Los Angeles City Employees' Retirement System (LACERS) Actuarial Audit

June 30, 2006

August 15, 2007

Mr. Robert Aguallo, Jr.
General Manager
Los Angeles City Employees' Retirement System
360 East Second Street, 2nd Floor
Los Angeles, CA 90012-4207

Re: Actuarial Audit as of June 30, 2006

Dear Robert:

As requested, we have performed an audit of the actuarial valuation as of June 30, 2006 for the Los Angeles City Employees' Retirement System (LACERS). We also performed an audit of the experience study as of June 30, 2005 for LACERS, including a full independent replication of the study. This report presents our findings.

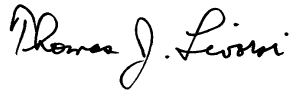
All participant data, asset information, and system provisions that we relied upon for this study were provided by LACERS and the currently retained actuary, The Segal Company (Segal). If any of this information is incorrect, our conclusions may change.

To the best of our knowledge, this report is complete and accurate and was prepared in accordance with generally accepted actuarial principles as prescribed by the American Academy of Actuaries.

We would like to express our gratitude to Segal and LACERS staff for their cooperation in providing us with the documentation needed to carry out our review.

The undersigned are members of the American Academy of Actuaries who meet the Qualification Standards required for rendering the actuarial opinion contained herein.

Michael de Leon, FCA, EA, MAAA
Senior Manager



Thomas Livorsi, FSA, FCA, EA, MAAA
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LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM (LACERS)
ACTUARIAL AUDIT
AS OF JUNE 30, 2006

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I. BACKGROUND AND PURPOSE

The purpose of an actuarial valuation is to provide a timely best estimate of the System's liabilities and contribution levels. This can help ensure that the current assets and future contributions will be sufficient to provide the promised future benefits. To make these determinations, actuarial assumptions are made to project the occurrence, amount, and timing of benefits which will become payable under LACERS. The extent to which the actuarial valuations accurately measure the System's liabilities and contribution levels depends on how well the actuarial assumptions predict emerging System experience.

The purpose of an experience study is to determine reasonable assumptions to use in the actuarial valuation. Generally, they should be based on a combination of past System experience, future long-term expectations, and professional judgment.

One purpose of an actuarial audit is to provide assurance that the actuarial work is being performed correctly and in accordance with generally accepted actuarial practice. Another benefit is that the reviewing actuary can identify areas of improvement that may increase the value and understanding in the actuarial services provided to the System.

We have been retained by LACERS for the following purposes:

- Audit the actuarial valuation of pension and retiree health plans as of June 30, 2006
- Audit the experience study as of June 30, 2005, including an independent replication
- Reconcile significant findings of our audit with the retained actuary

Because we did not perform a full replication of the actuarial valuation as of June 30, 2006, we are unable to determine the potential impact of changes suggested in this report. The actual financial impact of any changes should be reviewed by the System's retained actuary.

This report discusses our findings and recommendations and details the processes we used to perform our review.

II. SUMMARY OF FINDINGS AND RECOMMENDATIONS

The overall findings of this actuarial audit is that the June 30, 2006 valuation and June 30, 2005 experience study were performed by Segal in a way that is reasonable and consistent with generally accepted actuarial principles. The valuation presents a fair representation of the actuarial liabilities and develops contribution rates which are generally appropriate to satisfy the funding obligations of the System. We did not find any issues that rose to the level of serious concern.

Recognizing that the results, assumptions, and methodologies are reasonable and appropriate, we believe there is some room for improvement. We have made recommendations in this report that in our opinion may more accurately estimate the liabilities and appropriate contribution levels. We have also noted clarifications in the reporting that could be made to improve understanding of the actuarial work performed.

Generally, our audit comments will be one of the following:

- Level of Serious Concern - concluding that some part of the work may be incorrect, unreasonable, or inconsistent with generally accepted actuarial principles; or

- Suggestions and Considerations - suggesting changes or further analysis which might improve the actuarial estimates and add value and understanding to the actuarial work.

The following issues rise to the **level of serious concern**:

There were no issues that rose to the level of serious concern.

The following are **suggestions and considerations**:

The table below summarizes the issues and estimated impact of any changes. Please note that we can only provide a high level comment on the impact of change because we were not asked to perform a matching valuation. The retained actuary can provide more detailed estimates of the impact of change (as was provided for the Programming of the Retiree Medical Plan benefits).

Area	**Issue**	**Impact of Change**
Actuarial Cost Method	Entry Age Normal method should be considered	May provide more contribution stability
Programming, Retiree Medical	A portion of the benefits provided to retirees that are assumed to elect single coverage is not being valued, and several shortcuts have been taken that individually overstate or understate the liabilities	The retained actuary estimated the net effect of making the key programming changes. The result would be a small increase in the OPEB liability and ARC. These changes can flow through future gains and losses.

Area	Issue	Impact of Change
Programming, Retirement	100% pre-retirement survivor benefit is treated as 50%	Minor increase in retirement liabilities
	The 401(a)(17) pay limit does not appear to be applied	De minimis decrease in retirement liabilities (effects less than six active members at 7/1/06)
Report Content	Clarify purpose statement on page i of the retirement report	Report clarification
	Add a 10- to 20-year benefit payout projection to retirement report	Enhanced report content
	Add gain/loss by retirement, withdrawal, disability and mortality	Enhanced report content
	Present asset reconciliations on market, rather than actuarial basis	Report clarification
	Add an historical summary of significant plan changes	Enhanced report content
	Increase disclosure of some assumptions	Report clarification
	State the per capita cost assumption in the report by showing tables of the subsidies by plan and by years of service	Report clarification
Actuarial Assumptions	Consider lowering the assumed investment return on member accounts	Minor decrease in retirement liabilities; primarily affects members that take a refund of member contributions at termination
	Begin to recognize future mortality improvement	Potential increase in retirement and retiree medical liabilities
	Consider an assumption that some vested members will withdraw their member account at termination, forfeiting their city-provided benefit	Decrease in retirement liabilities
	Lower the starting point of the health trend to give more weight to actual experience	Decrease in retiree medical liabilities

More discussion of our findings and review process are included in the following sections.

III. AUDIT OF THE ACTUARIAL VALUATION AS OF JUNE 30, 2006

A. DATA VALIDITY

Actuarial Standard of Practice No. 23, *Data Quality,* provides general guidance for determining if data is appropriate for its intended purpose and whether it is sufficiently reasonable, consistent, and comprehensive.

This section determines the completeness, quality, and consistency of the data delivered by the System to the retained actuary. It also assesses the reasonableness of the retained actuary's reconciliation and data adjustment procedures.

Audit Findings:

We believe the client data is of sufficient completeness, consistency, and quality to perform the actuarial valuation and that all data procedures used by the retained actuary seem reasonable, such as the data reconciliation and data adjustments. In general, the data maintained by LACERS is above average when compared to the quality of data we have reviewed for other governmental entities.

Comments:

Our process for reviewing data validity focused on the reasonableness of values included in the data field, year over year changes, and a comparison of the data provided to Segal by LACERS to the final data actually used by Segal. We did not verify the accuracy of the individual data by going back to original sources as that was outside of the scope of this review.

We received the following LACERS data files:

- Member data: Member06.txt, Member05.txt, Member04.txt, and Member03.txt
- Retiree data: Payee06.txt, Payee05.txt, Payee04.txt, and Payee03.txt

The data files looked very consistent from year to year. The number of records and the layout of the data provided were similar in each of the years. We compared the records from the Member05 file to the records in the Member06 and Payee06 file to see if many records dropped off. We found that only 45 records from the 2005 file were not in either of the 2006 files. This is very good considering the total number of records is about 45,000.

We analyzed the Member06 and Payee06 files to assess the quality of the data received. We believe the data is of sufficient quality to perform the actuarial valuation. There are very few missing values. The following are some of the active member data issues, none of which occurred very frequently (note that the issues listed below are commonly found in any retirement system database):

- Members that were hired at ages less than 16, which probably points to either date of birth errors or date of hire errors (< 1% of active data)
- Members with zero credited service when their hire dates would indicate that they should have some credited service (< 3% of active data)
- Members with zero salary (< 1% of active data - these records were also missing a lot of other data)

Retirees all had total benefit amounts that were greater than zero and reasonable. Some of the payment options appeared to be erroneous (i.e., a 1% J&S option), but there were very few of those. Quite a few of the J&S payment options were missing spouse information, which require assumptions for spouse birth dates, but this is a fairly common occurrence in valuations.

Overall, the client data seemed to have few problems and was reasonably complete.

The following table was created to compare the client's data to the data used in the valuation. This helps provide an assessment of the data reconciliation procedures and the level of data adjustments made by the retained actuary to the client's data.

	Client Data	Valuation Data	Val/Client
Active Members			
Count	28,841	28,839	100%
Avg. Age	45.4	45.4	100%
Avg. Svc	11.6	11.7	101%
Avg. Earned Pay	57,463	60,104	105%*
Avg. Member Account	40,116	40,118	100%
Vested Inactive Members			
Count	2,903	2,903	100%
Avg. Age	42.6	42.7	100%
Retired Members			
Count	10,244	10,234	100%
Avg. Age	71.3	71.4	100%
Avg. Svc	26.3	26.3	100%
Avg. Benefit	3,025	3,116	103%**
Disabled Members			
Count	885	885	100%
Avg. Age	60.2	60.2	100%
Avg. Svc	12.1	12.2	100%
Avg. Benefit	1,254	1,290	103%**
Beneficiaries			
Count	3,451	3,451	100%
Avg. Age	75.3	75.3	100%
Avg. Benefit	1,391	1,433	103%**

*We understand that the difference in average earned pay is because the retained actuary makes a half-year increase to get the correct salary timing in their valuation system, which is reasonable.

**We understand that the difference in average benefit is that the actuary added a 3% cost-of-living increase that was not reflected in the data in order to get the correct COLA timing in their valuation system, which is reasonable.

The above data summary that we prepared is very close to the data summary in the valuation report. This indicates the actuary does not make many adjustments to the client's data and that the data reconciliation procedures are fairly straightforward.

