Memorandum

City of Dallas

DATE October 10, 2008

TO Honorable Mayor and Members of the City Council

SUBJECT Actuarial Audit of the Employees' Retirement Fund and the Dallas Police and Fire Pension System

The subject briefing is on the Council's October 15th agenda. Briefing materials are attached.

Please contact me if you need additional information.

D A Cook

David Cook
Chief Financial Officer

Cc: Mary K. Suhm, City Manager
Tom Perkins, Jr., City Attorney
Deborah Watkins, City Secretary
Craig Kinton, City Auditor
Ryan S. Evans, First Assistant City Manager
David O. Brown, Interim Assistant City Manager
Ramon Miquez, P.E., Assistant City Manager
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A.C. Gonzalez, Assistant City Manager

Actuarial Audit

-Dallas Employees' Retirement Fund
-Dallas Police & Fire Pension System

Dallas City Council Presentation

October 15, 2008

Background

- The City has 3 pension plans
  - Employees' Retirement Fund (ERF)(civilians)
  - Police and Fire Pension System (P&FP) (uniformed)
  - Police and Fire System - Supplemental Plan (P&FP Supp) (uniformed)

Background (as of December 31, 2007)

	ERF	P&FP	P&FP Supp
Active Members	8,117	4,909	40
Retirees and Beneficiaries	5,304	3,294	111
Other Terminated	1,043	182	0
Actuarial Assets ($ billions)	$3.183	$3.259	$0.025
Actuarial Liabilities ($ billions)	$2.915	$3.644	$0.030
Funded Ratio	109.2%	89.4%	83.9%

Purpose of Audit

- Actuarial Audit performed by Deloitte Consulting LLP to Conform to Texas Government Code Section 802.1012
  - Reviewed 2004 - 2008 actuarial valuation reports (5 years)
    - Retirement Plan for the Employees' Retirement Fund of City of Dallas
    - Dallas Police and Fire Pension System
    - Dallas Police and Fire Pension System – Supplemental Plan
  - Not a full replication of the actuarial valuation
  - Evaluate reasonableness and appropriateness of methods, assumptions, certifications and conclusions of the retained actuary

Review Process

- Considered Actuarial Standards of Practice (ASOP)
  - Appropriateness of the actuarial assumptions used in the actuarial valuations
    - No. 27,*Selection of Economic Assumptions for Measuring Pension Obligations*
    - No. 35, *Selection of Demographic and other Non-economic Assumptions for Measuring Pension Obligations*
  - Appropriateness of the actuarial cost method and actuarial asset valuation method
    - No. 4, *Measuring Pension Obligations*
- Reviewed test cases from GRS and Buck's valuation system
  - To determine if plan provisions, assumptions and methods are being appropriately valued

Findings & Recommendations

Regarding Plan Assumptions:

Recommendation	Applicable Plan
Consider adopting the RP-2000 Combined Healthy and Disabled Mortality Table with generational mortality improvement	All Plans
Continue to monitor actual emerging experience of the plans	All Plans

Findings & Recommendations

Regarding Enhancements of Reports:

Recommendation	Applicable Plan
Expand the valuation report to include annual pension cost and net pension obligation (GASB 27 information)	All Plans
Disclose expected future benefit payments	All Plans
Include a specific line item that identifies plan and assumption changes since the prior year valuation	Employee Retirement Fund Plan
Disclose target asset allocation for the retirement plans	All Plans
Include an exhibit that breaks down the source and amount of annual liability gains/losses	Police & Fire Plan Police & Fire Plan – Supplemental Plan

Audit Summary

- Compliant with Texas Government Code Section 802.1012
  - Audited 2004 - 2008 actuarial valuation reports
- Actuarial valuations are reasonable and appropriate
  - Assumptions and methodologies are within industry standards
  - Valuations present a fair representation of pension liabilities
  - No issues of serious concern
- Actuarial firms will incorporate suggested recommendations when requested by fund managers and as plan experience emerges
- Next review required by State law in 2013
  - Every 5 years

Appendix

- Actuarial Audit Report submitted by Deloitte Consulting LLP
  - Including responses from each fund's actuarial firm
    - ERF = Gabriel Roeder Smith & Company
    - P&FP = Buck Consultants
    - P&FP Supp = Buck Consultants

Dallas Police & Fire Pension System
Dallas Police & Fire Pension System – Supplemental Plan
Retirement Plan for the Employees' Retirement Fund of the City of Dallas

2004 – 2008 Actuarial Audits

September 17, 2008

Mr. David Cook
1500 Marilla St.
Room 4DN
Dallas, TX 75201

Re: Actuarial Audits for 2004 - 2008 Actuarial Valuations

Dear Dave:

As requested, we have performed an actuarial audit as required by the Texas Government Code Section 802.1012 for the following plans sponsored by the City of Dallas:

- Retirement Plan for the Employees' Retirement Fund of the City of Dallas
- Dallas Police and Fire Pension System
- Dallas Police and Fire Pension System – Supplemental Plan

All participant data, asset information, and system provisions that we relied upon for this study were provided by the Employees' Retirement Fund, Police and Fire Pension System and the currently retained actuaries for the respective plans, Gabriel Roeder Smith & Company (GRS) and Buck Consulting. 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 and the Texas Government Code Section 802.1012.

