

**ARIZONA CORRECTIONS OFFICER
RETIREMENT PLAN**

**Audit of the
June 30, 2005 Actuarial Valuation**

DRAFT

Submitted by:

***THE SEGAL GROUP, INC.,
THE PARENT OF THE SEGAL COMPANY
ALL RIGHTS RESERVED***

September, 2006

DIRECT DIAL NUMBER
303-714-9936

E-MAIL ADDRESS
lthompson@segalco.com

August 28, 2006

Mr. Eric Jorgensen
Arizona Joint Legislative Budget Committee
1716 West Adams
Phoenix, AZ 85007

Re: **Actuarial Auditing Services for the Arizona Joint Legislative Budget Committee
(Arizona Corrections Officer Retirement Plan June 30, 2005 Actuarial Valuation)**

Dear Mr. Jorgensen:

We are pleased to present the results of this limited-scope audit of the June 30, 2005 actuarial valuation. The purpose of this audit is to conduct a review of the actuarial methods and procedures employed by the Arizona Corrections Officer Retirement Plan. This audit includes the following:

1. **Report review** – this report includes a review of the valuation results and how they comply with actuarial standards, and whether such valuation reflects appropriate disclosure information under any required reporting.
2. **Methods and assumptions review** – this audit provides an analysis and a review of the actuarial assumptions and methods utilized in determining the funded status and accrued liability as of June 30, 2005.
3. **Assumptions and test lives review and reconciliation** – this audit discusses the procedures used to validate the participant data and the test lives selected, with a detailed review of the findings.

This review was conducted under the supervision of Leslie L. Thompson, a Fellow of the Society of Actuaries, Member of the American Academy of Actuaries and an Enrolled Actuary under ERISA. This review was conducted in accordance with the standards of practice prescribed by the Actuarial Standards Board.

Mr. Eric Jorgensen
August 28, 2006
Page 2

The assistance of Rodwan Consulting Company, Public Safety Personnel Retirement System (PSPRS) and the Arizona Joint Legislative Budget Committee (JLBC) staff is gratefully acknowledged.

We appreciate the opportunity to be retained as the independent actuarial auditors for Arizona JLBC and we are available to answer any questions you may have on this report.

Sincerely,

Leslie L. Thompson, FSA, MAAA, EA
Senior Vice President and Consulting Actuary

Susan M. Hogarth, MAAA, EA
Consulting Actuary

/dqm

cc: Brad Ramirez, ASA, MAAA, EA

DRAFT

Table of Contents

	PAGE
Executive Summary	1
Section I	
Purpose, Scope and Methodology of the Audit	3
Section II	
Validation of Benefits Valued	6
Section III	
Validation of Actuarial Assumptions Employed	11
Section IV	
Validation of Funding and Asset Valuation Methods	12
Section V	
Conclusions	14
Audit Checklist	16

A **limited scope audit** (actuarial review) of any system is intended to provide an assurance that the liabilities and costs of the Plan are reasonable. The review is not a full replication of the actuarial valuation results, but is a review of the key components in the valuation process that encompass the derivation of the liabilities and costs for the Plan. These key components are the data, the benefits valued, the actuarial assumptions used in the funding, and the asset valuation method employed. The receipt of valuation output for a select group of test lives provides the detail necessary to validate each of these key components.

We reviewed all information supplied to us. We also requested and reviewed additional information provided by the retained actuary. Finally, we considered the reasonableness of the actuarial assumptions and methods in the context of the recently completed experience study and our own experience.

The enhancements we recommend are:

Conclusion:

We have discovered numerous areas of concern in the valuation of the liabilities. Some may be immaterial but some could have a larger impact. We recommend a review of these concerns with the retained actuary, a confirmation of these changes and then a determination of the liabilities. In addition, we recommend a full scope audit (“parallel”) which is a full replication of the actuarial valuation results, hence a parallel of the entire valuation process.

Data:

- Confirm duplicates in data with PSPRS and eliminate redundant data;
- Data processing to request actual salary and payment form information from PSPRS; and
- Thorough review of missing data items, through more detailed data questions and answers between the retained actuary and PSPRS.