III. AUDIT OF THE ACTUARIAL VALUATION AS OF JUNE 30, 2006

B. REVIEW OF ACTUARIAL METHODS AND PROCEDURES

This section determines if the actuarial cost method, actuarial asset method and amortization method are reasonable and consistent with generally accepted actuarial practice.

Actuarial Cost Method

Under Actuarial Standard of Practice No. 4, *Measuring Pension Obligations*, an "acceptable actuarial cost method" meets the following criteria:

- costs are allocated over the period of time that benefits are earned; and
- costs are allocated on a basis that has a logical relationship to the plan's benefit formula (compensation, service, benefit level, etc.)

It is also commonly desired that the actuarial cost method will produce stable normal costs as a percent of pay.

Audit Findings:

The actuarial cost method is a reasonable and generally accepted method. However, we suggest that the Entry Age Normal method should be considered because it may provide more contribution stability.

Comments:

We understand that the annual recommended LACERS contribution is based on the System's normal cost plus an amortization of the unfunded actuarial liability. This total amount is divided by covered payroll to determine the recommended contribution rate.

The normal cost is determined using the Projected Unit Credit (PUC) actuarial cost method. PUC is an "Accrued Benefit" funding method. This means that the liability is determined as the benefit accrued to date with salary increases projected to decrement age. The normal cost under this method is determined as the amount of benefit that will accrue during the year. This is a generally acceptable actuarial cost method. However, it has characteristics that could be undesirable for the LACERS plan sponsor.

PUC is a popular method used for funding private sector plans and is the required method to use when reporting under FASB. The advantage of using the PUC method is that the liability relates directly to the pattern of earning benefits. In the private sector, this permits a plan that is 100% funded on a PUC basis to freeze future accruals (for example if the company wanted to switch to a Defined Contribution Plan), and if all assumptions are met, to have no future contribution requirements to the plan. The disadvantage to this funding method is that as a population ages, the normal cost will increase as a percent of payroll because of the pattern of earning benefits. The benefits earned for an employee near retirement age are much more valuable than when they are younger.

The Entry Age Normal (EAN) actuarial cost method is more commonly used in public sector pension plans. EAN is a "Prospective" funding method. This means that the present value of all future benefits (PVFB) is determined for each employee, and is then spread evenly (as either a level dollar or level percentage of pay) over each employee's career. This funding method has the advantage of stability of contributions over time

because the normal cost is intended to be the same regardless of the age of the population. Since governmental entities generally do not have the ability to freeze the accruals of their plan, a "Prospective" funding method is generally preferable to an "Accrued Benefit" funding method. According to the Public Funds Survey*, 70% of surveyed public sector pension plans use the Entry Age Normal funding method (14% use PUC, 9% use Aggregate, and 7% use Frozen Initial Liability).

We recommend that LACERS consider changing the actuarial funding method to Entry Age Normal – Level Percent of Pay for the pension plan and Entry Age Normal – Level Dollar for the OPEB plan. The immediate effect on liabilities and annual contributions should be considered as well as the long-term funding goals of the System.

*The Public Funds Survey, sponsored by the National Association of State Retirement Administrators and the National Council on Teacher Retirement, is a continuously updated collection of data regarding over 100 major governmental pension systems.

Actuarial Asset Method

Generally, a reasonable actuarial asset method meets the following criteria:

- actuarial value should bear a reasonable relationship to market value
- method should not be designed to produce actuarial values consistently above or below market value
- actuarial values should fall within a fairly narrow corridor around market value
- differences from market value should be recognized over a reasonable period

Audit Findings:

The actuarial asset method is a reasonable and generally accepted method.

Comments:

The actuarial value of assets for the entire System equals the total market value minus any unrecognized gains and losses from the past five years. Gains and losses are the difference between the actual return and the expected return (currently 8.0%). This is a commonly-used approach and it meets the "reasonable method" criteria above.

To determine the actuarial value of retirement assets (for funding retirement benefits), the total actuarial value is multiplied by the ratio of the market value of retirement assets to the total market value:

$$AV\ retirement\ assets = total\ AV \times (MV\ retirement\ assets \div total\ MV)$$

Similarly, to determine the actuarial value of retiree health assets (for funding retiree health benefits) the total actuarial value is multiplied by the ratio of the market value of retiree health assets to the total market value:

$$AV\ retiree\ health\ assets = total\ AV \times (MV\ retiree\ health\ assets \div total\ MV)$$

This is a reasonable split of the actuarial value for the retirement and retiree health plans, including a reasonable allocation of gains and losses among the plans.

Amortization Methods

There are many ways to amortize the changes to the unfunded actuarial liability due to gains and losses, plan changes, assumption and method changes, and other items. Generally, amortization should be made:

- over a reasonable time period
- in a rational and systematic way, such as a level dollar amount or a level percentage of pay

Audit Findings:

The amortization method is a reasonable and generally accepted method.

Comments:

The amortization of unfunded actuarial liabilities is made as a level percent of projected pay over various time periods, depending on the source:

Unfunded Liability	Amortization Period
Combined Bases	30 years
Plan Changes	30 years
Assumption Changes	30 years
Gains and Losses	15 years
One-year Contribution Lag	15 years
GASB Contribution Deficiency	15 years

"Combined Bases" means that several existing bases are combined and re-amortized over 30 years.

"One-year Contribution Lag" means there is a gain or loss because the new contribution rate is not implemented until one year after its determination.

"GASB Contribution Deficiency" means that deficiencies from contributions less than the Annual Required Contribution are amortized as a separate component of the GASB ARC.

These are reasonable time periods, and level percent of pay amortization is a rational basis.

Several old bases were combined and re-amortized over 30 years as of June 30, 2005. This is a reasonable approach that slightly decreased the contribution (the net effect of all changes in the June 30, 2005 valuation resulted in a slightly higher contribution than determined in the June 30, 2004 valuation). We assume this will not be done frequently, however, so that the shorter, more conservative amortization periods will generally be maintained.

The amortization method also requires adjustments to the time periods shown above if the equivalent single amortization period exceeds the maximum amortization period permitted by the applicable GASB statements. For GASB Nos. 25 and 27, the maximum amortization period has been 40 years but changes to 30 years for fiscal year 2007 and beyond. For GASB Nos. 43 and 45, the maximum amortization period is 30 years.

It appears that the current actuary correctly established "GASB Contribution Deficiency" bases for deficiencies at June 30, 2004 and June 30, 2005. These deficiencies occurred because prior to 2006, the amortization method was not adjusted when the equivalent single amortization period exceeded the 40-year amortization limit.

For the OPEB valuation, the actuarial gains during fiscal year 2006 were not separately amortized. Instead the gains were aggregated with the initial unfunded actuarial accrued liability and amortized over the remaining period for the combined bases (29 years). This is a reasonable method for amortizing the liability to avoid exceeding the 30-year maximum amortization period.

III. AUDIT OF THE ACTUARIAL VALUATION AS OF JUNE 30, 2006

C. DETAILED REVIEW OF SAMPLE LIVES

We reviewed test cases from the retained actuary's valuation system that we selected in order to determine if the actuarial assumptions, methods and plan provisions are being applied appropriately in their valuation.

Audit Findings:

We determined that the pension plan provisions are generally being valued correctly for the cases we reviewed, but that the retiree medical plan provisions had some concerns that need to be addressed.

Comments:

We selected seven test cases with different combinations of gender, age, service and pay. The retained actuary provided us with detailed output for these seven members from their valuation system. Retirement output was received for all samples selected. For the retiree medical plan, Segal was not able to provide the requested test cases before the necessary deadline. Instead, we reviewed the output for one requested test case plus four additional members for whom Segal had already produced output as part of their annual valuation process. We felt this to be a reasonable method for the retiree medical plan sample lives since independently selecting the individuals would not likely have raised any different programming issues from the ones noted below.

For the retiree medical benefits, we found some concerns in the programming being used. The retained actuary estimated the effect of making the changes noted in the first, fourth, and fifth bullet points below. The net effect of the changes was estimated to increase the OPEB liability by 1.5% and increase the dollar amount of the annual required contribution to the OPEB plan by 3.2%. Based on these estimates, we do not feel that the programming issues rise to the level of a serious concern. Changes in the programming should be made in the June 30, 2007 valuation and the effect of these changes should appear as an actuarial loss.

We found the following areas for concern in the programming for retiree medical benefits:

- For active employees, the expected premium and maximum subsidy during retirement are split evenly between the retiree and spouse with the probability of marriage applied for the spouse benefit. The problem is that if the retiree is not married, the benefit is being limited by 50% of the maximum subsidy. This means that the pre-65 claims are being undervalued.

- For active employees, the PPO benefit is weighted 25% and the HMO is weighted 75%. This seems reasonable for pre-65 benefits (and post-65 with Part B only) since the observed participation in 2006 was 23.4% in the PPO and 76.6% in the HMOs; however, for the post-65 population (with Parts A and B), this may not be reasonable. The post-65 observed participation in 2006 was 32.8% in the PPO and 67.2% in the HMOs. A split of 1/3 PPO and 2/3 HMO may be more appropriate for the post-65 group.

- The HMO plans are being combined and valued as if they are all Kaiser. For the pre-65 population, the Secure Horizons CA HMO premium is about 3% higher than the Kaiser premium (Single coverage). Since 18% were observed to participate in the

Secure Horizons HMO in 2006, this could have a significant effect on the liabilities. For the post-65 population, the Secure Horizons CA HMO premium is 5%-6% lower than the Kaiser premium. Since 10.4% were observed to participate in the Secure Horizons CA HMO in 2006, this could have a significant effect on the liabilities. SCAN and Secure Horizons NV and AZ are each less than 1% of the observed population and could reasonably be ignored.

- The maximum post-65 subsidy for a married retiree in the PPO plan was determined as $7,959. This should be $6,998 (or $6,992 depending on the correct maximum subsidy for 2007 – reported in different locations as $983 and $984 per month).

- The spouse allocation of the maximum subsidy for post-65 benefits was determined as $2,223 ($7,959 – $5,736). Based on our understanding of the intention of this calculation, it should be $2,893 ($6,998 – $4,105).