We would like to express our gratitude to GRS, Buck, Employees' Retirement Fund and Police and Fire Pension System staff for their cooperation in providing us with documentation needed to carry out our review.

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

Lance J. Weiss

Bret D. Linton

Lance J. Weiss, FCA, EA, MAAA
Senior Manager

Bret D. Linton, FSA, EA, MAAA
Manager

CITY OF DALLAS RETIREMENT SYSTEM
2004 – 2008 ACTUARIAL AUDITS

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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 at a particular point in time. This can help ensure that the current assets and future contribution requirements 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 the plans. The extent to which the actuarial valuations accurately measure each retirement plan's liabilities and contribution levels depends on how well the actuarial assumptions predict emerging plan experience.

One benefit of an actuarial audit is to provide assurance that the actuarial valuation work is being performed accurately and in accordance with generally accepted actuarial principles. 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 Employees' Retirement Fund and Police and Fire Pension System ("boards").

We have been retained by the City to satisfy the requirements of the Texas Government Code Section 802.1012. Our audit will cover the 2004 through 2008 actuarial valuation reports for the following three retirement plans:

- Retirement Plan for the Employees' Retirement Fund of the City of Dallas (Employee Plan) produced by GRS
- Dallas Police and Fire Pension System (Police and Fire Plan) produced by Buck Consultants
- Dallas Police and Fire Pension System – Supplemental Plan produced by Buck Consultants

Because we did not perform a full replication of the actuarial valuation, 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 each plan's retained actuaries.

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 finding of this actuarial audit is that the actuarial valuations present a fair representation of the actuarial liabilities and develop contribution rates which are generally appropriate to satisfy the funding obligations of the plans. We did not find any issues that rose to the level of serious concern.

We also found that the valuation results and actuarial assumptions and methodologies are reasonable and appropriate. However, we have suggestions that the boards may want to consider. 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 consist of one of the following categories:

- 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.

There were no issues that were of serious concern.

The following are our **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 actuaries can provide more detailed estimates of the impact of change.

Area	Recommendation	Impact of Change	Applicable Plan
Report Content	Consider including annual pension cost and net pension obligation in actuarial valuation (GASB 27 information)	Enhanced report content	All Plans
Report Content	Add a 10- to 20-year expected benefit payments projection to the retirement report	Enhanced report content	All Plans
Report Content	Add a historical summary of significant plan changes	Enhanced report content	All Plans
Report Content	Add a line item that shows plan and assumption changes since prior year, if any	Enhanced report content	Employee Plan

Area	Issue	Impact of Change	Applicable Plan
Report Content	Add an exhibit that breaks down the source and amount of annual liability gains/losses.	Enhanced report content	Police & Fire Plan Supplemental Plan
Investment Return	Disclose the target asset allocation for the Employee Plan and Police and Fire Plan and the historical investment return for the Supplemental Plan.	Enhanced report content	All Plans
Actuarial Assumptions	Consider adopting the RP-2000 Combined Healthy and Disabled mortality tables with generational mortality improvement for all participants.	Potential increase in actuarial liability	All Plans

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

III. ACTUARIAL AUDIT OF THE 2004 – 2008 ACTUARIAL VALUATIONS

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 Employees' Retirement Fund and the Police and Fire Pension System to their respective retained actuaries. It also assesses the reasonableness of the retained actuary's reconciliation and data adjustment procedures.

Audit Findings:

We believe the underlying data provided for our selected test cases by GRS and Buck is reasonable and consistent with the member data provided by the Employees' Retirement Fund and the Police and Fire Pension System.

Comments:

Our process for reviewing data validity focused on a comparison of the data provided by the Employees' Retirement Fund, the Police and Fire Pension System and the final data actually used by GRS and Buck for the test cases we requested. We were able to match the underlying data from the two sources. Accordingly, assuming that the test case data represents a fair cross-section of the plan participants, we conclude that the participant data used by GRS and Buck is reasonable and consistent with the member data provided by the Employees' Retirement Fund and the Police and Fire Pension System.

B. 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 actuarial assumptions and methods and pension plan provisions are generally being valued correctly for the test cases we reviewed. We also determined that all plan benefits are being considered and valued accurately.

Comments:

We selected eight test cases from the Employee Plan, ten test cases from the Police and Fire Plan and ten test cases from the Supplemental Plan with different combinations of gender, age, service and pay. The retained actuaries provided us with detailed output for these members from their actuarial valuation system. Sample outputs were received for all samples selected.

We found that the actuarial assumptions and plan provisions appear to be appropriately applied.

C. REVIEW OF ACTUARIAL METHODS AND PROCEDURES

This section determines if the actuarial cost method, actuarial asset valuation 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.)

