$20,984		0.0208	0.0048		Pass		N/A		Pass
	Less PVF Contributions	0	0		0.0000	0.0000		Pass		Pass		Pass
	Total Active PVFB	**$20,557**	**$20,984**		**0.0208**	**0.0048**		Pass		N/A		Pass
	Count	76	76		0.0000	N/A		Pass		N/A		Pass
	Active PVF Salary:	$29,589	$28,794		(0.0269)	N/A		Pass		N/A		Pass
	Inactive PVFB											
	Retirees	$52,233	$52,903		0.0128	0.0075		Pass		**Fail**		Pass
	Terminated Vesteds	$2,016	$1,680		(0.1667)	(0.0037)		**Fail**		Pass		Pass
	DROPs	$15,070	$15,096		0.0017	0.0003		Pass		Pass		Pass
	Total Inactive	**69,319**	**69,679**		**0.0052**	**0.0040**		**Pass**		N/A		**Pass**
	Total	**$89,876**	**$90,663**		**0.0088**	**0.0088**		Pass		N/A		Pass

	FLORIDA RETIREMENT SYSTEM	**Special Risk (SR) - - Future DROPs Retirement Rates**										
	($ 000)							**Liability Test**				
					Liability Ratio			**Individual**		**PVFB**		
	Active PVFB	**M&R**	**GRS**		**Individual**	**Total**		**5%**		**0.5%**		**Composite**
	Withdrawal / Early Retirement	$2,068,404	$2,047,068		(0.0103)	(0.0008)		Pass		Pass		Pass
	Retirement	15,670,689	15,876,951		0.0132	0.0076		Pass		**Fail**		Pass
	Non-Duty Death	283,197	304,536		0.0754	0.0008		**Fail**		Pass		Pass
	Duty Death	144,300	180,387		0.2501	0.0013		**Fail**		Pass		Pass
	Non-Duty Disability	607,303	619,038		0.0193	0.0004		Pass		Pass		Pass
	Duty Disability	337,574	381,311		0.1296	0.0016		**Fail**		Pass		Pass
	Return of Contributions	2	30		14.0000	0.0000		**Fail**		Pass		Pass
	Subtotal	$19,111,469	$19,409,321		0.0156	0.0109		Pass		N/A		Pass
	Less PVF Contributions	-	-		0.0000	0.0000		Pass		Pass		Pass
	Total Active PVFB	**$19,111,469**	**$19,409,321**		**0.0156**	**0.0109**		**Pass**		N/A		**Pass**
	Count	64,848	64,848		0.0000	N/A		Pass		N/A		Pass
	Active PVF Salary:	$36,155,429	$36,186,668		0.0009	N/A		Pass		N/A		Pass
	Inactive PVFB											
	Retirees	$5,554,585	$5,683,152		0.0231	0.0047		Pass		Pass		Pass
	Terminated Vesteds	$509,610	$438,393		(0.1397)	(0.0026)		**Fail**		Pass		Pass
	DROPs	$2,092,280	$2,103,732		0.0055	0.0004		Pass		Pass		Pass
	Total Inactive	**8,156,475**	**8,225,277**		**0.0084**	**0.0025**		**Pass**		N/A		**Pass**
	Total	**$27,267,944**	**$27,634,598**		**0.0134**	**0.0134**		**Pass**		N/A		**Pass**

	FLORIDA RETIREMENT SYSTEM	**Senior Management (SM) - - Future DROPs Retirement Rates**										
	($ 000)						**Liability Test**					
					Liability Ratio		**Individual**		**PVFB**			
	Active PVFB	**M&R**	**GRS**		**Individual**	**Total**	**5%**		**0.5%**		**Composite**	
	Withdrawal / Early Retirement	$272,046	$273,019		0.0036	0.0003	Pass		Pass		Pass	
	Retirement	1,579,632	1,578,212		(0.0009)	(0.0005)	Pass		Pass		Pass	
	Non-Duty Death	31,700	32,005		0.0096	0.0001	Pass		Pass		Pass	
	Duty Death	10,000	11,046		0.1046	0.0004	**Fail**		Pass		Pass	
	Non-Duty Disability	33,934	35,896		0.0578	0.0007	**Fail**		Pass		Pass	
	Duty Disability	5,415	5,954		0.0995	0.0002	**Fail**		Pass		Pass	
	Return of Contributions	3	11		2.6667	0.0000	**Fail**		Pass		Pass	
	Subtotal	$1,932,730	$1,936,143		0.0018	0.0012	Pass		N/A		Pass	
	Less PVF Contributions	0	0		0.0000	0.0000	Pass		Pass		Pass	
	Total Active PVFB	**$1,932,730**	**$1,936,143**		**0.0018**	**0.0012**	**Pass**		N/A		**Pass**	
	Count	5,652	5,652		0.0000	N/A	Pass		N/A		Pass	
	Active PVF Salary:	$3,776,610	$3,927,718		0.0400	N/A	Pass		N/A		Pass	
	Inactive PVFB											
	Retirees	$560,802	$564,142		0.0060	0.0011	Pass		Pass		Pass	
	Terminated Vesteds	$95,074	$93,454		(0.0170)	(0.0006)	Pass		Pass		Pass	
	DROPs	$318,896	$320,322		0.0045	0.0005	Pass		Pass		Pass	
	Total Inactive	**974,772**	**977,918**		**0.0032**	**0.0011**	**Pass**		N/A		**Pass**	
	Total	**$2,907,502**	**$2,914,061**		**0.0023**	**0.0023**	**Pass**		N/A		**Pass**	

