

**AUSTIN FIRE FIGHTERS RELIEF  
AND RETIREMENT FUND  
ACTUARIAL VALUATION REPORT**

ACTUARIAL VALUATION AS OF DECEMBER 31, 2005  
FOR PLAN YEAR BEGINNING JANUARY 1, 2006

May 30, 2006

# AUSTIN FIRE FIGHTERS RELIEF AND RETIREMENT FUND

## ACTUARIAL VALUATION REPORT

PREPARED AS OF DECEMBER 31, 2005

This report describes the results of an actuarial valuation of the Austin Fire Fighters Relief and Retirement Fund. The Austin Fire Fighters Relief and Retirement Fund retained Towers Perrin to perform this actuarial valuation for the purposes of determining (1) the funding status for the plan year January 1, 2006 through December 31, 2006; and (2) financial statement disclosure and reporting information for the fiscal year ending December 31, 2005.

The consulting actuaries are members of the Society of Actuaries and other professional actuarial organizations and meet their "General Qualification Standard for Prescribed Statements of Actuarial Opinions" relating to pension plans.

The calculations were made as of December 31, 2005. In preparing the results presented in this report, we have relied upon information provided to us regarding plan provisions, plan participants, and plan assets as of December 31, 2005. We have reviewed this information for overall reasonableness and consistency, but have neither audited nor independently verified this information. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information.

The actuarial assumptions and the accounting policies and methods employed in this report have been selected by the plan sponsor, with the concurrence of Towers Perrin.

The funding determination portion of this actuarial valuation has been conducted in accordance with principles of practice prescribed by the Actuarial Standards Board and the requirements of the Texas Government Code.

The financial statement disclosure portion of this actuarial valuation has been conducted according to our understanding of Statements No. 25 and 27 of the Government Accounting Standards Board. The Government Accounting Standards Board requires the use of reasonable assumptions. The actuarial assumptions used are identical to the assumptions used for the funding determination portion of the valuation.

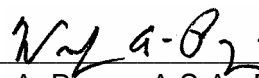
The results shown in this report have been developed based on actuarial assumptions that are considered to be reasonable and within the "best-estimate range" as described by the Actuarial Standards of Practice. Other actuarial assumptions could also be considered to be reasonable and within the best-estimate range. Thus, reasonable results differing from those presented in this report could have been developed by selecting different points within the best-estimate ranges for various assumptions.

The information contained in this report was prepared for the internal use of the Austin Fire Fighters Relief and Retirement Fund and its auditors in connection with our actuarial valuation of the pension plan. It is not intended nor necessarily suitable for other purposes.

Towers Perrin



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**AUSTIN FIRE FIGHTERS RELIEF AND RETIREMENT FUND**

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## AUSTIN FIRE FIGHTERS RELIEF AND RETIREMENT FUND

### SECTION I

### SUMMARY

#### A. KEY RESULTS

The current valuation reflects design changes approved by the Legislature and changes in design and actuarial assumptions approved by the Board. The key results from the current actuarial valuation, along with comparable figures from the prior valuation, are as follows:

	<u>December 31, 2005</u>		<u>December 31, 2003</u>
	<u>After Changes</u>	<u>Before Changes</u>	
Normal Cost (Percent of Payroll)	29.810%	30.819%	30.903%
Actuarial Accrued Liability	\$580,053,954	\$517,978,162	\$452,668,849
Actuarial Value of Assets	\$493,567,055	\$493,567,055	\$421,136,248
Unfunded Actuarial Accrued Liability	\$86,486,899	\$24,411,107	\$31,532,601
Amortization Period in Years	115.9	19.1	33.4
Funded Ratio	85.1%	95.3%	93.0%
Valuation Payroll	\$65,885,401	\$60,065,653	\$55,939,162
Annualized Reported Payroll	\$58,889,565	\$58,889,565	\$53,819,262

The general valuation results are described in detail in Section II. Refer to Section III for financial statement disclosure information under Governmental Accounting Standards Board Statements No. 25 and 27 (GASB 25 and 27).

#### B. CHANGES SINCE LAST VALUATION

There have been no changes in plan provisions, actuarial methods or procedures since the prior actuarial valuation.