- The method of allocating the remaining maximum subsidy to the spouse incorrectly applies the post-65 benefit if the participant has less than 25 years of service because the member's vesting percentage follows a different pattern than the spouse's vesting percentage. For example, one sample life we reviewed valued 100% of the post-65 maximum benefit for the spouse even though the participant only had 23 years of service at retirement (the pre-65 vesting percentage was being correctly determined as 92%). 100% is, of course, the correct post-65 vesting percentage if the participant only has Single coverage.

- Retirees and spouses are assumed to have the same premium costs. This may be reasonable for pre-65 benefits (the Single + 1 premium is between 0.2% and 0.6% less than twice the Single premium), but the effect could be somewhat significant for post-65 benefits (the Single + 1 premium is between 0.5% and 3.2% less than twice the Single premium).

- For the active sample life with 23 years of service at age 55, the maximum subsidy provided to the spouse while the participant is over 65 and the spouse is under 65 is not correct. It is listed as $5,277, which is half of the family subsidy ($11,472 * 92% = $10,554). It should actually be $1,975 which is the excess of the family subsidy over the single premium ($10,554 - $8,579).

- For the retiree sample life with Single + 1 coverage that we reviewed, the maximum subsidy is not being applied correctly while the spouse is under age 65 and the member is over age 65. We are not certain how the maximum subsidy of $5,050 is being determined, but the value should be $4,504 ($6,500 - $1,996).

- For the same retiree benefit sample life, the surviving spouse maximum subsidy is not being valued correctly. While the spouse is under age 65, the maximum subsidy should be $4,920 (88% * $465.91 * 12).

- For the deferred vested sample life, the maximum subsidy is not being applied correctly after age 65. For the member, the limit should be 90% of the claim amount since the member had only 19 years of service at termination. That would be $3,695 for the PPO and $1,796 for the HMO. There are similar issues for the spouse/survivor benefits for this sample life as mentioned above.

- In the sample lives provided, we did not see the determination of the reimbursement of Medicare Part B premiums for the member.

In general, it appears that a couple of shortcuts were taken to simplify the programming of the retiree medical benefits. While we do not have a problem with taking the shortcuts in general, we believe that the effects that these shortcuts have on liability should be initially determined to be certain that they are not adversely affecting the results and can be used with confidence in the future.

For the pension benefits, we found that the actuarial assumptions and plan provisions seem to be used appropriately. However, we feel the following two issues need to be noted:

- We understand that LACERS provides a 100% survivor benefit for death before retirement for certain members, but it seems that a 50% spouse factor is being used in the valuation. This has a minor impact on the results of the valuation.

- We understand that LACERS limits the pay used in determining a member's benefit according to the compensation limits of Internal Revenue Code 401(a)(17), but it does not seem that the pay limits are being applied to the sample lives we received. It is possible that pay is limited, but we could not discern this from the information provided. This only affects a handful of participants and has a very minor impact on the results of the valuation. It may be reasonable not to value this limitation given that it affects so few members.

III. AUDIT OF THE ACTUARIAL VALUATION AS OF JUNE 30, 2006

D. REVIEW OF VALUATION REPORT

Calculations

This section discusses whether the calculations in the report appear to have been performed correctly, including application of the actuarial methods.

Audit Findings:

The calculations appear to have been carried out correctly and the methods seem to be applied appropriately.

Comments:

The only comment we have is on the development of the Net Pension Obligation and Annual Pension Cost pursuant to GASB 27. In the development of the GASB Net Pension Obligation, interest on the NPO and the ARC adjustment were delayed one year. The actuary made this adjustment due to the one-year contribution lag. The intention appears to be to match the timing of the ARC adjustment with the required contribution that includes the amortization of the shortfall contribution.

While this method does not follow the rules specifically outlined in Paragraphs 12 and 13 of GASB No. 27, it does follow the intent of the ARC adjustment. We think this is a reasonable method for determining the ARC adjustment based on the spirit of the GASB Statement. Ultimately, the decision to permit this method of determining the Net Pension Obligation under GASB No. 27 is the responsibility of auditor of the City's financial statements.

Report Content

This section determines if the valuation report meets applicable professional standards. Specifically, it should:

- Accurately and fairly represent the financial condition of the System
- Be written so that it can be reasonably understood by the intended audience
- Contain enough information for another actuary to form an opinion about the reasonableness of its conclusions

Audit Findings:

The report meets applicable actuarial standards of practice, and it seems to accurately represent the funded status of LACERS. In addition, the plan provisions seem to match the *Membership Guide* and the *Los Angeles Administrative Code.*

Comments:

Below are some general comments to the retained actuary. These comments do not seem be serious concerns, but they are areas for consideration.

- On page 5 of the retirement valuation, the Market Value should be $7,6**74**,999,374.
- On p. i of the retirement report, the stated purpose is, "to determine whether the assets and contributions are sufficient to provide the prescribed benefits." It seems that the primary purpose is to determine the recommended contribution rate itself.
- We understand that salaries are now annualized for part-time members. We could not determine the reason for this adjustment or its impact on the recommended contribution rate. We feel that these issues should be disclosed.
- We suggest showing projected benefit payments in the retirement valuation. This could be for a 10- to 20-year period, showing current and future retirees separately.
- We suggest adding a gain/loss analysis by source to future valuations. This would show gains and losses due to withdrawal, retirement, mortality and disability from experience different than assumed. This analysis, together the existing gain/loss information, would help track assumption issues for the next experience study.
- The FDBIP and Larger Annuity Program are not discussed, but we assume those benefits are not included. We feel that the actuary should clarify whether those benefits have been included in either the retirement or retiree medical valuation reports.
- We feel that Exhibit F in the retirement valuation would be more useful to LACERS if presented on a Market Value basis.
- We recommend adding detail to describe how the 10% reciprocal service assumption is applied. For example, how much service is presumed to be earned?
- The retiree medical program report should discuss the impact of Medicare Part D reimbursements and Medicare Part B income-level premium adjustments.

- We recommend adding more detail regarding the per capita cost development (see Section IV for more detail)

- We suggest adding statistics on data adjustments. For example, how many records have missing birth dates or missing salary?

- We suggest adding detail on the nature of data adjustments. For example, what is the assumed age of members with missing birth dates?

- We suggest adding a historical summary of significant plan changes. Even if there is not much history known that can be included immediately, this could be a useful repository for future changes.

- We suggest that the actuary disclose any assumptions for the following:

    - Form of payment assumed at retirement

    - Probability of electing a refund of member account at termination

IV. AUDIT OF THE EXPERIENCE STUDY AS OF JUNE 30, 2005

A. REVIEW OF ECONOMIC ASSUMPTIONS

Actuarial Standards of Practice No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations,* provides guidance to actuaries in selecting economic assumptions.

Generally stated, economic assumptions should be based on a combination of the actuary's professional judgment, past experience, and expected long-term future trends. The actuary should first develop a "best-estimate range", or the smallest expected range of actual outcomes, and then select a point within that range. Assumptions should be individually reasonable and in combination with others, and they should be consistent.

Inflation

Audit Findings:

We recommend 3.00%, which is lower than the chosen assumption of 3.75%. The impact is not significant, though, because LACERS limits retiree COLAs to 3.00%.

Comments:

Assumed inflation is the basis for assumed retiree Cost-of-Living Adjustments (COLAs). It is also a "building block" for the wage growth and investment return assumptions.

Inflation can be studied by reviewing historical increases in the Consumer Price Index, or CPI. Average CPI-W (Urban Wage Earners and Clerical Workers), 1955 to 2005, is shown below, for the U.S. and the Los Angeles area. We also show an average since 1955 excluding the exceptionally high inflationary decade 1975 to 1985:

Period	Years	CPI-W (US)	CPI-W (LA)
1995-2005	10	2.46%	2.70%
1985-2005	20	2.95	3.08
1975-2005	30	4.33	4.47
1965-2005	40	4.63	4.64
1955-2005	50	4.04	4.10
1955-2005, excluding 1975-1985	40	3.27	3.31

Also, the Office of the Chief Actuary of the Social Security Administration provided inflation forecasts for a 30-year period in the 2005 OASDI Trustees Report:

Scenario	CPI
Low Cost	1.80%
Intermediate Cost	2.80
High Cost	3.80

These scenarios imply that a reasonable range for inflation is 1.80% to 3.80%.

Recommendation:

Using a reasonable range of 1.80% to 3.80%, and the historical data above, we would recommend an inflation assumption of 3.00%.

Wage Growth

Audit Findings:

We recommend 4.00%, which is the same as the chosen assumption of 4.00%. (The difference in assumed inflation was offset by a difference in assumed real wage growth.)

Comments:

Assumed wage growth is needed to model year-to-year compensation increases. It includes productivity gains and inflation. Individual compensation increases above wage growth, also called "merit" increases, are included with other demographic assumptions.

National wage growth can be studied by reviewing increases in the historical Average Wage Index, or AWI, published by the Social Security Administration. The AWI, 1955 to 2005, is shown below. Real Wage Growth is the AWI less the CPI-W.

Period	Years	AWI	CPI-W (US)	Real Wage Growth
1995-2005	10	4.12%	2.46%	1.66%
1985-2005	20	4.02	2.95	1.07
1975-2005	30	4.99	4.33	0.66
1965-2005	40	5.33	4.63	0.70
1955-2005	50	4.97	4.04	0.93

Also, the Office of the Chief Actuary of the Social Security Administration provided real wage growth forecasts for a 30-year period in the 2005 OASDI Trustees Report:

Scenario	Real-Wage Differential
Low Cost	0.60%
Intermediate Cost	1.10
High Cost	1.60

These scenarios imply that a reasonable range for real wage growth is 0.60% to 1.60%.

Recommendation:

Using a reasonable range of 0.60% to 1.60%, and the historical data above, we would recommend a real wage growth assumption of 1.00%. Adding this to our 3.00% inflation assumption yields a total wage growth assumption of 4.00%.

Real Wage Growth		1.00%
Inflation	+	3.00%
Wage Growth		4.00%

Merit Salary Increases

Audit Findings:

We recommend increasing the merit increase rates. This is consistent with the retained actuary's recommendation, although our proposed rates are higher than theirs. However, the retained actuary's proposed assumptions are not unreasonable. We suggest that gains and losses due to salary increases continue to be closely monitored.