Audit Findings:

The actuarial cost method used in all plans, Entry Age Normal, is a reasonable and generally accepted method. This actuarial cost method is also compliant with GASB 27.

Comments:

The normal cost, accrued actuarial liability and contributions are based on the Entry Age Normal (EAN) actuarial cost method. Under this method, the present value of all future benefits (PVFB) is determined for each employee, and is then spread evenly as a level percentage of pay over each employee's career. This method therefore produces employer contributions that are level as a percentage of payroll. This method also produces an actuarial accrued liability that is generally more conservative than other cost methods.

This meets the "acceptable actuarial cost method" criteria above.

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 methods used in all plans are reasonable and generally accepted methods.

Comments:

The actuarial value of assets for the Employee Plan equals the total market value at the valuation date with investment gains and losses phased-in over a 3-year period. This method smoothes out the investment gains and losses, which in turn smoothes out the annual contribution requirements.

The actuarial value of assets for the Police and Fire Plan equals the total market value at the valuation date with investment gains and losses phased-in over a 5-year period. This method smoothes out the investment gains and losses, which in turn smoothes out the annual contribution requirements.

The actuarial value of assets for the Supplemental Plan equals the total market value of assets.

In no event can the actuarial value of assets be less than 80% and no more than 120% of market value. Investment gains and losses are the difference between the actual return and the expected return (currently 8.0%). These methods are commonly-used approaches and meet the "reasonable method" criteria above.

Amortization Methodology

There are many ways to amortize the unfunded actuarial liability (and changes to the unfunded liability due to gains and losses, plan changes, assumption and method changes, etc.). 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 methods used in all plans are reasonable and generally accepted methods.

Comments:

For the Employee Plan, the amortization of unfunded actuarial liabilities is made as a level percent of payroll over an open period of 30 years. Under GASB 27 the amortization period cannot exceed 30 years; therefore this complies with GASB 27. However, please note that an open amortization means that each year the unfunded liability is reamortized over a 30 year period; therefore the unfunded liability is never completely paid off.

For the Police and Fire Plan and the Supplemental Plan, the amortization of unfunded actuarial liabilities is based on the contribution rates in the statutes, not to exceed 30 years.

This is a reasonable time period, and level percent of pay amortization is a rational basis.

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 appear to have been applied appropriately.

Comments:

The Employee Plan's funding policy is for the City to contribute 63% and the Membership to contribute 37% of the projected contributions for the year. The total projected contribution rate for 2008 is 22.71% of which the employees' 37% equates to 8.4%. The City's 63% is 14.31% of which 7.96% is for the pension obligation bond credit rate and the remaining 6.35% is for the ongoing contributions to the fund. As of December 31, 2007, the Employee Plan is 109.2% funded.

The Police and Fire Plan's funding policy is to pay a total level contribution rate of 36% of payroll of which 27.5% is contributed by the City and 8.5% is contributed by the Membership. As of January 1, 2008, the Police and Fire Plan is 89.4% funded.

The Supplemental Plan's funding policy is for the Membership to contribute 8.5% of payroll and for the City to pay the sum of the normal cost and the amortization of the Unfunded Actuarial Accrued Liability over an open period of 30 years. As of January 1, 2008, the Supplemental Plan is 83.9% funded.

The calculation of the Unfunded Actuarial Accrued Liability and amortization amounts appear reasonable.

Report Content

This section determines if the valuation report meets applicable professional standards. Generally, the actuarial report 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 actuarial report meets applicable actuarial standards of practice, and appears to accurately represent the funded status of the plans.

Comments:

Below are some general comments for the retained actuaries with regards to the actuarial report. These comments are not serious concerns, but they are areas for consideration.

- For all plans, we suggest expanding the valuation report disclosures by showing annual pension cost and net pension obligation (GASB 27 information).

- For all plans, we suggest showing expected benefit payments in the actuarial valuation report. This could be for a 10 to 20 year period, showing current and future retirees separately.

- For all plans, 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.

- For the Police and Fire Plan and the Supplemental Plan, we suggest adding an exhibit that breaks down the source and amount of annual liability gains/losses. This allows for a better understanding of how well the individual actuarial assumptions are matching actual experience on a year by year basis.

- For the Employee Plan, we suggest adding a specific line item that clearly identifies any assumption changes and plan changes since the prior year. This is useful to quickly identify and summarize changes that occur from year to year.

III. ACTUARIAL AUDIT OF THE 2004 – 2008 ACTUARIAL VALUATION

E. 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, they should be consistent.

Inflation

Audit Findings:

For the Employee Plan, the chosen assumption of 3.00% is reasonable.

For the Police and Fire Plan and the Supplemental Plan, the chosen assumption of 4.00% is reasonable.