Liabilities/Benefits:

- Revise the liability under the active retirement benefit to accurately reflect the benefit formula for all years;
- Revise the liability under the active withdrawal benefit to accurately reflect the termination refund;
- Perform further analysis of the pre-retirement death and disability benefits for actives;
- Review the benefits and liability under the Health Insurance Premium Subsidy as part of the revised valuation review;
- Perform an Experience Study on the effect of the type of disability occurrence (accidental versus duty-related) and mortality (normal versus duty-related); and
- Explicitly value vested termination (deferred retirement) benefits.

Valuation Process:

- Match timing of salary with timing of decrement.

Assumptions:

- Assumptions tend to be on the aggressive side, which poses a risk to the ongoing funding of the Plan. We recommend a review of these assumptions.

Report:

- Make corrections to plan provisions and assumptions summarized in the actuarial valuation report;
- Add gain/loss by source to actuarial valuation report; and
- Revise valuation results incorporating the audit findings mentioned throughout this report.

The valuation data used by the retained actuary appears both accurate and complete when compared to the Plan records with minor exceptions. However, we suggest that additional items be included in the data request. We also verified that certain aspects of a select group of sample test life calculations are reasonable.

With respect to the other aspects of this limited scope actuarial audit, we found the following:

- Benefits projected in the sample test life group do not match stated plan provisions in the actuarial valuation report, hence we recommend the valuation report be revised;
- Certain assumptions appear on the aggressive side of industry norms (e.g., 8.50% return, 6.00% payroll growth); and
- Funding and asset valuation methods are consistent with those employed in other public sector plans.

PURPOSE, SCOPE AND METHODOLOGY OF THE AUDIT

Purpose of the Audit

The Arizona Joint Legislative Budget Committee (JLBC) retained consulting services to determine whether the actuarial procedures and methods used by Public Safety Personnel Retirement System (PSPRS) and the retained actuary are valid and appropriate to properly value the Arizona Corrections Officer Retirement Plan's retirement benefits. The Arizona JLBC requested a review of the reasonableness of the consulting actuary's conclusions and the conformance of their work with generally accepted actuarial standards and practices. Finally, the Arizona JLBC asked for recommendations of how the Plan can improve procedures for estimating the required level of funding.

Scope of the Audit

This actuarial audit has a specified, limited scope in its review. A full scope audit would include performing the 2005 actuarial valuation from start to finish; in essence, a parallel valuation. This limited scope audit reviews the valuation already performed, through reviewing the benefits, assumptions and methods, without a full replication of the actuarial valuation results. This review is conducted through analyzing detailed output of certain select test lives from the membership group.

In not performing a full parallel valuation, the following implicit assumptions are made:

- The actuary's valuation system is accurately applying each assumption as stated;
- The actuary's valuation system is properly allocating the present value of benefits between normal cost and actuarial accrued liability; and
- The actuary's valuation system is "adding" together liabilities appropriately for each decrement, for each member, and over the entire population (meaning no segment is being "dropped off" and no particular liabilities are being omitted).

What a limited scope audit can provide is:

- Assurance that appropriate benefits are being valued;
- Confirmation that the valuation system is accurately applying assumptions to the test lives;
- A measurement of actuarial assumptions against a peer group and hence an assessment of their reasonableness;
- Confirmation that the program is valuing benefits as stated in the valuation report;
- A review of the reasonableness of actuarial funding and asset valuation methods; and
- An understanding as to whether there are any indications that the liabilities and contribution rates shown are not reasonable or are incorrectly calculated.

The purpose of this audit is to express an opinion regarding the reasonableness or accuracy of the actuarial assumptions, methods, valuation results, and contribution rates. The limited-scope review is not the same as an actuarial valuation, but represents a “second opinion” of the findings and processes included in the valuation.

Methodology of the Audit for the 2005 Actuarial Valuation

The overall objective of the valuation audit is to ascertain whether, on a long-term basis, the benefit promises can be supported by the existing assets and anticipated contributions to the Plan.