Comments:

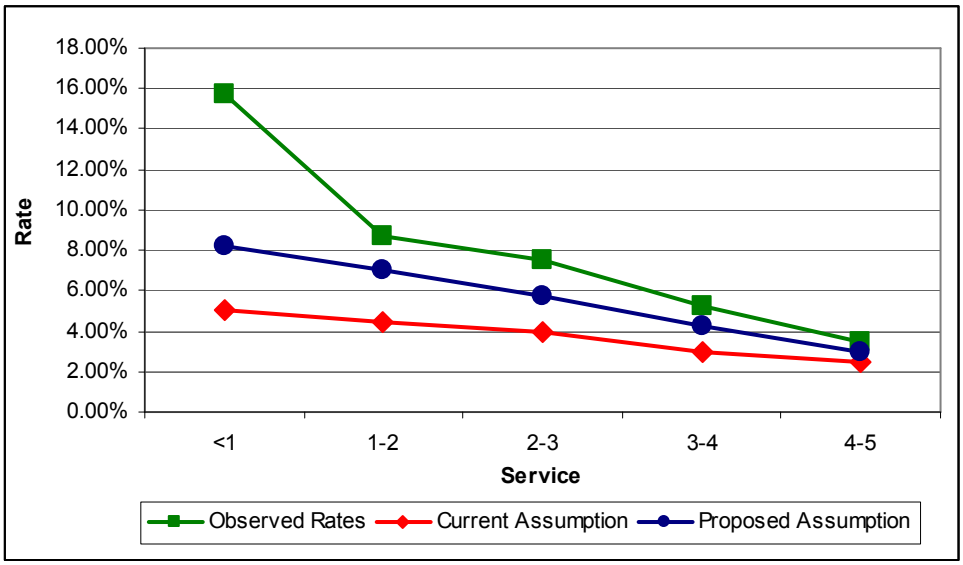
Merit salary increases are individual compensation increases above general wage growth. They include job promotion and longevity increases.

The merit increase assumption used in the June 30, 2004 Actuarial Valuation is a graded set of rates that vary by age and service. Service-based rates apply to members with less than five years, starting at 5.00% and decreasing gradually to 2.50% (assuming 4.00% general wage growth). Age-based rates apply to members with at least five years of service, which are 1.00% at all ages (assuming 4.00% general wage growth).

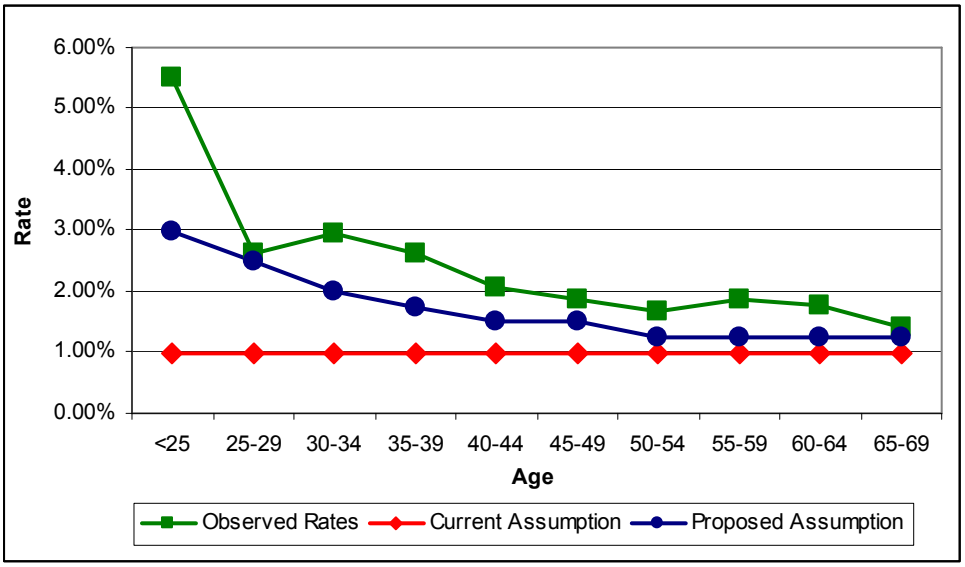
Actual merit increases during the study period were generally higher than assumed. Also, there were losses in the June 30, 2003 and June 30, 2004 Actuarial Valuations of $22M and $225M, respectively, due to salary increases higher than assumed. Therefore, we recommend increasing the merit increase rates. The basis of our proposed assumption is to move midway between the current rates and the observed rates, and then smoothing out those rates gradually. Despite recent losses and the significant difference between observed and current rates, we do not want to put too much weight on the three-year study period. The rates should be based on several study periods.

We recommend service-based rates for members with less than five years, starting at 8.25% and decreasing gradually to 3.00%. For age-based rates, we recommend starting at 3.00% at age 20 and decreasing gradually to 1.25% at age 50 and after.

The charts below compare observed increases to current and proposed assumptions:



We assumed that the increases for members with less than 1 year were extraordinarily high because of recently hired members with a partial year of pay. We did not attempt to determine annual rates of pay for these members, but instead set the assumption for their increases to be much lower than observed.



Recommendations:

We recommend increasing the merit increase rates.

Investment Return – Employer Assets

Audit Findings:

We recommend 8.0%, which is consistent with the chosen assumption of 8.0%.

Comments:

The investment return assumption reflects anticipated returns on the plan's current and future assets. It is also used to calculate the present value of projected benefit obligations.

A rate of return should represent an estimate of long-term future earnings. We have considered historical LACERS returns, historical market returns, and a "building block" approach which considers both historical market returns and expected future asset category returns in determining our interest rate recommendations.

Actual Plan Experience

During the 12 fiscal periods beginning with fiscal year 1994 and ending with fiscal year 2005, LACERS experienced an annual average investment earnings rate of 9.3%. The investment rates of return in the following table are based on beginning and end-of-year market values for all asset categories.

Fiscal Year Ending	Historical Investment Returns		
	Annual	Five-Year Average	Period Average
June 30, 2005	10.0%	4.8%	9.3%
June 30, 2004	18.6	5.0	9.3
June 30, 2003	4.5	3.9	8.3
June 30, 2002	(4.8)	5.1	8.7
June 30, 2001	(4.2)	9.9	10.4
June 30, 2000	11.1	14.1	12.5
June 30, 1999	12.8	14.8	12.8
June 30, 1998	10.5	12.8	12.8
June 30, 1997	19.2		13.3
June 30, 1996	16.7		11.4
June 30, 1995	14.9		8.7
June 30, 1994	2.5		2.5

Past experience is useful in determining the performance of the investment managers and to some degree the volatility of the entire portfolio. However, basing the investment return assumption on the experience of the last 12 years should not be the sole consideration in determining what future investments will yield.

Examination of Long-Term Historical Trends

The Pension Practice Council Practice Note, "Selecting and Documenting Investment Return Assumptions," from May, 2001, sets forth guidelines for establishing interest rate assumptions. The following approach follows those guidelines.

For purposes of this analysis we assume a 30-year investment time horizon. The final investment rate of return chosen should be viewed as an average rate of return reasonably expected to be achieved over this time horizon but not necessarily achieved over shorter periods of time. By observing the range of historical investment returns by asset category, a range of investment return assumptions can be determined and it is within this range that any final investment return assumption should fall. The range of investment returns determined using this methodology reflects target asset allocations by category, e.g., fixed income, equity, and cash. While this approach, like others that might be used, cannot precisely predict future investment results, we believe it is a reasonable consideration in setting the investment return assumption.

The source for the historical investment returns data provided below is *Stocks, Bonds, Bills and Inflation, 2000 Yearbook*, published by Ibbotson Associates. Historical investment returns by asset category for rolling 30-year periods were determined based on this source document (this data was augmented with returns for 2000 – 2005). The results were as follows:

Rates of Return	**Large Company Stocks**	**Long-Term Corporate Bonds**	**Long-Term Gov't Bonds**	**Interm.-Term Gov't Bonds**	**U.S. T-Bills**
Lowest	8.5%	1.8%	1.5%	2.2%	0.9%
25th Percentile	10.2	2.9	2.5	2.8	1.7
Median	10.8	3.8	3.2	4.0	4.3
75th Percentile	12.4	7.3	6.9	7.8	6.5
Highest	13.7	9.8	9.5	8.7	6.8
Avg.	11.2	5.1	4.7	5.2	4.1
Avg. over entire 79 year horizon	10.4	5.9	5.4	5.3	3.7

Number of periods in the above source data: 51.

We understand the June 30, 2005 target allocation was:

	Target Allocation
Unallocated Cash	1.0%
Real Estate	7.0
Alternative Investment	7.0
Core Fixed Income	27.0
US Equity	40.0
Non-US Equity	18.0
Total	100.0

Based on this target allocation, we assumed the following portfolio for determining the investment return assumption based on the Ibbotson historical data:

	Assumed Allocation
U.S. T-Bills	1.0%
Interm.-Term Government Bonds	14.0
Long-Term Government Bonds	0.0
Long-Term Corporate Bonds	27.0
Large Company Stocks	58.0
Total	100.0

In any given year, having a balanced investment policy will tend to temper the high and low investment returns. Applying the target allocation percentages above to each year of historical investment returns and then determining the rolling 30-year periods provides a good indicator of how this asset allocation would have performed over the years. Using this methodology creates a range of investment returns, as follows:

	Assumed Allocation Return
25th Percentile	8.1%
Median	8.7
75th Percentile	9.6
Average	9.0

The best-estimate return range is 8.1% to 9.6%.

The investment return is determined net of administrative and investment expenses. Over the three fiscal years ending June 30, 2005, plan expenses have been as follows:

(in $millions)

Period Ending	Investment Expense	Admin Expense	Total Expense	Average Assets	Return Reduction
6/30/05	$18	$11	$29	$7,642	0.38%
6/30/04	20	11	31	6,586	0.47
6/30/03	17	9	26	6,580	0.40
				Average	0.42%

With estimated expenses equal to approximately .4%, the best-estimate range net of expenses is to 7.7% to 9.2%.