Comments:

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

Inflation can be studied by reviewing historical increases in the Consumer Price Index, or CPI. Average CPI-U (All Urban Consumers), 1956 to 2006, is shown below, for the U.S. We also show interim averages:

Period	Years	CPI-U (US)
1996-2006	10	2.6%
1986-2006	20	3.04
1976-2006	30	4.39
1966-2006	40	4.67
1956-2006	50	4.07

Also, the Office of the Chief Actuary of the Social Security Administration provided inflation forecasts for a 30-year period in the 2008 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 future expected inflation is 1.80% to 3.80%. Using a reasonable range of 1.80% to 3.80% for future expected inflation, and the historical data above, the inflation assumptions for all three plans are reasonable.

Recommendation:

No change is recommended.

Payroll Growth

Audit Findings:

The Employee Plan's chosen assumption of 3.00% is a reasonable assumption.

The Police and Fire Plan and the Supplemental Plan's chosen assumption of 4.00% is a reasonable assumption.

Comments:

The assumed aggregate payroll growth is used in the amortization of the unfunded actuarial accrued liability.

National payroll growth can be studied by reviewing increases in the historical Average Wage Index, or AWI, published by the Social Security Administration. The AWI, 1956 to 2006, is shown below. Real Payroll Growth is the AWI less the CPI-U.

Period	Years	AWI	CPI-U (US)	Real Payroll Growth
1996-2006	10	4.09%	2.6%	1.49%
1986-2006	20	4.11	3.04	1.07
1976-2006	30	4.91	4.39	0.52
1966-2006	40	5.30	4.67	0.63
1956-2006	50	4.92	4.07	0.85

Also, the Office of the Chief Actuary of the Social Security Administration provided real payroll growth forecasts for a 30-year period in the 2008 OASDI Trustees Report:

Scenario	Payroll Differential
Low Cost	1.60%
Intermediate Cost	1.10
High Cost	0.60

These scenarios imply that a reasonable range for expected future payroll growth, excluding expected future inflation, is 0.60% to 1.60%.

Recommendation:

Using the expected future payroll growth and the expected future inflation, all three plans' payroll growth assumption appears acceptable.

No change is recommended.

Investment Return

Audit Findings:

The Employee Plan's current assumption of 8.25% is reasonable.

The Police and Fire Plan and the Supplemental Plan's current assumption of 8.5% are reasonable. Participants who elect the Deferred Retirement Option Plan under the above mentioned plans has an investment return assumption of 9.0%.

Comments:

The investment return assumption reflects anticipated returns on the plan's current and future assets. This is a long term assumption that is based on a plan's investment strategy and target asset allocation mix. This assumption is used to calculate the present value of projected benefit obligations.

During the prior ten years, the plans experienced an annual average investment earnings rate of 8.57% and 9.64% for the Employee Plan and the Police and Fire Plan respectively. The investment rates of return in the following table are based on beginning and end-of-year market values for all asset categories.

Historical Annual Investment Return		
Year	**Employee Plan**	**Police & Fire Plan**
2007	3.56%	8.85%
2006	16.90	14.64
2005	7.93	10.81
2004	15.22	13.96
2003	27.05	31.65
2002	-9.81	-12.26
2001	-5.46	-7.76
2000	-3.45	-1.52
1999	16.74	24.39
1998	16.99	13.68
Average	8.57%	9.64%

The historical investment return for the Supplemental Plan was not disclosed.

The deferred retirement option plan's account is accumulated based on a ten-year weighted average of the Police and Fire Pension System's actual market return.

Recommendation:

Looking at the historical data above, the investment return assumption for the Employee Plan, the Police and Fire Plan and the deferred retirement option plan account appears to be reasonable.

The Supplemental Plan's investment return assumption is not disclosed. However, we understand that the plan assets are invested in the same manner as the Police and Fire Plan's assets.

We suggest, for all three plans, to disclose plan's target asset allocation and for the Supplemental Plan to disclose the historical investment return.

Salary Increase

Audit Findings:

The salary increase rates are used to model year-to-year compensation increases. It includes productivity gains and inflation.

The salary increase rates used appear to be reasonable.

Comments:

The salary increase assumption used in the Employee Plan is a graded set of rates that vary by years of service, starting at 8.00% at 0 years of service and decreasing gradually to 3.5% at 9 or more years of service.

The salary increase assumption used in the Police and Fire Plan and the Supplemental Plan is a graded set of rates that vary by years of service, starting at 9.64% at 0 years of service and decreasing gradually to 4.0% at 30 or more years of service.

Recommendations:

We recommend that the boards and the retained actuaries continue to monitor actual emerging experience to ensure that their salary increase assumption continues to be reasonable in the future.

F. 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 consistent in combination with others.

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.

Mortality

Audit Findings:

The mortality table is considered a current mortality table. However, we recommend adopting recently published mortality tables that include recognition of projected future mortality improvement. This is more conservative than the current mortality tables.

Comments:

The mortality assumption used in the Employee Plan for active participants is the 1994 Uninsured Pension Mortality Table multiplied by 87% for males and multiplied by 125% for females. The mortality assumption for disabled participants is the 1965 Railroad Retirement Board Disabled Annuitants Mortality Table and for females the rates are multiplied by 60%. For other benefit recipients, it is the 1994 Uninsured Pension Mortality Table, set forward two years for males. The female base rates are multiplied by 125% for ages less than 85 and multiplied by 135% for ages 85 and up.