The measurement of the reasonableness of the funding levels encompass three key analyses:

- A verification of the benefits being projected for future payment;
- A verification of the appropriateness of the actuarial assumptions that are used in calculating the liability; and
- A verification of the appropriateness of the funding and asset valuation methods.

Benefits Analysis

Critical to projecting accurate benefits is receiving complete and accurate data. We reviewed the process by which data is prepared for the actuarial valuation, including:

- An assessment of the completeness of the data; and
- A review of the data screening process employed.

We compared our benefit calculations and projections through the test life review with the retained actuary’s and have noted the differences. We also tested that the benefits projected are consistent with governing provisions.

Assumptions Analysis

The second critical component in assessing the reasonableness of the funding levels is in the selection and the application of the actuarial assumptions. With respect to the selection of assumptions, we;

- Examined individual test life calculations; and
- Verified that the assumptions used in the calculations are accurately described in the valuation report.

Methods Analysis

The third component in assessing funding levels is the selection and application of the actuarial cost method (including the method for amortizing the unfunded actuarial accrued liability) and the asset valuation method (including smoothing techniques). We:

- Compared the methods against those used in the industry norm; and
- Provided an assessment of the appropriateness for the Plan.

DRAFT

VALIDATION OF BENEFITS VALUED

Data Used in the Valuation

The PSPRS staff supplies the participant data to the retained actuary. We obtained data from PSPRS and compared the counts of members to the counts used by the actuary in the valuation report. The counts for the active, disabled members and spouse beneficiaries matched. The count for the retirees was one record higher in the valuation report, and the child beneficiary count was one lower in the valuation report. The count for inactive members was nine records lower in the valuation report. With 14,359 members as of June 30, 2005, nine records represents less than 0.1% of the total and is therefore not significant.

The retained actuary receives near complete data from PSPRS. The data reconciliation process completed by the retained actuary involves initial data checks to determine missing or defective data. Questions regarding this data are addressed to the PSPRS staff. Once answered, the retained actuary produces age, service and payroll summaries for active members, and attained age and pension benefit summaries for retirees of each of the groups to confirm the totals are consistent with those provided by the PSPRS staff.

With regards to missing/incorrect data:

- The retained actuary and PSPRS have made an assumption of age 25 at valuation date for missing dates of birth for new hires.
- Records with missing salary were not filled, and \$0 salary was used in the liability calculation. This understates the liability of the Plan. An average salary should be used so a liability can be developed.
- Three records were missing date of hire and service as of the valuation date. The retained actuary confirmed their assumption of a date of hire of July 1, 2005, which corresponds to service equal to zero. This is a reasonable assumption.

The salary data received by the retained actuary from the PSPRS staff is computed based on the most recent annual member contributions, since the employer groups do not furnish salary data. We recommend that the retained actuary obtain actual salary data from PSPRS to more accurately calculate benefits and liabilities.

During the data review process, we noticed duplicate records were provided in the retained actuary's data. These duplicate records were included in the counts shown in the valuation report, since our counts matched the valuation report, including these duplicate records. We recommend a more detailed data processing and reconciliation confirmation be performed during the next actuarial valuation to identify all duplicates and the proper records to be valued.

The form of payment for pay status members (retired members and survivors) was not provided in the retained actuary's data nor the PSPRS data. The retained actuary has indicated they are valuing all retired members, who have a survivor birth date provided in the data, as receiving a 80% Joint and Survivor benefit. We recommend that the PSPRS staff provide the actual elected forms of payment in

the data submitted to the retained actuary so the liabilities may be more accurately determined.

Data Risk Element

Continuing to include duplicate records on data files will increase the costs of the Plan. Maintaining duplicate records will result in double counting records and add to liabilities. We recommend a review of all duplicate records and the cost impact to the Plan.

A thorough review of missing data items should be conducted between the retained actuary and PSPRS. Assumptions on missing data currently made could impact the funding of the Plan.