Towers Perrin prepared an experience study covering plan years 2000 through 2005 and conducted an actuarial assumption review with the Board of Trustees in April 2006. As a result of this experience study and actuarial assumption review, the Board of Trustees adopted the following actuarial assumptions:

- Based on the past experience and future expectations, the Board decided that the current COLA, termination, disability, percentage with surviving spouses or beneficiaries and refund election assumptions are reasonable and would not change.
- The retirement and DROP experience for 2001–2005 showed that members were retiring later and electing fewer DROPs compared to the current assumptions. Therefore, the Board changed the retirement and DROP assumptions to the rates that more closely matched that experience.
- The mortality table for healthy members, retirees and beneficiaries was changed from the 1994 Group Annuity Mortality Table to the RP 2000 Mortality Table (Combined Healthy, with Blue Collar Adjustment, Projected to 2015) to reflect expected mortality trends.
- The Board decided to change the salary increase assumptions. The new across-the-board component of the salary increase assumption reflects the 9% increase effective January 8, 2006 and the 5.5% increases effective January 7, 2007 and October 28, 2007 that the City has already agreed to, with a 5% assumed annual across-the-board increase thereafter.
- Based on past promotion experience and the wage structure adopted for 2006 and later, the Board changed the promotion/longevity/step component of the salary increase assumptions to a table based on service that produces an average promotion/longevity/step increase of 3.0% per year.
- The assumed payroll growth rate also increased to 5% annually. This is composed of assumed annual price inflation of 3.15% plus assumed GDP growth per worker of 1% plus additional productivity increases of 0.85% for Austin wages.
- The Board changed the funding interest rate to 7.75% per year based on the current target asset mix of the Fund and investment return expectations. This is composed of 3.15% assumed annual price inflation plus real investment return of 4.9% per year minus assumed expenses of 0.3% per year.

## C. PLAN EXPERIENCE

The unfunded actuarial accrued liability increased approximately \$55.0 million between December 31, 2003 and December 31, 2005 (from \$31.5 million as of December 31, 2003 to \$86.5 million as of December 31, 2005). The factors contributing to this change are:

- Interest on the unfunded actuarial accrued liability increased the unfunded actuarial accrued liability by \$5.1 million.
- Total contributions in excess of those required to pay the normal cost decreased the unfunded actuarial accrued liability by \$3.5 million.
- The total return on the actuarial value of assets during 2004 was 7.85% and during 2005 was 7.90% versus the assumed 8% per year, which increased the unfunded actuarial accrued liability by \$1.1 million.
- The \$32 annuity increase on January 1, 2005 and the \$100 annuity increase on January 1, 2006 versus the expected 1.0% COLA each year increased the unfunded actuarial accrued liability by \$6.2 million.
- Actual pay increases during 2004 and 2005 were less than expected based on the actuarial assumptions. This experience produced a gain and decreased the unfunded actuarial accrued liability by \$13.8 million.
- The actuarial assumption changes approved by the Board increased the unfunded actuarial accrued liability by \$62.1 million and decreased the normal cost from 30.819% of covered payroll to 29.810%.
- All other experience during 2004 and 2005 that differed from that anticipated in the assumptions generated an actuarial gain of \$2.2 million which decreased the unfunded actuarial accrued liability.

# AUSTIN FIRE FIGHTERS RELIEF AND RETIREMENT FUND

## SECTION II

### ACTUARIAL VALUATION

#### A. DETERMINATION OF FUNDED STATUS AND AMORTIZATION PERIOD

The current valuation has been determined based on the actuarial assumptions summarized in Appendix D and the actuarial cost method described in Appendix E.

The actuarial assumptions are used to predict the likelihood of various benefits becoming payable from the plan, the size of those benefits, and the estimated value today of those future benefits. Actual experience may deviate from these assumptions, resulting in actuarial gains and losses.

The actuarial cost method is a budgeting technique, used to allocate total estimated plan liabilities over past, current and future years. Thus, the choice of the cost method does not affect the overall long-term plan costs, but only the incidence of when those costs are reflected. The cost method is designed to give plan costs as a relatively level percentage of payroll if characteristics of the member group do not change significantly.

An actuarial valuation is the process by which the actuarial assumptions and cost method are applied to actual plan provisions, assets, and member data to develop a funding level sufficient to provide for future benefit payments, the actual ultimate value of which is not now known.

#### B. CHANGES SINCE LAST VALUATION

The following actuarial assumptions were changed:

- The retirement and DROP assumptions were changed to rates showing that members were retiring later and electing fewer DROPs compared to the current assumptions.
- The mortality table for healthy members, retirees and beneficiaries was changed from the 1994 Group Annuity Mortality Table to the RP 2000 Mortality Table (Combined Healthy, with Blue Collar Adjustment, Projected to 2015).
- The across-the-board component of the salary increase assumption was changed to reflect the 9% increase effective January 8, 2006 and the 5.5% increases effective January 7, 2007 and October 28, 2007, with a 5% assumed annual across-the-board increase thereafter.