The mortality assumption used in the Police and Fire Plan and the Supplemental Plan is the 1994 Group Annuity Mortality Table set back one year for males and 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 and Disability Mortality tables with generational mortality improvement for all plans.

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. The current methodology does not include projected mortality improvements and potentially builds in an expected loss. Accordingly, we recommend tables to include recognition of projected future mortality improvement (generational mortality). This is more conservative than the current mortality tables. We suggest that the retained actuaries review the impact of recognizing future mortality improvement with each board.

Recommendations:

We recommend the boards to consider adopting the RP-2000 Combined Healthy and Disability Mortality tables with generational mortality improvement.

Withdrawal

Audit Findings:

The withdrawal rates used appear to be reasonable.

Comments:

The current withdrawal assumption used in the Employee Plan is a graded set of rates that vary by years of service and start at 21% at 0 years of service and decrease gradually to 1.4% at 20 or more years of service. In addition, there is a 0% assumption of withdrawal for members who are eligible to retiree.

The current withdrawal assumption used in the Police and Fire Plan and the Supplemental Plan is a graded set of rates that vary by age. For police officers, the rates start at 4.7% at age 20 – 29, 3.5% at age 30 – 34, and 2.5% at age 35 – 49. For fire officers, the rates start at 2.3% at age 20 – 29 and 1.8% at age 30 – 49.

Recommendations:

For all plans, we recommend that the boards and the retained actuaries continue to monitor actual emerging experience to ensure that their withdrawal assumption continues to be considered reasonable in the future.

Retirement

Audit Findings:

The retirement rates used appear to be reasonable.

Comments:

The current retirement assumption used in the Employee Plan is a graded set of rates that vary by age, sex and under and over 18 years of service. There is also an increase in the assumed retirement rates for the first year participants are eligible to retire.

The current retirement assumption used in the Police and Fire Plan and the Supplemental Plan is a graded set of rates that vary by age. The assumed rate is 2% at ages 38 – 49, 4% at age 50, 3% at ages 51 – 54, 25% at age 55, 20% at ages 56 - 64 and 100% at age 65.

Recommendations:

We recommend that the boards and the retained actuaries continue to monitor actual emerging experience to ensure that their retirement assumption continues to be considered reasonable in the future.

Disability

Audit Findings:

The disability rates used appear to be reasonable for the Employee Plan. For the Police and Fire Plan and the Supplemental Plan, there appears to be no disability rate assumed after age 45.

Comments:

The disability assumption for the Employee Plan is a graded set of rates that vary by age starting at 3% at age 30 and increasing gradually to 6% at age 60.

The disability assumption for the Police and Fire Plan and the Supplemental Plan is a graded set of rates that vary by age. For police officers, the rates start at 3.5% at age 20 and increasing gradually to 7.9% at age 40. For fire officers, the rates start at 7.0% at age 20 and increasing gradually to 15.8% at age 45.

Recommendations:

We recommend that the boards and the retained actuaries continue to monitor actual emerging experience to ensure the disability assumption continues to be considered reasonable in the future.

Percent Married

Audit Findings:

The marriage assumption used appears to be reasonable.

Comments:

It is assumed that 80% of members are married.

Recommendations:

We recommend that the boards and the retained actuaries continue to monitor actual emerging experience to ensure the marriage assumption continues to be considered reasonable in the future.

IV. RETAINED ACTUARY'S QUALIFICATIONS

Qualifications and Objectivity of Retained Actuary

Lewis Ward and Mark Randall of Gabriel, Roeder, Smith and Company signed the actuarial report for the Employee Plan.

Richard Mackesey of Buck Consultants signed the actuarial report for the Police and Fire Plan and the Supplemental Plan.

Gabriel, Roeder, Smith and Company is a nationally recognized actuarial and consulting firm specializing in public sector agencies and has a positive reputation in the marketplace.

Buck Consultants is a nationally recognized actuarial and consulting firm and has a positive reputation in the marketplace.

Mark Randall is a Member of the American Academy of Actuaries, a Fellow of the Conference of Consulting Actuaries and an Enrolled Actuary.

Lewis Ward is not a credentialed actuary. However, based on our conversations with Mr. Ward, we understand that he has 20+ years of experience.

Richard Mackesey is a Member of the American Academy of Actuaries, a Fellow of the Society of Actuaries and an Enrolled Actuary.

These organizations have professional standards that, among other provisions, require an actuary to perform only assignments for which they are qualified. Mr. Randall has not stated in the actuarial report that he meets the Qualification Standards of the American Academy of Actuaries to perform these measurements. However, we have confirmed his credentials by reference to the Actuarial Directory as found on the Society of Actuaries' website. The retained actuaries have stated in writing in the actuarial report that they are independent actuaries.

Accordingly, we have no reason to challenge the qualifications of Mr. Randall, Mr. Mackesey or the qualifications of Gabriel, Roeder, Smith and Company and Buck Consultants to perform the actuarial valuations.