The Building Block Analysis

Following is the derivation of an investment return assumption based on a "building block" analysis. Please see Appendix A for further information regarding the methodology employed in this analysis.

Asset Category		Expected Return
Future Inflation Assumption	3.0%	
Risk-free Premium	0.7%	
Cash Equivalent		3.7%
Risk Premium – Intermediate/Long-Term Government Bonds	1.8%	
Intermediate/Long-Term Government Bonds		5.5%
Risk Premium – Corporate Bonds	0.5%	
Long-Term Corporate Bonds		6.0%
Risk Premium – Large-Cap Equities	4.3%	
Large-Cap Equities		10.3%

Applying the assumed asset allocation percentages noted earlier to the asset category expected returns above, yields a total investment return rate of 8.4% *[(1%)(3.7%) + (14%)(5.5%) + (27%)(6.0%) + (58%)(10.3%].* After deducting .4% for assumed expenses, the result is a net investment return rate of 8.0%.

A consideration in adopting any final interest rate assumption is that future expectations with respect to risk premium levels for equity investments will vary among investment consultants. If the risk premium for large cap equities were 3.5% and alternatively 5.0%, the total net investment return rate would range from 7.5% to 8.4%. Any interest rate adopted by the Board within this range we believe would be reasonable.

Most interest rates selected from the range 7.5% to 8.4% will also fall within the best-estimate range of 7.7% to 9.2% based on historical returns (developed above).

Recommendation:

The considerations discussed in this section have shown a wide range of possible investment return assumptions. However, we have given considerable weight to the building block analysis. Based on the June 30, 2005 assumed asset allocation for the fund, the building block analysis develops a reasonable range of 7.5% to 8.4%. While the actual returns experienced by the plans have recently been higher, we do not feel that these rates of return are sustainable in the long term.

Based on the above analysis, we recommend an investment return assumption of 8.0%.

Investment Return – Member Accounts

Audit Findings:

We recommend 5.5%, which is considerably lower than the chosen assumption of 6.5%. We presume the impact is minor because it only affects those members who take a refund of employee contributions at termination, but the retained actuary should review.

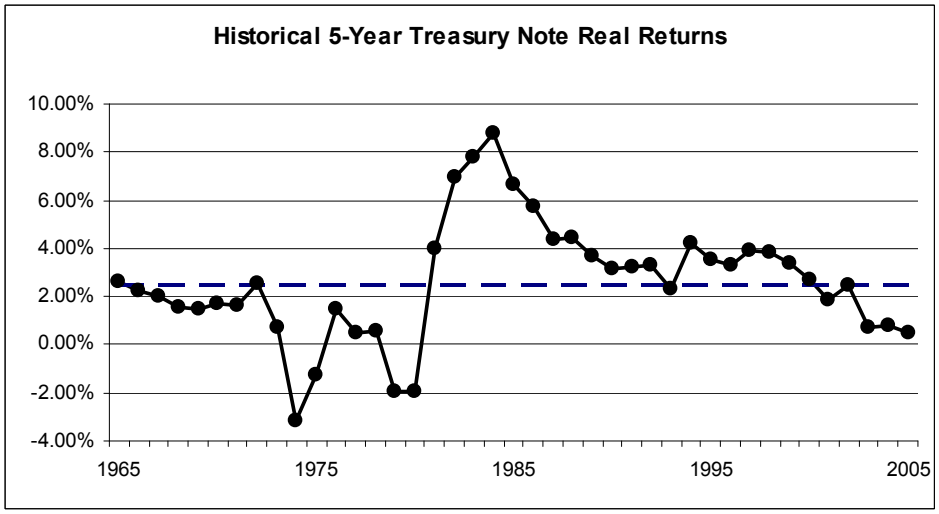
Comments:

A separate return assumption is needed to project member accounts. We understand that the crediting rate is based on average rates of five-year U.S. Treasury Notes.

Under the Building Block approach discussed above, an expected return for a five-year U.S. Treasury Note would be about 5.5% as follows:

Asset Category		Expected Return
Future Inflation Assumption	3.0%	
Risk-free Premium	0.7%	
Cash Equivalent		3.7%
Risk Premium – Intermediate/Long-Term Government Bonds	1.8%	
Intermediate/Long-Term Government Bonds		5.5%

The 2.5% real return (5.5% minus 3.0% inflation) is compared to historical returns below:



The 2.5% real return is comparable to historical rates. Adding 3.0% assumed inflation yields a 5.5% assumed return.

Recommendations:

Based on the above analysis, we recommend an investment return assumption of 5.5% to represent investment returns in the member accounts.

Health Trend

Audit Findings:

We recommend lowering the initial trend to give the actual LACERS short-term trend experience more weight. The grading period to the ultimate trend, which is seven years, and ultimate trend of 5% are reasonable and consistent with other retiree medical plans.

Comments:

The health care trend rate reflects the change in per capita health subsidy over time. The trend rate is affected by the following interdependent factors;

- General economic inflation,
- Covered charges,
- Utilization of services,
- Leveraging caused by plan design features,
- Aging,
- Participation.

These factors affect the fully insured premium rates charged by the vendors to LACERS.

Every year Segal publishes a set of healthcare trend assumptions based on the latest research and information available to its health actuaries. The healthcare trend assumptions take into account factors such as: recent and expected premium increases affecting vendor policyholders, expected changes in utilization of healthcare, cost shifting from Medicare, and other measures taken by the Board to control costs. Health care trend measures the anticipated overall rate at which health plan costs are expected to increase in future years. Trend rates are used to increase the current stated subsidies into the future, year after year until retirement.

The following table shows the detailed healthcare trend assumptions used for the June 30, 2005 and 2006 actuarial valuations. The assumptions used for the 2006 valuation are intended to predict a somewhat higher level of health inflation over the short term and hence a higher ultimate cost.

Health Care Cost Subsidy Trend Rates for June 30, 2005 Valuation						
Increase to Plan Year	Medical Trend				Dental Trend	Medicare Part B
	Pre-65		Post-65			
	PPO	HMO	PPO	HMO		
2006-2007	13%	12%	12%	12%	5%	15.0% (Actual)
2007-2008	12%	11%	11%	11%	5%	5%
2008-2009	11%	10%	10%	10%	5%	5%
2009-2010	10%	9%	9%	9%	5%	5%
2010-2011	9%	8%	8%	8%	5%	5%
2011-2012	8%	7%	7%	7%	5%	5%
2012-2013	7%	6%	6%	6%	5%	5%
2013-2014	6%	5%	5%	5%	5%	5%
2014 & later	5%	5%	5%	5%	5%	5%

Health Care Cost Subsidy Trend Rates for June 30, 2006 Valuation						
Increase to Plan Year	Medical Trend				Dental Trend	Medicare Part B
	Pre-65		Post-65			
	PPO	HMO	PPO	HMO		
2007-2008	12%	12%	12%	12%	5%	5.6% (Actual)
2008-2009	11%	11%	11%	11%	5%	5%
2009-2010	10%	10%	10%	10%	5%	5%
2010-2011	9%	9%	9%	9%	5%	5%
2011-2012	8%	8%	8%	8%	5%	5%
2012-2013	7%	7%	7%	7%	5%	5%
2013-2014	6%	6%	6%	6%	5%	5%
2014 & later	5%	5%	5%	5%	5%	5%

Based on Deloitte's experience working with clients sponsoring postretirement benefit plans, these plans are generally experiencing trend rates less than 10% for medical and prescription drugs combined. Postretirement medical valuations typically use an initial trend assumption that is intended to reflect the current short-term trend experience of the group to the extent it is credible. This initial trend assumption may be lower than the current trend being experienced because of age grading that is usually built into the per capita costs. The initial rates will usually be graded down over a period of 5 or more years to an ultimate rate of 4% to 6%. The ultimate rate is determined by economic considerations since health care spending cannot increase at current rates indefinitely. Otherwise it will eventually consume the entire Gross Domestic Product.

Based on the Deloitte Consulting Human Capital Advisory Services 2006 Survey of Economic Assumptions Used for SFAS No. 87 and SFAS No. 106 Purposes, 71% of companies surveyed disclosed an initial health cost trend assumption of between 9.00% and 10.00%. In this survey, the average initial trend rate disclosed was 9.42%, and the average ultimate health care trend rate was roughly 5.00%. Survey results for 2007 are expected to show slightly lower trends because of continuing market pressures.

In the Segal Company's ninth annual survey of managed care organizations, health insurers, pharmacy benefit managers, and third party administrators, entitled the 2006 Segal Health Plan Survey, short-term trends for PPOs and HMOs covering actives and retirees under age 65 are expected to be around 12%. For Medicare Supplemental Indemnity Plans and Medicare Advantage Plans, trends are expected to be 11.2% and 10.7%, respectively. For dental plans, trends are expected to be 6.3% for dental PPOs and 5.2% for dental HMOs.

In setting trend assumptions for postretirement medical plans under GASB 43/45, however, it is important that they be based on expected experience that takes into account past experience, to the extent it is credible, and appropriate modifications expected for the future. In the case of LACERS health program, we would expect the trend experience to be 100% credible.

We have reviewed the historical trend experience for LACERS postretirement medical plans. The following table shows historical trend rates during the period 2002 through 2006 based on subsidy rates per retiree for all plans combined.

Medical Trend	2002	2003	2004	2005	2006	Overall
All Plans	20.9%	18.8%	19.9%	-4.7%	-9.6%	8.2%

It would appear that the trend assumptions being used on a short-term basis for the LACERS postretirement medical valuation may be on the conservative side when compared to recent experience.

Recommendations:

We recommend that the actual LACERS short-term trend experience be given more weight in selecting the initial trend assumption rather than survey results of what other postretirement medical plans are using for their trend assumptions. For a plan as credible as LACERS, its own past experience with appropriate modifications based on future expectation should be the most important criteria used in determining reasonable trend assumptions over the short term. The grading period to the ultimate trend, which is seven years, and the ultimate trend of 5% are reasonable and consistent with other postretirement medical plans. The following table would be consistent with the LACERS short-term trend experience and a reasonable grading period and ultimate trend rate.