In testing the data between PSPRS and the retained actuary, the match would indicate the actuary is projecting liabilities and costs on PSPRS's set of complete data. The changes and confirmation of salary and payment form mentioned above further illustrates how the liabilities and costs tie directly to the information provided by PSPRS. Thus accurate data will lead to accurate liabilities and minimize gains and losses to changes in data.

Projected Benefits in the Valuation

Benefits are projected for each potential benefit payable from the Plan. We tested the normal retirement, early retirement, withdrawal, death and disability benefits against the provisions as stated in the actuarial valuation report.

We reviewed the detailed calculations for a selected group of test lives to determine whether the valuation correctly projected plan benefits and whether the costs and liabilities were determined in accordance with the Plan's stated methods and assumptions. We requested specific test lives in order to compare the benefit amounts projected in the valuation against our understanding of the Plan's benefits summarized in the Summary of Benefits at www.psprs.com.

The following is a list of recommended analysis of the actuarial liabilities requiring a parallel type audit:

- *The valuation assumes all decrements occur at mid-year, while using a beginning of year Final Average Salary. The decrement and salary should occur at the same time. The liabilities could be more accurately valued by matching the timing of salary with the timing of each decrement. The current method assumes a member might terminate mid-year, but earn lower pay for that half year.*
- *The termination refund benefit defined in the actuarial valuation report and Summary of Benefits website is stated as following a schedule from 100% to 200% (which includes an additional amount under a service schedule) of member contributions based on years of service from 5 to 10 years and 200% after 10 years of service. The active withdrawal benefit is being valued by the retained actuary as 100% of member contributions for all years, hence this is understating liabilities. We recommend correcting this calculation, which will result in a cost impact to the Plan.*

- *1. The normal retirement benefit for members with less than 20 years of service is not shown in the valuation report, but is defined in the Summary of Benefits as 2.50% times Final Average Salary times years of service. The retained actuary's test life defines this benefit as 10% of Final Average Salary (for all years of service) plus 4.00% of Final Average Salary times service for service greater than ten years. This benefit is understated and should be reviewed as it is understating liabilities and is a cost impact to the Plan.*
- 2. For members with 20 years of service, but less than 25 years, the normal retirement benefit should be 50% of Final Average Salary plus 2.00% times Final Average Salary times service greater than 20 years. However, the valuation is overstating this as 50% of Final Average Salary plus 2.50% times Final Average Salary times service.*
- 3. The benefit for members with service greater than or equal to 25 years is being valued with an extra year of service, hence the benefit maximum of 80% of Final Average Salary is applied one year early. This is understating the liabilities.*

We recommend a revised valuation to determine the cost impact and savings to the Plan, regarding these retirement benefit corrections.

- *The benefit for vested terminations is calculated by the retained actuary in Excel as the present value of benefits of 2.50% times Final Average Salary times service, deferred to 62 with interest only, but not less than the present value of employee contributions. These are not being valued through the liability programs, and are not defined for vested terminations under the Summary of Benefits from the PSPRS website. We recommend an explicit study of the vested terminated benefits to determine the cost impact to the Plan.*
- *Further analysis regarding the retained actuary's calculation of disability and death benefits versus actual Plan definition of benefits is recommended. Through our test life review, we compared the definitions for disability and pre-retirement death benefits in the actuarial valuation report versus the Summary of Benefits on www.psprs.com, and were not able to match the disability and pre-retirement death benefits currently being valued by the retained actuary. We recommend a more detailed review of these benefits.*
- *The valuation report states one set of disability and mortality rates, which are not split between duty-related and non-duty related. The retained actuary assumes 100% of pre-retirement deaths are duty related. We recommend an Experience Study or analysis regarding the duty versus non-duty related disability and death to determine if it warrants more specific assumptions due to actual experience.*
- *We recommend the removal of the Vested Termination (Deferred Retirement) benefit shown in actuarial valuation report, since this benefit is not provided by the Plan and is not being valued.*

The following is a list of suggested changes/corrections to the actuarial valuation report:

- *The spouse age assumption that males are three years older than females should be stated, in the actuarial valuation report.*
- *The married assumption of 90% should be stated in the actuarial valuation report.*
- *The actuarial valuation report should state the normal retirement benefit for members with less than 20 years of service.*
- *The actuarial valuation report should include the definition of the pre-retirement death benefit for vested terminated participants. The death benefits are not being valued by the retained actuary, however we recommend this benefit be added which would increase the costs to the Plan.*

The actuarial valuation report states that the “Future Benefit Increase Reserve” is an investment income reserve held for future pension increases pursuant to state statute. The Board may consider testing the adequacy of the reserve against an assumption for ad-hoc Cost-of-Living Adjustments (COLA) to the original retirement benefits.