- The promotion/longevity/step component of the salary increase assumptions was changed to a table based on service that produces an average promotion/longevity/step increase of 3.0% per year.
- The assumed payroll growth rate was also increased to 5% annually.
- The funding interest rate was changed to 7.75% per year.

C. ACTUARIAL BALANCE SHEET

	December 31, 2005		December 31, 2003
	After Changes	Before Changes	
<u>Actuarial Assets:</u>			
Actuarial Value of Tangible Assets	\$493,567,055	\$493,567,055	\$421,136,248
Actuarial Present Value of Future Contributions			
By current members	114,085,548	94,033,132	91,309,632
Employer normal costs	102,531,662	90,553,308	88,419,130
Unfunded/(over funded) actuarial accrued liability	86,486,899	24,411,107	31,532,601
Total	<u>\$303,104,109</u>	<u>\$208,997,547</u>	<u>\$211,261,363</u>
Total	\$796,671,164	\$702,564,602	\$632,397,611
<u>Actuarial Liability:</u>			
Actuarial Present Value of Benefits:			
Active members			
– service retirement	\$559,454,308	\$475,947,166	\$428,137,351
– disability retirement	15,439,840	10,240,443	9,713,552
– death before retirement	7,304,944	5,225,672	5,054,071
– termination	1,937,598	1,857,528	1,840,395
– total	584,136,690	493,270,809	444,745,369
Inactive members	726,803	699,080	908,215
Annuitants	<u>211,807,671</u>	<u>208,594,713</u>	<u>186,744,027</u>
Total	\$796,671,164	\$702,564,602	\$632,397,611



D. ACTUARIAL VALUATION RESULTS

	December 31, 2005		December 31, 2003
	After Changes	Before Changes	
Ultimate Contribution Rate	33.75%	33.75%	33.75%
Normal Cost Rate	29.810%	30.819%	30.903%
Available to Amortize the Unfunded Actuarial Accrued Liability			
– Percent of payroll	3.940%	2.931%	2.847%
– Dollars	\$2,595,885	\$1,760,524	\$1,592,588
Valuation Payroll	\$65,885,401	\$60,065,653	\$55,939,162
Amortization Period in Years	115.9	19.1	33.4

# AUSTIN FIRE FIGHTERS RELIEF AND RETIREMENT FUND

## SECTION III

### GASB 25 AND 27 REPORTING

#### A. DISCLOSURE OF PENSION INFORMATION

Actuarial calculations under Statement No. 25 of the Governmental Accounting Standards Board (GASB 25) are for purposes of providing the required supplementary information to the financial statement of the plan. Actuarial calculations under Statement No. 27 of the Governmental Accounting Standards Board (GASB 27) are for purposes of providing the required supplementary information and the notes to the financial statement of the City. The calculations and disclosures reported in this section have been made on a basis consistent with our understanding of GASB 25 and GASB 27. However, adjustment for differences between the plan year and the City's fiscal year have not been made.

Beginning with the fiscal year ended December 31, 1996, the Fund has elected to prepare the plan's financial statements in accordance with GASB 25, which supersedes GASB 5 for the plan's financial reporting. The City has elected to prepare financial statements in accordance with GASB 27, which supersedes GASB 5 for the employer's financial reporting.

#### B. SCHEDULE OF FUNDING PROGRESS

	Actuarial Valuation Date		
	<u>December 31, 2005</u>	<u>December 31, 2003</u>	<u>December 31, 2001</u>
1. Actuarial Value of Assets	\$493,567,055	\$421,136,248	\$395,370,550
2. Actuarial Accrued Liability	\$580,053,954	\$452,668,849	\$406,266,265
3. Unfunded AAL: (2)-(1)	\$86,486,899	\$31,532,601	\$10,895,715
4. Funded Ratio: (1)/(2)	85.1%	93.0%	97.3%
5. Covered Payroll*	\$65,885,401	\$55,939,162	\$49,725,974
6. UAAL as Percentage of Covered Payroll: (3)/(5)	131.3%	56.4%	21.9%