Recommended Health Care Cost Subsidy Trend Rates for June 30, 2006 Valuation						
Increase to Plan Year	Medical Trend				Dental Trend	Medicare Part B
	Pre-65		Post-65			
	PPO	HMO	PPO	HMO		
2007-2008	9.0%	9.0%	9.0%	9.0%	5%	5.6% (Actual)
2008-2009	8.5%	8.5%	8.5%	8.5%	5%	5%
2009-2010	8.0%	8.0%	8.0%	8.0%	5%	5%
2010-2011	7.5%	7.5%	7.5%	7.5%	5%	5%
2011-2012	7.0%	7.0%	7.0%	7.0%	5%	5%
2012-2013	6.5%	6.5%	6.5%	6.5%	5%	5%
2013-2014	6.0%	6.0%	6.0%	6.0%	5%	5%
2014-2015	5.5%	5.5%	5.5%	5.5%	5%	5%
2015 & later	5.0%	5.0%	5.0%	5.0%	5%	5%

Per Capita Costs

Audit Findings:

In our opinion, the per capita cost assumptions being used by Segal are reasonable since they are consistent with the actual subsidies described in ***Your 2006/2007 Health Benefits Guide***. As was noted earlier in this report, however, our detailed review of sample lives would indicate that Segal may need to make some changes to the programming methodology. We recommend that the retained actuary clarify the per capita cost assumption in the valuation report by showing tables of what the subsidies are by plan and by years of service and how the two years are blended.

Comments:

The medical subsidy for members, which represents the cost paid by LACERS, is calculated as follows:

1) Under age 65 or over age 65 and only enrolled in Medicare Part B
    a) The System will pay 4% of the maximum medical subsidy ($928 per month as of July 1, 2006) for each year of Service Credit up to 100%.
2) Over age 65 and enrolled in both Medicare A and B
    a) Maximum medical subsidy limited to single-party monthly premium of the plan in which member is enrolled, subject to the following vesting:
        i) 10 – 14 years of service: 75%
        ii) 15 – 19 years of service: 90%
        iii) 20+ years of service: 100%
    b) An additional amount is added for coverage of dependents which shall not exceed the amount provided for the dependent of a retiree not enrolled in Parts A and B and covered by the same medical plan and with the same years of service.
    c) The combined member and dependent subsidy shall not exceed the actual premium.

The dental subsidy for members is calculated as 4% of the maximum dental subsidy ($34.84 per month as of July 1, 2006) for each year of Service Credit up to 100%. There is no subsidy for dependents.

The Medicare Part B reimbursement for members is calculated as the basic Part B Medicare premium and is only available if the retiree is covered by Medicare Parts A and B and is enrolled in a LACERS medical plan.

The surviving spouse subsidy is calculated as follows:

1) Under age 65 or over age 65 and only enrolled in Medicare Part B
   a) The maximum medical subsidy available for survivors is the Kaiser single-party premium ($439.45 per month as of July 1, 2006) or the single-party premium of the plan in which the survivor is enrolled, whichever is less.

2) Over age 65 and enrolled in both Medicare A and B
   a) For survivors, a maximum medical subsidy limited to the single-party monthly premium of the plan in which the survivor is enrolled is provided subject to the vesting schedule in (2)(a) above.

The available medical and dental plans being offered to members are fully insured, and the premium rates being charged for 2006 are shown in the table below.

2006 Monthly Medical Premiums

Medicare Eligibility	**Blue Cross All**	**Kaiser CA**	**SCAN/BC HMO CA**	**Secure Horizons CA**	**Secure Horizons AZ**	**Secure Horizons NV**
Retirees Not on Medicare	$650.43	$439.45	$443.90	$443.90	$443.90	$443.90
Retirees and Dependent Not on Medicare	$1,295.69	$877.30	$882.63	$882.63	$882.63	$882.63
Retirees with Medicare Parts A & B	$320.01	$161.01	$202.14	$162.19	$172.02	$107.42
Retirees and Dependent both with Medicare Parts A & B	$619.26	$320.42	$399.11	$320.81	$340.47	$211.27
Retiree with Medicare Parts A & B and Dependent Not on Medicare	$965.27	$598.86	$640.87	$600.92		
Retiree without Medicare and Dependent with Medicare Parts A & B	$949.68	$598.86	$909.84	$869.89		

2006 Monthly Dental Premiums

	Retiree Only	**Retiree & Dependent**	**Retiree & Family**
Wellpoint/Blue Cross PPO	$34.84	$69.07	$99.79
SafeGuard Prepaid Dental	$13.68	$25.45	$29.55

The actuarial valuation projects the stream of future subsidies for current retirees and active members when they retire. Segal uses the actual premium rates during the July 1, 2006 through June 30, 2007 plan year (50/50 blend of 2006 and 2007 premiums) for each plan to develop subsidies based on the member's enrollment in Medicare (Parts A and B or Part B only) or non-Medicare eligibility and service at retirement. The formula used for calculating the subsidy can be found in ***Your 2006/2007 Health Benefits Guide***. The premium subsidies used in the actuarial valuation are adjusted for future years using the trend rates to reflect the higher level of premiums payable for each plan.

The following table was used for the June 30, 2006 actuarial valuation for calendar year 2006. This table shows the observed utilization and participation rates based on the June 30, 2006 membership data. Even though this table shows maximum subsidies, the

valuation is performed using the actual subsidy for each participant based on the average subsidies in effect for the second half of calendar year 2006 and the first half of calendar year 2007. For retirees, this subsidy is calculated using the actual premiums during the plan year July 1, 2006 through June 30, 2007 for the plan elected and the formulas described in ***Your 2006/2007 Health Benefits Guide.*** For actives, this subsidy should be calculated at each projected retirement date using the formulas described in this ***Guide*** and current average 2006 and 2007 calendar year premium rates trended to retirement, projected service at retirement, the proportion of members assumed to be enrolled in each available medical plan, and the percentage of retirees, spouses and beneficiaries electing health coverage.

Plan	Observed Participation*	Single Maximum Subsidy	Married Maximum Subsidy	Surviving Spouse Maximum Subsidy	Observed Utilization**		Proposed Utilization
					All Retirees	≥ 10 Yrs Svc	≥ 10 Yrs of Svc
Pre-65 & Over 65 With Medicare Part B only							
PPO	0.234	$650.43	$928.00	$439.45	0.810	0.870	0.900
Kaiser	0.586	$439.45	$877.30	$439.45	0.810	0.870	0.900
Blue Cross HMO/SH	0.180	$443.90	$882.63	$439.45	0.810	0.870	0.900
Dental	1.000	$34.84	$34.84	$0.00	0.760	0.840	0.900
Over 65 With Medicare Parts A and B							
PPO	0.328	$320.01	$597.58	$320.01	0.810	0.870	0.900
Kaiser	0.568	$161.01	$320.42	$161.01	0.810	0.870	0.900
Blue Cross HMO/SH	0.104	$202.14	$399.11	$202.14	0.810	0.870	0.900
Dental	1.000	$34.84	$34.84	$0.00	0.830	0.870	0.900
Medicare Part B	1.000	$88.50	$88.50	$0.00	0.740	0.780	0.900
* Participation ratio is the proportion of retirees electing to receive a subsidy that select that specific plan.							
** Utilization ratio is the proportion of all retirees that elect to receive a subsidy.							

No age adjustment factors are used for the subsidies; instead, the premium costs are constant for all ages <65 and for all ages 65+. This methodology is being used instead of age grading the premium rates. It makes the subsidy calculation easier to perform and to audit since the actual premium rates being charged are used in the calculation. Such an approach is acceptable, especially since the premium rates are fully insured. However, the age-grading normally built into per capita costs must now be accounted for through the trend rate assumption.

As part of our review of the per capita cost assumptions, we received copies of the 2006 renewal exhibits provided by each carrier so that we could determine what funding arrangements are being used and what methodology is being used to calculate premium rates. We determined that the pre-65 premium rates for Blue Cross and Kaiser are experience rated and are based on the LACERS pre-65 retiree claim or "equivalent claims" experience in the case of Kaiser. The post-65 premium rates are either experience rated or community rated depending on the size of the group covered and are indicative of post-65 retiree experience.

Kaiser Permanente is not a "claims based" organization and processes a relatively small number of claims. Kaiser Permanente owns and operates its own hospitals and provides

virtually all medical services to members exclusively through the Permanente Medical Group in Northern California and the Southern California Permanente Medical Group. Claims are generally only filed when a member receives emergency medical services outside of the plan or when a specialist referral outside the plan is necessary. Instead of claims, Kaiser bases its premium rates on "equivalent claims" generated by fee schedules, which are designed to cover its costs and to produce prices that make sense in the marketplace. In creating the fee schedules, Kaiser established relative values that reflect the different resource requirements for each service. Kaiser benchmarked Medicare and competitor fee schedules to help in establishing the relative values, which were then applied to its revenue needs to determine actual prices. Although the fees are, by necessity, somewhat related to its costs, its budget-based financial models do not require a direct relationship as long as the overall revenue meets its overall financial targets. Kaiser uses external benchmarks rather than internal costs for individual services in its fee schedule development, but attempts to ensure that the sum of these individual fees add up to its total revenue needs. In addition:

- Kaiser uses the same approach for all of its large group purchasers.
- The fee schedule that it uses to price encounters is the same fee schedule that is used to determine member cost shares.
- For inpatient services, the fee schedule is based on DRG, with adjustment for length of stay.
- For outpatient services, the fee schedule varies based on the service performed and, in some instances, based on the setting in which the care is delivered.

In conclusion, Kaiser's pre-65 premium rates are indicative of pre-65 retiree experience even though actual claims data is not used in their development.

In our opinion, the per capita cost assumptions being used by Segal are reasonable since they are consistent with the actual subsidies described in ***Your 2006/2007 Health Benefits Guide***, subject, however, to the qualifications described earlier based on our detailed review of sample lives.