Based on the procedures performed, we conclude that Mr. Randall, Gabriel Roeder Smith and Company, Mr. Mackesey, and Buck Consultants the retained actuaries for the City of Dallas pension plans, are appropriately qualified to provide these measurements.

V. CONCLUSIONS

Conclusions

Based on the actuarial reports and sample test cases we received, the actuarial valuations appear to have been prepared correctly and in a manner consistent with generally accepted actuarial practice, and the valuation results appear 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 actuaries and the boards may want to consider 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 activities to consider which may improve the actuarial services and overall System performance:

- Independently replicate the actuarial valuation
- Calculate projections of future year contribution requirements
- Audit the complete census data
- Audit the fees charged by service providers to the System
- Review the administrative procedures used by the retirement plans, such as benefit determinations and data changes
- Monitor GASB activity for possible changes to reporting requirements (i.e., convergence with other accounting standards like FASB)

We would be happy to assist you with any or all of these other activities. Please let us know if you would like our assistance with these or other areas.

VI. RESPONSES RECEIVED

Attached are the responses received from the boards and the retained actuaries after reviewing the preliminary draft audit report. Responses have been incorporated into the final report, as appropriate, or included in the following attachments.

Exhibit A. Response received from the Employee Retirement Fund and Gabriel Roeder Smith & Company (GRS)

GRS

Gabriel Roeder Smith & Company
Consultants & Actuaries

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Irving, TX 75038-2631

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August 14, 2008

Ms. Cheryl Alston
Administrator
Dallas Employees' Retirement Fund
600 North Pearl Street, Suite 2450
Dallas, TX 75201-7415

Re: Response to Actuarial Audit of the Employees' Retirement Fund of the City of Dallas

Dear Cheryl:

Gabriel, Roeder, Smith & Company ("GRS") offers our comments below on the draft actuarial audit report prepared by Deloitte Consulting LLP ("Deloitte"), dated August 5, 2008. The report provides Deloitte's audit, at the behest of the City of Dallas as required by Texas Government Code Section 802.1012, of the Employees' Retirement Fund of the City of Dallas, TX ("the Fund") as well as two retirement funds administered by the Police and Fire Pension System. Since GRS is the retained actuary for the Fund only, our following comments pertain to the Fund only and we offer no comments on the findings regarding the other two audited retirement funds.

General Comments

We are very pleased with the results of the actuarial audit of the Employees' Retirement Fund of the City of Dallas, TX. We would like to quote two passages from the *Summary of Findings and Recommendations* section of the audit report, in particular:

"The overall finding of this actuarial audit is that the actuarial valuations present a fair representation of the actuarial liabilities and develop contribution rates which are generally appropriate to satisfy the funding obligations of the System."

"We also found that the valuation results and actuarial assumptions and methodologies are reasonable and appropriate."

These statements should provide both the City and the Fund with the confidence that the actuarial results they are receiving are both accurate and reasonable. In addition, we would like to point out that the Fund's Board of Trustees had an actuarial audit performed following our December 31, 2005 actuarial valuation report with similar positive findings. Having two separate and independent actuarial firms confirm that the results the Fund is receiving from GRS are accurate should provide the Fund with extreme confidence when it presents its contribution requirements to the City of Dallas.

In the remainder of our letter, we will respond to all of the suggestions made by Deloitte in its audit report. Finally, we would like to respectfully suggest that Deloitte modify its report format. As stated above, the audit report provides audit results on three separate retirement funds. It appears to us that some of the suggestions made by Deloitte are not directed towards the Fund that we are responsible for but instead pertain to the Police & Fire Pension System. However, under the current draft report format there appears to be very little or no distinction made in their recommendations between the two systems.

Specific Comments

1) Deloitte Recommendation – Consider using a closed amortization period rather than an open (or rolling) 30-year amortization period.

GRS Response: Deloitte's comments are correct in that an open amortization period typically never eliminates the unfunded liability of a system if all assumptions are exactly met. However, currently the Fund is in an "overfunded" position whereby the actuarial value of assets of the Fund exceeds the actuarial accrued liability creating a surplus. Closing the amortization period would actually reduce this surplus more quickly. We would prefer to retain the current more conservative open position as long as the Fund retains its "overfunded" status. As we have previously discussed with the Staff and Board, it will be our recommendation to close the amortization period if the Fund's actuarial accrued liabilities exceed its assets in the future thereby creating an unfunded liability.

2) Deloitte Recommendation – Consider including annual pension cost and net pension obligation in actuarial valuation (GASB 27 information).

GRS Response: GASB 27 disclosure information is for the employer's disclosure requirements not the Fund. Because the City's fiscal year and the Fund's fiscal year are different, additional information would be required to provide the disclosure information. However, if the Board would like GRS to include this information in our future actuarial valuation reports, we would be happy to do so.

3) Deloitte Recommendation – Add a 10 to 20 year projection of expected benefit payments to the valuation report.