FLORIDA RETIREMENT SYSTEM	**Regular (REG) +TRS+SCOERS - - Future DROPs Retirement Rates**											
($ 000)							**Liability Test**					
				Liability Ratio			**Individual**		**PVFB**			
Active PVFB	**M&R**	**GRS**		**Individual**	**Total**		**5%**		**0.5%**		**Composite**	
Withdrawal / Early Retirement	$11,218,057	$10,964,867		(0.0226)	(0.0026)		Pass		Pass		Pass	
Retirement	40,867,242	41,328,519		0.0113	0.0048		Pass		Pass		Pass	
Non-Duty Death	790,953	728,088		(0.0795)	(0.0007)		**Fail**		Pass		Pass	
Duty Death	298,357	328,518		0.1011	0.0003		**Fail**		Pass		Pass	
Non-Duty Disability	1,688,249	1,800,605		0.0666	0.0012		**Fail**		Pass		Pass	
Duty Disability	246,604	270,181		0.0956	0.0002		**Fail**		Pass		Pass	
Return of Contributions	92	243		1.6413	0.0000		**Fail**		Pass		Pass	
Subtotal	$55,109,554	$55,421,021		0.0057	0.0032		Pass		N/A		Pass	
Less PVF Contributions	1,723	1,723		0.0000	0.0000		Pass		Pass		Pass	
Total Active PVFB	**$55,107,831**	**$55,419,298**		**0.0057**	**0.0032**		**Pass**		N/A		**Pass**	
Count	525,463	525,463		0.0000	N/A		Pass		N/A		Pass	
Active PVF Salary:	$161,268,929	$167,165,650		0.0366	N/A		Pass		N/A		Pass	
Inactive PVFB												
Retirees	$28,915,519	$29,498,031		0.0201	0.0061		Pass		**Fail**		Pass	
Terminated Vesteds	$2,672,540	$2,680,807		0.0031	0.0001		Pass		Pass		Pass	
DROPs	$9,506,869	$9,510,162		0.0003	0.0000		Pass		Pass		Pass	
Total Inactive	**41,094,928**	**41,689,000**		**0.0145**	**0.0062**		**Pass**		N/A		**Pass**	
Total	**$96,202,759**	**$97,108,298**		**0.0094**	**0.0094**		**Pass**		N/A		**Pass**	

FLORIDA RETIREMENT SYSTEM	**Judicial (J) - - Future DROPs Retirement Rates**											
($ 000)							**Liability Test**					
			Liability Ratio			**Individual**		**PVFB**				
Active PVFB	**M&R**	**GRS**	**Individual**	**Total**		**5%**		**0.5%**		**Composite**		
Withdrawal / Early Retirement	$49,790	$48,467	(0.0266)	(0.0012)		Pass		Pass		Pass		
Retirement	468,300	486,450	0.0388	0.0170		Pass		**Fail**		Pass		
Non-Duty Death	20,943	22,768	0.0871	0.0017		**Fail**		Pass		Pass		
Duty Death	4,334	4,000	(0.0771)	(0.0003)		**Fail**		Pass		Pass		
Non-Duty Disability	13,136	13,196	0.0046	0.0001		Pass		Pass		Pass		
Duty Disability	2,725	2,762	0.0136	0.0000		Pass		Pass		Pass		
Return of Contributions	0	6	599.0000	0.0000		**Fail**		Pass		Pass		
Subtotal	$559,228	$577,649	0.0329	0.0173		Pass		N/A		Pass		
Less PVF Contributions	0	0	0.0000	0.0000		Pass		Pass		Pass		
Total Active PVFB	**$559,228**	**$577,649**	**0.0329**	**0.0173**		**Pass**		N/A		**Pass**		
Count	742	742	0.0000	N/A		Pass		N/A		Pass		
Active PVF Salary:	$934,620	$924,338	(0.0110)	N/A		Pass		N/A		Pass		
Inactive PVFB												
Retirees	$342,543	$346,656	0.0120	0.0039		Pass		Pass		Pass		
Terminated Vesteds	$16,653	$17,667	0.0609	0.0010		**Fail**		Pass		Pass		
DROPs	$146,720	$147,946	0.0084	0.0012		Pass		Pass		Pass		
Total Inactive	**505,916**	**512,269**	**0.0126**	**0.0060**		**Pass**		N/A		**Pass**		
Total	**$1,065,144**	**$1,089,918**	**0.0233**	**0.0233**		**Pass**		N/A		**Pass**		