In the census data used for the June 30, 2006 valuation that Deloitte was provided, the 2006 medical premium, medical subsidy paid by plan, dental subsidy paid by plan, and Medicare Part B premium paid by plan are included as fields in the file for non-disabled retirees, disabled retirees and beneficiaries. In order to determine if the medical subsidies have been correctly calculated in the actuarial valuation, Deloitte compared the medical subsidies found in the valuation data with the subsidies provided in ***Your 2006/2007 Health Benefits Guide*** after correcting the ***Guide*** for the revised 2006 Kaiser premiums. Deloitte performed this review for the largest subset of the retiree population consisting only of the non-disabled retirees. Our review indicated that the medical subsidies for non-disabled retirees correspond to the subsidy amounts shown on pages 26 to 29 of the ***Guide***.

<u>Recommendations:</u>

In our opinion, the per capita cost assumption is presented in the Segal report in a confusing manner because it is described in terms of single and married maximum subsides. Deloitte recommends that Segal describe this assumption by showing tables of what the subsidies are by plan and by years of service.

IV. AUDIT OF THE EXPERIENCE STUDY AS OF JUNE 30, 2005

B. REVIEW OF DEMOGRAPHIC ASSUMPTIONS

Actuarial Standard of Practice No. 35, *Selection of Demographic and other Noneconomic Assumptions for Measuring Pension Obligations*, provides guidance to actuaries in selecting demographic and other assumptions not covered by ASOP No. 27.

The selection process is similar to ASOP No. 27. Demographic assumptions should be based on a combination of the actuary's professional judgment, past experience, and expected long-term future trends. The actuary should first determine the "assumption universe", which includes all possible assumptions that the actuary might reasonably use, and then select an assumption from that group. Assumptions should be individually reasonable and in combination with others, and they should be consistent.

Assumptions are "reasonable" if they appropriately model the events that give rise to benefits (or result in loss of benefits) and they are not expected to produce significant gains or losses over time.

Our recommended assumptions appear in more detail in Appendix B.

Mortality

Audit Findings:

We recommend adopting recently published mortality tables that include recognition of projected future mortality improvement. This is more conservative than the retained actuary's recommendation. We suggest that the retained actuary review the impact of recognizing future mortality improvement with LACERS.

Comments:

For healthy retirees, the mortality assumption in the June 30, 2004 Actuarial Valuation is the 1994 Uninsured Pensioner Mortality Table for Males, set back 3 years for females.

Actual mortality during the study period was generally lower than assumed. Therefore, we recommend adopting a mortality table that reflects recent mortality improvement (lower mortality rates). Furthermore, we suggest recognizing expected future mortality improvement.

We recommend adopting the RP-2000 Combined Healthy Mortality tables (without collar adjustment) for males and females with generational mortality improvement projected using Scale AA.

It is a commonly held opinion in the actuarial community that mortality rates will continue to improve as they have over the last few decades. Given this assumption, the current methodology of not using generational improvements builds in an expected loss because the mortality table is expected to be changed every three years to a more conservative table. By including generation improvements, there may be gains or losses every three years when the experience is reviewed and changes are made, but there is not an expectation that the change will consistently be a loss.

Including the expected mortality improvements now more appropriately assigns the cost of the benefits earned to the population that earns them. Without using this methodology, there could be some degree of unwanted generational cost-shifting.

The following table compares actual deaths to expected deaths for healthy retirees during the three-year study period based on the current and new assumptions. We also show the "experience ratio", which is the ratio of actual to expected deaths. That ratio indicates how well the current and proposed assumptions predict actual plan experience.

Plan Year Ending 6/30	Actual Deaths	Expected Deaths	Actual/ Expected Ratio	Expected Deaths Using New Table	Revised Actual/ Expected Ratio
2003	383	406	94%	388	99%
2004	370	397	93%	377	98%
2005	372	409	91%	385	97%
Total	1,125	1,212	93%	1,150	98%

The mortality assumption is often set to produce an experience ratio close to 100% if generational mortality improvement is reflected. The proposed assumptions improved the experience ratio from 93% to 98%. With generational mortality improvement, the intention is that the experience ratio will remain close to 100% in each future year, even as mortality improves.

For disabled members, there is not enough credible data. Using judgment we recommend an 8-year age setforward to the tables used for healthy retirees.

For active members, we recommend the same mortality as used for healthy retirees.

For beneficiaries, we recommend the same mortality as used for healthy retirees.

Recommendations:

We recommend the RP-2000 Combined Healthy Mortality tables (without collar adjustment) for males and females with generational mortality improvement projected using Scale AA.

Withdrawal

Audit Findings:

We recommend lowering the withdrawal rates. This is consistent with the retained actuary's recommendation, although our proposed rates are slightly lower than theirs. However, the retained actuary's proposed assumptions are not unreasonable.

Comments:

The withdrawal assumption used in the June 30, 2004 Actuarial Valuation is a graded set of rates that vary by age and service. Service-based rates apply to members with less than five years, starting at 8.25% and decreasing gradually to 6.25%. Age-based rates apply to members with at least five years of service, starting at 6.25% at age 20 and decreasing gradually to 1.00% at age 64.

Actual withdrawal during the study period was generally lower than assumed. Therefore, we recommend lowering most of the withdrawal rates. The basis of our proposed assumption is to move midway between the current rates and the observed rates, and then smoothing out those rates gradually.

We recommend service-based rates for members with less than five years, starting at 8.75% and decreasing gradually to 4.50%. For age-based rates, we recommend starting at 4.25% at age 20 and decreasing gradually to 1.25% at age 64. Most, but not all, proposed rates are lower than the June 30, 2004 assumption.

The following table compares actual withdrawals to expected withdrawals during the three-year study period based on the current and new assumptions. We also show the "experience ratio", which is the ratio of actual to expected withdrawals. That ratio indicates how well the current and proposed assumptions predict actual plan experience.

Actual Withdrawals	Expected Withdrawals	Actual/ Expected Ratio	Expected Withdrawals Using New Table	Revised Actual/ Expected Ratio
2,432	2,944	83%	2,587	94%

The withdrawal assumption is often set to produce an experience ratio slightly over 100%. In that case, the actuary is slightly underestimating the number of withdrawals to be conservative. The proposed assumptions improved the experience ratio from 83% to 94%. By proposing rates that are between the observed rates and the current assumption, we intend to approximate a 100% experience ratio over the time period that includes the years analyzed in the previous experience studies.

Recommendations:

We recommend lowering the withdrawal rates.

Retirement

Audit Findings:

For active members, we recommend increasing the retirement rates for ages 50-54, and lowering the rates for ages 55-69. This is consistent with the retained actuary's recommendation, although our proposed rates are slightly different. However, the retained actuary's proposed assumptions are not unreasonable.

For vested terminated members, we agree with the retained actuary's recommendation to lower their assumed retirement age to 58.

Comments:

For active members, the retirement assumption used in the June 30, 2004 Actuarial Valuation is a graded set of rates that vary by age, starting at 1% to 2% between age 50 to 54, increasing from 9% to 23% from age 55 to 69, and reaching 100% at age 70.

Actual retirement during the study period was higher than assumed for ages 50-54, so we recommend increasing those rates. Actual retirement was lower than assumed for ages 55-69, so we recommend lowering those rates. The basis of our proposed assumption is to move midway between the current rates and the observed rates.

We recommend a graded set of rates that vary by age, starting at 5% to 10% between ages 50 to 54, increasing from 10% to 20% from age 55 to 69, and reaching 100% at age 70. We reviewed the impact of service on retirement, such as retirement with 30 years, and it does not seem to have a significant impact.

The following table compares actual retirements to expected retirements during the three-year study period based on the current and new assumptions. (This comparison excludes retirements age 70 and older.)

Ages	Actual Retirements	Expected Retirements	Actual/ Expected Ratio	Expected Retirements Using New Table	Revised Actual/ Expected Ratio
50-54	259	21	1,233%	161	161%
55-69	1,172	1,472	80%	1,327	88%
Total	1,431	1,493	96%	1,488	96%

The retirement assumption is often set to produce an experience ratio slightly under 100%. In that case, the actuary is slightly overestimating the number of retirements to be conservative. The proposed assumptions produce an overall experience ratio similar to the current ratio, but the ratios for ages 50-54 and 55-69 are significantly improved.

For vested terminated members, the assumed retirement age is 60 in the June 30, 2004 Actuarial Valuation. During the study period there were 154 retirements from vested terminated status with an average retirement age of 57. Therefore, we recommend lowering their assumed retirement age to 58.

Recommendations:

We recommend increasing the retirement rates for ages 50-54, lowering the rates for ages 55-69, and lowering the assumed retirement age for vested terminated members.

Disability

Audit Findings:

We recommend increasing the disability rates. This is consistent with the retained actuary's recommendation, although our proposed rates are slightly lower than theirs. However, the retained actuary's proposed assumptions are not unreasonable.

Comments:

The disability assumption used in the June 30, 2004 Actuarial Valuation is a graded set of rates that vary by age, starting at 0.01% at age 25 and increasing gradually to 0.24% at age 59.

Actual disability during the study period was generally higher than assumed. Therefore, we recommend increasing the disability rates. The basis of our proposed assumption is to move midway between the current rates and the observed rates, and then smoothing out those rates gradually.

We recommend a graded set of rates that vary by age, starting at 0.03% at age 25 and increasing gradually to 0.24% at age 59.

The following table compares actual disabilities to expected disabilities during the three-year study period based on the current and new assumptions.

Actual Disabilities	Expected Disabilities	Actual/ Expected Ratio	Expected Disabilities Using New Table	Revised Actual/ Expected Ratio
94	72	130%	79	118%

The disability assumption is often set to produce an experience ratio slightly under 100%. In that case, the actuary is slightly overestimating the number of disabilities to be conservative. The proposed assumptions improved the experience ratio from 130% to 118%.

Recommendations:

We recommend increasing the disability rates.

Service Accrual

Audit Findings:

We agree with the retained actuary's recommendation.

Comments:

The service accrual assumption used in the June 30, 2004 Actuarial Valuation is that all members earn a full year of service each year.

The following table shows average service accruals during the three-year study period.