We realize there is a liability accounted for under the Health Insurance Premium Subsidy, but were unable to match the benefits stated under the PSPRS Summary of Benefits. Also we were not provided with enough detailed data to complete our review, hence we recommend a thorough review of the health benefits during the valuation rerun.

The test life comparison exhibit on the next page summarizes the calculations performed by Segal and the retained actuary, and shows the differences by each decrement in the present value of benefits calculation.

ARIZONA CORRECTIONS OFFICER RETIREMENT PLAN

JUNE 30, 2005 VALUATION

TEST LIFE COMPARISON

(excluding health insurance premium subsidy and non-vested refund benefits)

ACTIVES:	Active (Youngest)		Active (Hired After Age 30)		Active (Hired After Age 45)	
	Rodwan	Segal	Rodwan	Segal	Rodwan	Segal
Present Value of Benefits						
CURRENT AGE:						
Death	\$216	\$472	N/A	N/A	N/A	N/A
Disability	287	1,107	N/A	N/A	N/A	N/A
Withdrawal	5,926	8,106	N/A	N/A	N/A	N/A
Retirement	15,623	15,852	\$52,700	\$54,061	\$20,374	\$25,542
Total PVB (Current Age)	\$22,052	\$25,537	\$52,700	\$54,061	\$20,374	\$25,542
ENTRY AGE:						
Death	\$216	\$472	N/A	N/A	N/A	N/A
Disability	287	1,107	N/A	N/A	N/A	N/A
Withdrawal	5,926	8,106	N/A	N/A	N/A	N/A
Retirement	15,623	15,852	\$10,895	\$11,176	\$13,956	\$17,496
Total PVB (Entry Age)	\$22,052	\$25,537	\$10,895	\$11,176	\$13,956	\$17,496
RATIO OF SEGAL/RODWAN						
Present Value of Benefits:						
CURRENT AGE:						
Death		218.52%		N/A		N/A
Disability		385.71%		N/A		N/A
Withdrawal		136.79%		N/A		N/A
Retirement		101.47%		102.58%		125.37%
Total PVB (Current Age)		115.80%		102.58%		125.37%
ENTRY AGE:						
Death		218.52%		N/A		N/A
Disability		385.71%		N/A		N/A
Withdrawal		136.79%		N/A		N/A
Retirement		101.47%		102.58%		125.37%
Total PVB (Entry Age)		115.80%		102.58%		125.37%

Inactives	Deferred Vested		Retiree 1		Retiree 2	
	Rodwan	Segal	Rodwan	Segal	Rodwan	Segal
Total PVB	\$43,315	\$37,115	\$272,800	\$272,832	\$296,682	\$296,572
RATIO OF SEGAL/RODWAN						
Total PVB		85.69%		100.01%		99.96%

Inactives	Disabled Retiree		Beneficiary		Child Beneficiary	
	Rodwan	Segal	Rodwan	Segal	Rodwan	Segal
Total PVB	\$189,039	\$189,039	\$111,564	\$111,536	\$73,070	\$72,928
RATIO OF SEGAL/RODWAN						
Total PVB		100.00%		99.97%		99.81%

VALIDATION OF ACTUARIAL ASSUMPTIONS EMPLOYED

As part of our review of the actuarial assumptions, we recommend the following be reviewed:

- Interest rate of 8.50% - This rate is aggressive when viewed within the public sector universe.
- Payroll growth of 6.00% - This rate violates GASB which states that payroll growth is limited to inflation. We recommend a review of the payroll growth assumption.
- Mortality table for healthy and disabled participants is based on the 1971 Group Annuity Mortality Table projected to 2000 for males (Healthy) and 1984 for males (Disability), and the same tables are set back six years for females. We recommend updating these tables to more recent mortality tables.