\* Valuation payroll

C. SCHEDULE OF EMPLOYER CONTRIBUTIONS

	Year Ended December 31		
	2006	2004 & 2005	2002 & 2003
	December 31, 2005	December 31, 2003	December 31, 2001
1. Actuarial Valuation Date			
2. Annual Required Contribution (ARC)			
a. Employer's Normal Cost (Percentage of Covered Payroll)	14.110%	15.203%	16.848%
b. UAAL	\$86,486,899	\$31,532,601	\$10,895,715
c. Amortization of UAAL	\$4,376,293	\$1,592,588	\$597,706
d. Amortization of UAAL (Percentage of Covered Payroll)	6.642%	2.847%	1.202%
e. ARC (Percentage of Covered Payroll): (a)+(d)*	20.752%	18.050%	18.050%

\* After the end of the year, the dollar amount of the ARC will be calculated based on the actual payroll for the fiscal year.

D. NOTES TO TREND DATA

	Year Ended December 31		
	2006	2004 & 2005	2002 & 2003
1. Actuarial Cost Method	Entry Age	Entry Age	Entry Age
2. Amortization Method	Level Percent Open	Level Percent Open	Level Percent Open
3. Remaining Amortization Period (Years)	30.00	33.36	26.55
4. Asset Valuation Method	5-year smoothed market	5-year smoothed market	5-year smoothed market
5. Actuarial Assumptions:			
Investment Rate of Return*	7.75%	8.0%	8.0%
Projected Salary Increases*	8.0%	6.0%	6.5%
*Includes Inflation at	3.15%	4.5%	5.0%
Payroll Growth Rate	5.0%	4.5%	5.0%

# AUSTIN FIRE FIGHTERS RELIEF AND RETIREMENT FUND

## APPENDIX A

### SUMMARY OF PLAN PROVISIONS

Effective Date:	During the 45 <sup>th</sup> Legislature of the State of Texas in 1937.
Most Recent Amendment:	Effective September 1, 2001 by the 77 <sup>th</sup> Legislature in 2001. The members voted to increase the firefighters' contribution rate effective June 2003.
Employees Included:	Regular, permanent commissioned firefighters with at least 6 months of service, employed pursuant to the Firemen's and Policemen's Civil Service Statute.
Years of Service:	Period when a member makes the required contributions.
Compensation:	Base pay and longevity pay only. Excludes overtime, pay for higher classification, educational incentive, assignment pay, Christmas Day bonus and other allowances for automobile, clothing, sick leave or vacation.

### SERVICE RETIREMENT BENEFITS

Service Retirement Eligibility:	First day of any month following attainment of: <ul style="list-style-type: none"><li>- 25 years of service, or</li><li>- age 50 and 10 years of service</li></ul>
Standard Service Retirement Benefit:	Monthly annuity payable for life equal to 3.3% of average monthly salary times years of service, but not less than \$1,200. Average monthly salary is the monthly average of compensation for the 36 months of service when compensation is the highest.
Early Service Retirement Eligibility:	First day of any month following attainment of age 45 and 10 years of service or at least 20 years of service.

Early Service Retirement Benefit:

The benefit is the same as that for Normal Retirement except that no COLAs are applied to the benefit until after Normal Retirement Date.

### DISABILITY RETIREMENT BENEFITS

Disability Retirement Eligibility:

In first 2½ years of disability, unable to perform firefighter duties. After 2½ years unable to be gainfully employed.

Disability Retirement Benefit:

Unreduced accrued benefit based on the greater of years of service at disability or 20 years.

### DEATH BENEFITS

Surviving Spouse:

Greater of \$1,200 or 75% of member's monthly benefit based on greater of years of service or 20 years.

Dependent Children:

.4950 percent of average monthly salary times greater of years of service or 20 years, payable to age 22. If no surviving spouse, children receive surviving spouse's benefit amount.

Designate Beneficiary of Unmarried Member Who Dies After Retirement or After Eligible to Retire:

75% of member's monthly benefit, actuarially reduced if designated beneficiary is more than 10 years younger than the member.

Minimum:

Return of members' contributions minus retirement or other death benefits paid.

### DEFERRED RETIREMENT OPTION PLAN (DROP)

Eligibility:

A member who is eligible to receive a normal service retirement benefit, or the surviving spouse or dependent children of a deceased member who was eligible to receive a normal service retirement benefit.

Credit to DROP Account:

Each month an amount equal to the retirement annuity that the member would have received under normal service retirement along with member's contribution will be credited to the Account. Interest is credited on the Account at 5% per year.