	FLORIDA RETIREMENT SYSTEM	**Legislative - Attorney - Cabinet (ESO) - - Future DROPs Retirement Rates**										
	($ 000)						**Liability Test**					
					Liability Ratio		**Individual**		**PVFB**			
	Active PVFB	**M&R**	**GRS**		**Individual**	**Total**	**5%**		**0.5%**		**Composite**	
	Withdrawal / Early Retirement	$10,549	$10,350		(0.0189)	(0.0021)	Pass		Pass		Pass	
	Retirement	21,726	22,332		0.0279	0.0062	Pass		**Fail**		Pass	
	Non-Duty Death	964	1,006		0.0436	0.0004	Pass		Pass		Pass	
	Duty Death	229	215		(0.0611)	(0.0001)	**Fail**		Pass		Pass	
	Non-Duty Disability	593	605		0.0202	0.0001	Pass		Pass		Pass	
	Duty Disability	130	135		0.0385	0.0001	Pass		Pass		Pass	
	Return of Contributions	0	0		0.0000	0.0000	Pass		Pass		Pass	
	Subtotal	$34,191	$34,643		0.0132	0.0047	Pass		N/A		Pass	
	Less PVF Contributions	0	0		0.0000	0.0000	Pass		Pass		Pass	
	Total Active PVFB	**$34,191**	**$34,643**		**0.0132**	**0.0047**	**Pass**		N/A		**Pass**	
	Count	146	146		0.0000	N/A	Pass		N/A		Pass	
	Active PVF Salary:	$51,705	$51,807		0.0020	N/A	Pass		N/A		Pass	
	Inactive PVFB											
	Retirees	$41,049	$41,489		0.0107	0.0045	Pass		Pass		Pass	
	Terminated Vesteds	$6,600	$6,822		0.0336	0.0023	Pass		Pass		Pass	
	DROPs	$15,194	$15,249		0.0036	0.0006	Pass		Pass		Pass	
	Total Inactive	**62,843**	**63,560**		**0.0114**	**0.0074**	**Pass**		N/A		**Pass**	
	Total	**$97,034**	**$98,203**		**0.0120**	**0.0120**	**Pass**		N/A		**Pass**	

	FLORIDA RETIREMENT SYSTEM	**Elected County Officers (ECO) - - Future DROPs Retirement Rates**										
	($ 000)						**Liability Test**					
					Liability Ratio		**Individual**		**PVFB**			
	Active PVFB	**M&R**	**GRS**		**Individual**	**Total**	**5%**		**0.5%**		**Composite**	
	Withdrawal / Early Retirement	$39,384	$38,662		(0.0183)	(0.0013)	Pass		Pass		Pass	
	Retirement	166,809	171,054		0.0254	0.0075	Pass		**Fail**		Pass	
	Non-Duty Death	6,578	6,721		0.0217	0.0003	Pass		Pass		Pass	
	Duty Death	1,494	1,406		(0.0589)	(0.0002)	**Fail**		Pass		Pass	
	Non-Duty Disability	4,146	4,167		0.0051	0.0000	Pass		Pass		Pass	
	Duty Disability	826	852		0.0315	0.0000	Pass		Pass		Pass	
	Return of Contributions	6	6		0.0000	0.0000	Pass		Pass		Pass	
	Subtotal	$219,243	$222,868		0.0165	0.0064	Pass		N/A		Pass	
	Less PVF Contributions	0	0		0.0000	0.0000	Pass		Pass		Pass	
	Total Active PVFB	**$219,243**	**$222,868**		**0.0165**	**0.0064**	**Pass**		N/A		**Pass**	
	Count	1,021	1,021		0.0000	N/A	Pass		N/A		Pass	
	Active PVF Salary:	$370,808	$368,276		(0.0068)	N/A	Pass		N/A		Pass	
	Inactive PVFB											
	Retirees	$275,707	$279,284		0.0130	0.0063	Pass		**Fail**		Pass	
	Terminated Vesteds	$20,332	$20,154		(0.0088)	(0.0003)	Pass		Pass		Pass	
	DROPs	$54,018	$54,268		0.0046	0.0004	Pass		Pass		Pass	
	Total Inactive	**350,057**	**353,706**		**0.0104**	**0.0064**	**Pass**		N/A		**Pass**	
	Total	**$569,300**	**$576,574**		**0.0128**	**0.0128**	**Pass**		N/A		**Pass**	