Plan Year Ending	Average Service Accrual
6/30/03	0.97
6/30/04	0.95
6/30/05	0.95
Total	0.96

We recommend assuming that all members earn a full year of service each year, since the average over the last three years was fairly close to one.

Recommendations:

We recommend retaining the assumption that all members earn a full year of service each year.

Reciprocity

Audit Findings:

We agree with the retained actuary's recommendation that some members should be assumed to earn reciprocal service for LACERS after termination. The retained actuary has assumed 10% earn reciprocal service. This seems a reasonable starting point, and we recommend that this assumption be monitored with LACERS over time.

Comments:

The assumption used in the June 30, 2004 Actuarial Valuation is that no terminated vested members will earn reciprocal service for LACERS after termination.

We feel that it is reasonable to assume that some members will earn reciprocal service, but we are unable to determine an estimate of the proportion with the data available.

Recommendations:

We recommend adopting an assumption that some members earn reciprocal service after termination.

Withdrawal of Member Account at Termination

Audit Findings:

We understand that 100% of non-vested members are assumed to withdraw their account at termination. We think it is reasonable to also assume that some percentage of vested members will withdraw their member account at termination, forfeiting their city-provided benefit. However, we cannot determine the appropriate percentage based on the data provided. In some public plans the percentage can be 25% or more. The retained actuary should monitor the incidence of vested participants taking a refund of contributions at termination.

Probability of Spouse or Domestic Partner

Audit Findings:

It is assumed that 76% of males and 50% of females are married or have a domestic partner. We did not have data to verify this assumption, but it does not seem generally unreasonable.

V. CONCLUSIONS

Conclusions

Based on the census data, actuarial reports, sample lives, and plan documents we received, the actuarial work seems to generally be prepared correctly and in a manner consistent with accepted actuarial practice, and the results seem reasonable. In our review we did not discover any issues that rise to the level of serious concern. We have provided some suggestions that the actuary may consider and review with LACERS that may improve the actuarial estimates and increase the value and understanding of the work.

Possible Other Areas for Review

The following are possible other areas to review which may improve the actuarial services and overall System performance:

- Independently review the changes made to the retiree medical programming for the June 30, 2007 valuation
- Independently replicate the actuarial valuation
- Independently review the financial impact of proposed changes to LACERS
- Independently review funding or contribution projections
- Audit the census data
- Audit the fees charged by service providers to the System
- Review the administrative procedures, such as benefit determinations
- Monitor GASB activity for possible changes to reporting requirements (i.e., convergence with other accounting standards like FASB)

Please tell us if you would like assistance with these or other areas.

APPENDIX A – DEVELOPMENT OF INTEREST RATE ASSUMPTION

The approach we employ to establish a specific interest rate assumption is generally referred to as the "building block" approach. This approach considers the following factors in "building" an investment return assumption for each asset category under consideration. The investment returns developed for each asset category are then weighted by the relative allocation targets for the Pension Fund as established by its investment policies.

1) Specific components of return based on current expectations for each asset category, i.e., inflation, risk-free rate of return, and risk premium,

2) Adjustments for expenses charged against investment return,

3) Adjustments, if needed, for future expectation regarding inflation, risk-free rates of return, and risk premiums,

4) Adjustments, if needed, for historical plan investment performance, and

5) Adjustments, if needed, to reflect increased liquidity needs, e.g., plan benefit outflows increasing relative to contribution and investment income.

The inflation assumption component of investment return that we are assuming is 3.0%. This is close to the average historic rate of inflation in the U.S. since 1926 of 3.1%.

The risk-free rate of return component, as measured by the difference between average U.S. Treasury Bill rates (3.8%) and the average historic rate of inflation (3.1%), is assumed to be .7%.

The risk premiums for holding longer term U.S. Treasury obligations, i.e., intermediate and long-term Government Bonds we have assumed to be 1.8%. The historic difference between average U.S. T-Bill rates of return and returns in intermediate/long-term Government Bonds (after removing the impact on total returns due to changing levels of Government Bond yields) has been about 1.6% since 1926 and about 2.3% since 1985.

The risk premium (default premium) for holding long-term corporate bonds we have assumed to be 0.5%, which is close to the difference between long-term corporate bonds and long-term government securities total return rates since 1926.

We are assuming a risk premium of 4.3% for holding large cap equities. The 4.3% risk premium compares to an approximate 4.5% difference in total annual returns between large-cap equities and long-term corporate bonds since 1926. Opinions regarding the risk premium for large-cap equities will vary among investment consultants. Since this assumption has a significant impact on the total investment return assumption our analysis also derives a range of investment return rates assuming the equity risk premium varies from a low of 3.5% to a high of 5.0%.

An adjustment in the interest rate is required for investment expenses, since the valuation interest rate is assumed to be net of investment expense. This expense adjustment is assumed to be .40%.

We have not made any adjustments in the recommended interest rate assumption to reflect possible future needs to adjust asset category allocation targets resulting from increasing liquidity requirements to meet potential expanding differences between income and expenditures. We do, however, recommend that this matter be carefully

studied in the near future to determine whether any changes in asset allocation targets/ranges are required.

APPENDIX B – SUMMARY OF RECOMMENDED ASSUMPTIONS

Assumption	6/30/04	Segal 6/30/05	Deloitte Audit
Inflation	4.00%	3.75%	3.00%
Wage Growth	4.00%	4.00%	4.00%
Investment Return			
Employer Assets	8.00%	8.00%	8.00%
Member Accounts	6.50%	6.50%	5.50%
Mortality			
Healthy Members	1994 Uninsured Pensioner Mortality for males, setback 3 years for females	1994 Group Annuity Mortality for males and females	RP-2000 Combined Healthy Mortality for males and females, with generational mortality projected with Scale AA
Disabled Members	1981 Disabled Mortality (General), setback 5 years for females	Same as Healthy Members, set forward 8 years	Same as Healthy Members, set forward 8 years
Beneficiaries	Same as Healthy Members	Same as Healthy Members	Same as Healthy Members
Withdrawal			
Service-based rates (less than 5 years)	Years	Years	Years
	< 1: 8.25%	< 1: 8.75%	< 1: 8.75%
	1-2: 7.25%	1-2: 7.00%	1-2: 6.75%
	2-3: 6.75%	2-3: 5.75%	2-3: 5.75%
	3-4: 6.50%	3-4: 5.25%	3-4: 5.00%
	4-5: 6.25%	4-5: 4.75%	4-5: 4.50%
Withdrawal			
Age-based rates (at least 5 years)	Age	Age	Age
	25: 5.75%	25: 4.45%	25: 4.25%
	30: 5.25%	30: 3.80%	30: 3.75%
	35: 3.75%	35: 3.05%	35: 3.25%
	40: 2.75%	40: 2.45%	40: 2.50%
	45: 2.25%	45: 2.10%	45: 2.00%
	50: 1.70%	50: 1.70%	50: 1.25%
	55: 1.45%	55: 1.35%	55: 1.25%
	60: 1.20%	60: 0.00%	60: 1.25%

Assumption	6/30/04		Segal 6/30/05		Deloitte Audit	
Retirement	Age		Age		Age	
	50:	1%	50:	10%	50:	5%
	51:	1%	51:	5%	51:	15%
	52:	1%	52:	5%	52:	10%
	53:	1%	53:	5%	53:	10%
	54:	2%	54:	5%	54:	10%
	55:	9%	55:	10%	55:	10%
	56:	10%	56:	11%	56:	10%
	57:	10%	57:	12%	57:	10%
	58:	12%	58:	13%	58:	10%
	59:	12%	59:	14%	59:	10%
	60:	20%	60:	15%	60:	15%
	61:	15%	61:	16%	61:	15%
	62:	25%	62:	17%	62:	20%
	63:	10%	63:	18%	63:	10%
	64:	15%	64:	19%	64:	15%
	65:	26%	65:	20%	65:	20%
	66:	23%	66:	20%	66:	20%
	67:	23%	67:	20%	67:	20%
	68:	23%	68:	20%	68:	20%
	69:	23%	69:	20%	69:	20%
	70:	100%	70:	100%	70:	100%
Disability	Age		Age		Age	
	25:	.01%	25:	.01%	25:	.03%
	30:	.02%	30:	.04%	30:	.05%
	35:	.07%	35:	.11%	35:	.09%
	40:	.12%	40:	.18%	40:	.14%
	45:	.17%	45:	.21%	45:	.18%
	50:	.20%	50:	.24%	50:	.21%
	55:	.20%	55:	.23%	55:	.23%
	60:	.00%	60:	.00%	60:	.24%
Merit Salary Increases Service-based rates (less than 5 years)	Years		Years		Years	
	< 1:	5.00%	< 1:	6.00%	< 1:	8.25%
	1-2:	4.50%	1-2:	5.00%	1-2:	7.00%
	2-3:	4.00%	2-3:	4.50%	2-3:	5.75%
	3-4:	3.00%	3-4:	3.50%	3-4:	4.25%
	4-5:	2.50%	4-5:	2.75%	4-5:	3.00%

Assumption	6/30/04	Segal 6/30/05	Deloitte Audit
Merit Salary Increases Age-based rates (at least 5 years)	Age 20: 1.00% 25: 1.00% 30: 1.00% 35: 1.00% 40: 1.00% 45: 1.00% 50: 1.00% 55: 1.00% 60: 1.00%	Age 20: 2.75% 25: 2.00% 30: 1.50% 35: 1.25% 40: 1.00% 45: 1.00% 50: 0.75% 55: 0.75% 60: 0.75%	Age 20: 3.00% 25: 2.50% 30: 2.00% 35: 1.75% 40: 1.50% 45: 1.50% 50: 1.25% 55: 1.25% 60: 1.25%
Service Accrual	1 Year Annually	1 Year Annually	1 Year Annually
Reciprocity	None	10% of Terminated Vested Members	10% of Terminated Vested Members
Withdrawal of Member Account at Termination	100% of Non-vested Members 0% of Vested Members	100% of Non-vested Members 0% of Vested Members	100% of Non-vested Members 25% of Vested Members??
Probability of Spouse or Domestic Partner	76% of Males 50% of Females	76% of Males 50% of Females	76% of Males 50% of Females