GRS Response – If the Board requests this additional information we will certainly add it to our annual reports. It may, however, be more useful to the Board and Staff to have an overall cash-flow projection prepared each year rather than just an outflow projection, as suggested by Deloitte. We are prepared to further discuss these potential projections with the Fund's staff and the difference between projecting overall cash flow and merely estimating future expected benefit payments.

4) Deloitte Recommendation – Add a historical summary of significant plan changes.

GRS Response – There have not been any significant changes to the benefit structure of the Fund since "the Rule of 78" was adopted during the 1990s. Typically, we do include a historical summary of plan changes in many of our reports for other retirement systems and will work with the Fund's Staff to incorporate this recommendation.

5) Deloitte Recommendation – Add an exhibit that breaks down the source and amount of annual liability gains/losses.

GRS Response – This is already included in our annual actuarial valuation reports.

6) Deloitte Recommendation – Add a specific line item that clearly identifies any assumption and or plan changes since the prior year.

GRS Response – If such an event has occurred, it is itemized and fully discussed in the analysis of the change in the unfunded actuarial accrued liability from one year to the next. We will add place holder line items to the report with zero values for years where these events do not occur.

7) Deloitte Recommendation – Consider including the plan's target asset allocation.

GRS Response – We include this information in our experience study analysis prepared periodically. Moreover, since this information is already contained in the Fund's Comprehensive Annual Financial Report, we do not routinely include it in the valuation report. However, we will include it in future reports at the Board's request.

8) Deloitte Recommendation – On several occasions in the report, Deloitte recommends that the Fund annually monitor actual emerging experience to ensure that the assumption continues to be reasonable in the future.

GRS Response – The actuarial valuation report already includes analysis of both the most recent annual experience and the cumulative experience since the most recent formal experience investigation study.

9) Deloitte Recommendation – Consider adopting RP-2000 Combined Healthy and Disabled Mortality tables with generational mortality improvement.

GRS Response – The current mortality assumption was established as of December 31, 2005. At that time, significant margins for mortality improvement were, indeed, included in the assumption and fully discussed in our experience study report. We will continue to monitor this assumption during the interim period. In the absence of significant negative experience, we would not recommend changing the mortality assumption until the next formal experience investigation study is performed. At that time, we will certainly consider the adoption of a generational mortality table. In actual practice, however, one of the problems we have found with using RP-2000 is that it has a very poor fit with our retiree populations. Hopefully, by the time we conduct the next experience study, we will have some new choices for the base mortality table assumption that will have a better fit with the Fund members and the actual mortality experience that we measure.

One other item we would like to provide comment on is the description of the contribution rates of the City and members to the Fund. The description provided in Deloitte's report is accurate. However, it may lead to possible misinterpretation if a reader is only skimming the report. For the Police & Fire plan, the contribution rate is specified as the actual percentage of payroll contributed by the City. However, for the Employee's plan the only percentages provided are the percentage split of the total contribution rate between the City and the employees. A casual reader may try and compare these numbers. We offer the following suggested wording for Deloitte's final report:

The employee plan's funding policy is for the City to contribute 63% and the Membership to contribute 37% of the projected contributions for the year. The total projected contribution rate for 2008 is 22.71% of which the employees' 37% equates to 8.4%. The City's 63% is 14.31% of which 7.96% is for the pension obligation bond credit rate and the remaining 6.35% is for the ongoing contributions to the fund. As of December 31, 2007, the employee plan is 109.2% funded.

If you have any questions or need any additional clarifying information with regard to the above, please do not hesitate to contact either one of us.

Respectfully submitted

Lewis Ward

Lewis Ward
Consultant

Mark R. Randall

Mark R. Randall, FCA, EA, MAAA
Executive Vice President

Zz1
cc:

Exhibit B. Response received from the Police and Fire Pension System and Buck Consultants

buckconsultants.
an ACS company

August 22, 2008

Mr. Richard L. Tettamant
Administrator
Dallas Police & Fire Pension System
2301 N. Akard Street, Suite 200
Dallas, TX 75201

Re: Preliminary Draft of the Actuarial Audits for 2004 – 2008 Actuarial Valuations

Dear Mr. Tettamant:

As you requested, we have reviewed the August 5, 2008 draft report of the Actuarial Audits for 2004 -2008 prepared by Deloitte Consulting for the City of Dallas. We have provided comments on the recommendations on pages 2 and 3 of the draft report. In addition, we have also included comments on other recommendations made throughout the draft report but not highlighted on pages 2 and 3. When reviewing our comments, please bear in mind that, in some cases, there is not a clear indication in the draft report as to which plan (e.g., Employees' Retirement Fund, Police and Fire Pension System or Supplemental Plan) the comments pertain. Therefore, we have addressed each recommendation as if it pertains to the Police and Fire Pension System or the Supplemental Plan.