Appendix B

Addendum to the July 1, 2005, Actuarial Valuation Report

GRS Gabriel Roeder Smith & Company
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March 22, 2006

Mr. Chuck Hefren
Senior Legislative Analyst
Government Operations
Office of Program Policy Analysis
and Government Accountability
State of Florida
111 W. Madison St., Suite 312
Tallahassee, Florida 32399-1475

Re: Actuarial Review

Dear Chuck:

As discussed, as a follow up to our preliminary review provided under cover letter dated March 8, 2006 of the July 1, 2005 Actuarial Valuation Report (Actuarial Valuation Report) of the Florida Retirement System (FRS) prepared by Milliman including the revised Valuation Exhibits provided under memorandum from Ms. Sarabeth Snuggs dated February 10, 2006, we have further analyzed the liability (gain) / loss analysis shown on page I-6 of the Actuarial Valuation Report.

Background

We understand this liability (gain) / loss analysis is based upon assumed retirement rates that do NOT recognize the probability of future DROPs. As you are aware, we believe *true* FRS liabilities should reflect future DROPs as a best estimate and that the use of retirement rates ignoring future DROPs may only be appropriate for allocation of costs and contributions among the participating groups of participating employers.

Notwithstanding the above, we note the Actuarial Valuation Report (page I-6) indicates a liability loss of $1.317 billion sourced form inactive data clean-up. The magnitude of this item is approximately 48% of the total reported liability loss ($2.739 billion).

The paragraph following the chart on page I-6 of the Actuarial Valuation Report indicates that the effect of the treatment of DROPs creates systematic actuarial losses. The next following paragraph of the Actuarial Valuation Report indicates this is the first year of this detailed analysis and that … *the data breakdown created reporting issues that are being investigated.*

Recommendation

Based upon our analysis, we believe additional analysis and detail is currently warranted for this substantial source of actuarial liability loss.

Mr. Chuck Hefren
March 22, 2006
Page Two

Analysis

We further reviewed the member census data provided by Milliman for purposes of our preliminary review of the July 1, 2004 Actuarial Valuation Report and the July 1, 2005 Actuarial Valuation Report.

Our analysis identified two (2) potential sources of actuarial (gains) / losses resulting from inactive data clean-up.

The first source was inactive data reported as of July 1, 2005 where the age did not increase one year from the age reported as of July 1, 2004 – 1,166 vested terminees, 7 beneficiaries and 65 service (includes DROPs) retirees (i.e. 1,238 total). We calculated an actuarial loss of $840,252 (i.e. $44,417,880 - $43,577,628) due to age corrections.

The second source was inactive data reported where the benefit expected to be paid as of July 1, 2005 (including expected COLA increase of 3%) did not match the reported benefit being paid as of July 1, 2005 – 6,838 vested terminees, 1,678 beneficiaries and 2,325 service (includes DROPs) retirees (i.e. 10,841 total). We calculated an actuarial liability (gain) of ($33,850,176) (i.e. $773,911,232 - $807,761,408) due to benefit corrections.

Our analysis limited to these two potential sources of actuarial liability (gains) / losses produced a net actuarial liability (gain) of ($33,009,924) (i.e. $840,252 - $33,850,176). This contrasts materially from the liability loss shown in the Actuarial Valuation Report of $1,317 billion. We believe further detail and analysis by the valuation actuary is indicated.

We trust the above is response to your request and look forward to responding to any questions or comments from the interested parties that may arise.

We look forward to responding to any questions or comments from the interested parties. If you should have any question concerning the above, please do not hesitate to contact us.

Sincerest regards,

L. F. Wilson

Lawrence F. Wilson, A.S.A.
Senior Consultant and Actuary

Ky Le

Ky T. Le
Consultant

Gabriel Roeder Smith & Company

Appendix C

Response from the Department of Management Services

In accordance with the provisions of s. 11.51(5), *Florida Statutes*, a draft of our report was submitted to the Secretary of the Department of Management Services for her review and response.