Also, we reviewed the economic and demographic actuarial assumptions adopted by the Plan against generally accepted actuarial standards and practices contained in Actuarial Standard of Practice No. 27 covering economic assumptions and Actuarial Standard of Practice No. 35 covering demographic and non-economic assumptions, and have noted our concerns.

DRAFT

VALIDATION OF FUNDING AND ASSET VALUATION METHODS

Funding Method for Liabilities

The entry-age normal method is being used in this valuation. This is a common and appropriate method for this type of plan. The entry-age normal funding method is somewhat conservative and provides for a stable annual cost (as a percentage of payroll) throughout a participant's working career.

We spot-checked the liability calculation for three active members, one deferred vested participant, two retirees, one disabled, and two beneficiaries to verify projected annual benefits. We did not run a "parallel" valuation, which is beyond the scope of this audit.

Asset Valuation Method

An actuarial asset valuation method is commonly used to smooth year-to-year fluctuations in the market value of assets, which helps stabilize the calculated contribution rate from year to year. The current method employed by the Plan in determining the actuarial value of assets is one that recognizes market gain and loss fluctuations over a seven-year period.

It is common to have gains and losses smoothed over a period of three to five years, although some plans are moving to a longer period. Just as is done here, many Plans first calculate the assumed return based on the actuarial valuation interest rate (8.50%, net of expenses in this case) and then smooth any returns that differ from the assumed rate. Thus, if the Plan earns the assumed rate, no smoothing is needed. As of June 30, 2005, the smoothed value is 116% of the market value, hence the actuarial value of assets exceeds market value. Therefore, deferred losses must be made up as well as the actuarial assumed rate, in order to avoid further losses. This means the Plan has to earn in excess of 8.50% in order to maintain a stable contribution rate.

It is unclear if there is a threshold corridor, which minimizes actuarial value of asset volatility, limiting the difference between the actuarial value of assets and market value of assets. A typical corridor would guarantee that the actuarial value is always between 80% and 120% of the market value, regardless of the smoothing method calculation. We recommend reviewing the installation of a corridor and providing the corridor information in the actuarial valuation report, if applicable.

Amortization of the Unfunded Actuarial Accrued Liability (UAAL)

The overriding question for the Arizona Corrections Officer Retirement Plan is "how adequate are the contribution rates for funding the promised benefits?" Since both benefits and contribution rates are established by state statute, one measure of the adequacy is in the period required to pay off the unfunded accrued liability of the Plan. GASB sets forth recommendations that the maximum acceptable amortization period should not exceed 40 years (30 years for actuarial valuations beginning June 15, 2006).

As of the June 30, 2005 actuarial valuation, the period required to pay the unfunded actuarial accrued liability is 20 years, using a 6.00% payroll growth assumption. This period for amortization is GASB compliant as of the June 30, 2005 valuation date, however the payroll growth assumption of 6.00% violates GASB, which limits payroll growth to inflation. Hence we recommend this be reviewed.

The funded ratio for the Plan as of June 30, 2005 was 96% on an actuarial value of asset (valuation

assets) basis, which is above the average of public sector plans (on a market value basis the funded ratio is 87%).

DRAFT

CONCLUSIONS

This limited scope audit reviewed the data used, the benefits valued, and the actuarial methods and assumptions employed in the June 30, 2005 actuarial valuation. The sample lives provided by the actuary reflect the plan provisions of the Plan as stated in the 2005 actuarial valuation. These sample lives also demonstrate that application of the entry age normal funding method and the actuarial assumptions were applied as stated in the valuation. This audit raises concerns in the benefits being valued as well as the assumptions.