Consider including annual pension cost and net pension obligation in actuarial valuation (GASB 27 information)

The reports for the Police and Fire Pension System and the Supplemental Plan do not contain GASB 27 information used by the City with regard to the annual pension cost or the net benefit obligation. The City uses the results in this report to determine the impact its contribution rates have on its financial statements. If the Board decides this information should be in their report and the City provides the necessary information, these amounts can be added to the valuation reports for both the Police and Fire Pension System and the Supplemental Plan. However, please note that if these amounts are added; the report could contain three different City contribution amounts. These would include:

1. The 27.50% contribution rate set by statute,
2. The annual required contribution, and
3. The annual pension cost.

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Rather than providing more useful information, the disclosure of these three different contribution amounts could add more confusion amongst the membership as to what the appropriate contribution levels are.

Add a 10- to 20-year expected benefit payments projection to the retirement report

The reports for the Police and Fire Pension System and the Supplemental Plan do not contain any projections of expected benefit payments projection. While we have prepared these projections and provide them to the Board outside of the report, the addition of such a projection to the report is reasonable.

Add a historical summary of significant plan changes

The reports for the Police and Fire Pension System and the Supplemental Plan do not contain a historical summary of significant benefit changes. However, this summary is provided in the annual report of the Pension System. Since we do not feel that an actuarial report is the appropriate place to disclose such a summary and since the history is already provided in the annual report, we do not feel that this history should be added to the actuarial reports.

Add a line item that shows plan and assumption changes since prior year, if any

The reports for the Police and Fire Pension System and the Supplemental Plan do contain descriptions of changes in the plan provisions and assumptions since the last valuation (see page 3 of the 2008 Police and Fire Pension System valuation report and page 2 of the 2008 Supplemental Plan report). We will continue to describe changes in plan provisions and assumptions since the prior valuation.

Add an exhibit that breaks down the source and amount of annual liability gains/losses

The reports for the Police and Fire Pension System and the Supplemental Plan do contain a calculation of the total liability gain/loss and a comparison of the actual experience to that assumed. However, the reports do not contain a calculation of the liability gain/loss by source. The addition of the calculation of the gain/loss by source would be a reasonable addition to the reports.

Clarify that the normal form of payment for a married participant is a fully subsidized 50% Joint and Survivor annuity

The reports for the Police and Fire Pension System and the Supplemental Plan contain a detailed description of the benefits payable to surviving spouses. There is no additional description to add to the reports to clarify the benefits.

Disclose the target asset allocation for the employee plan and police and fire plan and the historical investment return for the supplemental plan

The report for the Police and Fire Pension System does not contain a description of the asset allocation. This description is contained in the annual report of the System. Since the asset allocation is already provided in the annual report, we do not feel that the asset allocation should be added to the actuarial reports.

The report for the Supplemental Plan does not contain the historical investment return. Since these plan assets are invested in the same manner as the Police and Fire Pension System assets and are such a small part of the total assets, disclosing returns for the Supplemental Plan that could differ from the returns calculated for the Police and Fire Pension System (due to rounding, timing of cash flows, etc.) could confuse the users of the actuarial reports.

Consider adopting the RP-2000 Combined Healthy and Disabled mortality tables with generational mortality improvement for all participants

The mortality tables used for healthy members in the valuations for the Police and Fire Pension System and the Supplemental Plan are the 1994 Group Annuity Mortality tables setback one year. These tables were selected based on the actual experience of the members of the Police and Fire Pension System and were selected with a level of conservatism (i.e., actual deaths are expected to be greater than expected deaths in the near term). This level of conservatism was included to implicitly account for future mortality improvement. We anticipate that removing this implicit improvement assumption, changing the base tables to the RP-2000 tables, and adding an explicit mortality improvement assumption would increase the Actuarial Accrued Liability of Police and Fire Pension System by less than 0.5%.

The draft report contained other comments that we will also address.

GASB 27 amortization period - The amortization periods used for the Police and Fire Pension System is the funding period, based on the contribution rates in the statutes, not to exceed 30. In the 2008 report for the Police and Fire Pension System the amortization period was less than 30 years. The contribution policy for the Supplemental Plan calls for an amortization of the Unfunded Actuarial Accrued Liability over a 5-year period with the constraint that the current year's contribution cannot be greater or lesser than the prior year's contribution by $100,000 but never less than a 30-year contribution requirement. In the 2008 report for the Supplemental Plan the amortization period was five years.

Monitor actuarial assumptions annually – The valuation report for the Police & Fire Pension System contains a section that summarizes the actual experience to that assumed for each major assumption since the last time the assumption was changed or five years, if shorter.

In summary, some of the changes recommended in the draft report could or should be made to the reports of the Police and Fire Pension System and the Supplemental Plan valuation reports. But, it is important to note that of all of the changes recommended in the draft report, there will be no meaningful change in the contribution requirements or funding ratios in the 2008 valuation reports for the Police and Fire Pension System or the Supplemental Plan.

If you have any questions or need additional assistance, please let us know.

Very truly yours,

Richard Mackesey /km

Richard A. Mackesey, FSA, EA, MAAA
Principal, Consulting Actuary

RAM:km
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