The Secretary's written response is reprinted herein beginning on page 56.

DEPARTMENT OF MANAGEMENT
SERVICES

"We serve those who serve Florida"

JEB BUSH
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Tom Lewis, Jr.
Secretary

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April 14, 2006

Gary R. VanLandingham, Director
Office of Program Policy Analysis
And Government Accountability
Claude Pepper Building, Room 312
111 West Madison Street
Tallahassee, Florida 32399-1475

Dear Mr. VanLandingham:

Pursuant to Section 11.51(5), Florida Statutes, this is our response to the recommendations included in your report dated April 2006, Florida Retirement System Pension Plan Fully Funded and Valuation Met Standards. Our response corresponds with the order of your findings and recommendations.

Finding: Our actuarial consultant, Gabriel, Roeder, Smith & Company, concluded that the 2005 valuation was made in accordance with relevant state laws and rules and actuarial standards. It further concluded that assumptions and methods used in the 2005 valuation were generally reasonable.

Recommendations:

Based on the review by Gabriel, Roeder, Smith & Company, we make the recommendations described below:

- ***We recommend that additional analysis of the causes for differences between expected and reported actuarial liabilities be conducted. Specifically, each source and the associated amount contributing to the difference should be identified, as well as the primary cause for the discrepancy.***

- ***We recommend that all information required for actuarial reports for local public employee retirement systems as specified in Chapter 60T-1, Florida Administrative Code, also be included in the FRS actuarial valuation report. This information adds value for stakeholders and imposes a discipline on the report preparer.***

- ***We recommend that the Legislature, the Department of Management Services, and the department's consulting actuary continue to closely monitor the FRS Pension Plan's funding status.***

The downward trend in the plan's funding status is not a major concern at this time because the plan continues to be fully funded.

Department Response:

We are pleased with the conclusion from Gabriel, Roeder, Smith & Company that the 2005 actuarial valuation was made in accordance with relevant state laws, rules, and actuarial standards and that the assumptions and methods used in the 2005 valuation were reasonable.

Our responses to the recommendations are:

- The 2005 Florida Retirement System Pension Plan Valuation is the first report that includes details of gains and losses. We agree to expand the reporting of details involving gains and losses to include analysis of the causes for differences between expected and reported actuarial liabilities.

- All of the elements of the local public employee retirement systems' report that apply to the FRS Pension Plan already exist in the valuation report. However, in future reports, we will create a crosswalk to show where each of these elements are contained within the report. This crosswalk will be included as an appendix to the report. Certain elements of the local public employee retirement system report do not apply to the FRS Pension Plan. For example, FRS contributions are calculated as a percentage of payroll. Legislation is then enacted that requires the State and local government employers to contribute those percentages of each FRS participant's salary for the subsequent year. The actual dollars flowing into the FRS may be greater than or less than the actual dollar anticipated by the valuation since actual salaries one year later will be different than the valuation projections. Each subsequent FRS valuation will adjust for any disparities from the previous valuation. To actually calculate the amount of dollars expected versus the amount of dollars contributed is not a relevant piece of data because the contributions to the FRS are not developed as actual dollar amounts.

- The Department agrees to continue to closely monitor the FRS Pension Plan's funding status. The downward trend in the funding status is expected to continue as the actuarial surplus is depleted. The 2000 Legislature enacted a requirement for an annual actuarial valuation of the FRS instead of biennial actuarial valuations. In the same bill[1], the rate stabilization mechanism (RSM) was created in section 121.031(3)(f), Florida Statutes, to ensure that the use of

[1] See section 26 of chapter 2000-169, Laws of Florida.

surplus by the Legislature to reduce employer contribution rates was done in a prudent manner. For example, the mechanism uses only a portion of the surplus for this purpose, and requires a reevaluation of the available surplus amount each year. In addition, we note that the updated 2005 Wilshire Associates study entitled "State Retirement Systems: Funding Levels and Asset Allocation" states the FRS has the highest actuarial valuation of assets to liabilities or "funded ratio" among state pension systems.

If further information is needed concerning our response, please contact Steve Rumph, Inspector General, or John Davis, Audit Director, at 488-5285.

Sincerely,

Tom Lewis, Jr.

TL/sr

cc: John Holley, Chief of Staff
Department of Management Services

Lee Ann Korst, Deputy Secretary
Department of Management Services

Sarabeth Snuggs, Director, Retirement
Department of Management Services