The Arizona JLBC has asked for suggestions to consider in the ongoing valuation of the Plan. We suggest:

Data

- Review duplicate records: Maintaining duplicate records will double count liabilities and increase the costs of the Plan. We recommend a review of duplicate records and the cost impact to the Plan.
- Enhance data request: Receiving accurate and detailed census data is essential in correctly calculating liabilities. We recommend that the retained actuary work with PSPRS to obtain accurate salary for actives, and form of payment elected for pay status participants.
- Missing Data: Making assumptions for missing data can alter plan costs; hence obtaining complete data is key to calculating accurate liabilities. A thorough review of missing data should be conducted between the retained actuary and PSPRS.

Benefits

- Timing review: The retained actuary assumes all decrements occur at mid-year, while using a beginning of year Final Average Salary. We recommend a review of decrement timing versus salary to more accurately value the liabilities to match the timing of salary with the timing of each decrement.
- Active withdrawal liability revision: The Plan states that a tiered percentage of employee contribution refund should be used for the withdrawal benefit. We discovered the withdrawal benefit is not being calculated consistent with Plan provisions, and recommend revising this calculation as it understates liabilities for the Plan.
- Vested termination benefit analysis: The benefit for current vested terminations is valued as a deferred benefit in Excel, and discounted only with interest (and no mortality). We recommend an explicit study of these benefits regarding the cost to the Plan.
- Normal retirement benefit correction: The normal retirement benefit should be revised to reflect the correct plan provisions regarding benefit multipliers for all years of service. Current calculations are not valuing benefits in accordance with the stated plan provisions.
- Disability and pre-retirement death benefit review: Further analysis and review should be completed to determine the cost impact to the Plan regarding the calculation of these benefits, as we were not able to match benefits using those stated in the Summary of Benefits from PSPRS.

- Disability and mortality occurrence study: We recommend an Experience Study or analysis regarding duty versus non-duty related occurrences for disability and death to determine if it warrants more specific assumptions due to actual experience.
- Health Insurance Premium Subsidy review: We recommend a thorough review of benefits and liabilities associated with the Health Insurance Premium Subsidy.

Assumptions

- Corrections to Provisions and Assumptions in Actuarial Valuation Report: The actuarial valuation report should be corrected for the following provisions and assumptions:
 - Spouse age assumption of males are three years older than females;
 - Married assumption of 90%;
 - Remove vested termination (deferred retirement) benefit; and
 - Provide threshold corridor for actuarial value of assets, if applicable.
 - The assumptions for the interest rate of 8.50% and payroll growth of 6.00% are aggressive when based on experience and market, and produce lower contribution rates than if the plan used more median assumptions.

Report

- Add gain/loss by source analysis to actuarial valuation report: We recommend an analysis of gain/loss by source be provided in the June 30, 2006 valuation report, summarizing the experience between actual decrements versus expected decrements as well as other sources of gains and losses.

- ❑ Review duplicate records. Advise the retained actuary to meet with PSPRS to confirm these records.
- ❑ Enhance data request to include more detailed data. The retained actuary to work with PSPRS regarding additional data fields.
- ❑ Thorough review of missing data. The retained actuary work with PSPRS regarding actual data items.
- ❑ Explicit study of vested termination (deferred retirement) benefits. The retained actuary work with PSPRS to receive actual benefits.
- ❑ Timing review. The retained actuary to review timing of decrements and salary.
- ❑ Active withdrawal liability revision. The retained actuary to correct this liability calculation.
- ❑ Normal retirement benefit correction. The retained actuary revise normal retirement benefits to reflect correct Plan provisions and determine cost impact to the Plan.
- ❑ Disability and pre-retirement death benefit review. The retained actuary to analyze actual plan benefits versus those used for Plan liabilities to determine all applicable impacts to the Plan.
- ❑ Review of Health Insurance Premium Subsidy during the rerun of the valuation.
- ❑ Make corrections to Plan provisions and assumptions summarized in the actuarial valuation report.
- ❑ Experience Study on the effect of type of disability occurrence.
- ❑ Add gain/loss analysis by source to actuarial valuation report.
- ❑ Rerun valuation to analyze actual benefits promised, liabilities and cost impacts to the Plan of anticipated revisions.