The retirement annuity will be adjusted as a result of any increase in the formula used to compute retirement annuity that occurs after the effective date of participating in the DROP, and by any cost-of-living adjustment.

Distribution:

On leaving active service on a date not later than the seventh anniversary of the effective date of the DROP, a member shall begin to receive the amount credited to the DROP account either in a single payment or in not more than four payments.

#### VESTED BENEFITS AFTER TERMINATION OF EMPLOYMENT

Deferred retirement benefit with 10 or more years of service, forfeitable if contributions with interest are withdrawn before retirement.

#### WITHDRAWAL BENEFITS

Refund of members' contributions with interest. Withdrawal cancels membership and forfeits all other benefits.

#### CONTRIBUTIONS

Members:

15.70% of biweekly base pay and longevity pay. Interest is credited on members' contributions at 5% per year.

City:

18.05% of biweekly base pay and longevity pay.

## CHANGES IN PLAN PROVISIONS

Since the December 31, 2003 actuarial valuation was completed, there have been no changes in plan features.

# AUSTIN FIRE FIGHTERS RELIEF AND RETIREMENT FUND

## APPENDIX B

### SUMMARY OF ASSETS

#### A. SOURCE OF INFORMATION

Towers Perrin used the preliminary report of audited plan asset data provided by Austin Fire Fighters.

#### B. VALUES

	<u>December 31, 2005</u>	<u>December 31, 2003</u>
Market Value of Plan Assets	\$492,639,553	\$407,285,578
Market Value of Plan Assets Excluding Corporate Stocks – Small Business	\$491,754,906	\$405,606,689
Actuarial Value of Plan Assets	\$493,567,055	\$421,136,248

The actuarial value of assets is a smoothed value that recognizes only 20% of outstanding investment gains and losses. As of December 31, 2005 the market value of assets was \$1.8 million less than the actuarial value. Unless the market value earns more than 8% over the next few years (on the average), unrecognized investment losses will gradually be reflected in the actuarial value of assets and the funded ratio may decrease.



C. SUMMARY OF ASSETS BY INVESTMENT FUND (UNAUDITED)

	<u>Market Value</u>
<b>ASSETS</b>	
Investments, at fair value:	
Corporate stocks	\$221,742,673
International mutual funds	34,419,078
Domestic mutual fund	102,834,101
Index funds	<u>125,348,594</u>
	\$484,344,446
Cash and cash equivalents	7,460,419
Receivables	
Due from broker	1,313,361
Investment interest and dividends receivable	242,752
Corporate Stocks – Small Business	884,647
Property and equipment, net	<u>333,678</u>
Total assets	<u>\$494,579,303</u>
<b>LIABILITIES</b>	
Due to broker	1,519,317
Accounts payable	<u>420,433</u>
Total Liabilities	<u>1,939,750</u>
Net Assets	
(Assets minus Liabilities)	\$492,639,553
Net Assets excluding Corporate Stocks – Small Business	\$491,754,906

D. DEVELOPMENT OF ACTUARIAL VALUE OF PLAN ASSETS

**December 31, 2004 Actuarial Value**

1.	Actuarial value of plan assets, December 31, 2003	\$421,136,248
2.	Contributions	19,532,948
3.	Benefits and refunds paid	17,836,677
4.	Expected investment return at 8%	33,757,446
5.	Expected value of plan assets, December 31, 2004: (1)+(2)-(3)+(4)	456,589,965
6.	Market value of plan assets (excluding Corporate Stocks – Small Business), December 31, 2004	453,494,152
7.	Difference: (6)-(5)	(3,095,813)
8.	Adjustment to expected value: 20% x (7)	(619,163)
9.	Preliminary actuarial value of plan assets, December 31, 2004: (5)+(8)	455,970,802
10.	Maximum actuarial value corridor: (6) x 120%	544,192,982
11.	Minimum actuarial value corridor: (6) x 80%	362,795,322
12.	Actuarial value of plan assets, December 31, 2004: (9), not greater than (10), not less than (11)	455,970,802

**December 31, 2005 Actuarial Value**

1.	Actuarial value of plan assets, December 31, 2004	\$455,970,802
2.	Contributions	20,098,091
3.	Benefits and refunds paid	18,585,793
4.	Expected investment return at 8%	36,536,992
5.	Expected value of plan assets, December 31, 2005: (1)+(2)-(3)+(4)	494,020,092
6.	Market value of plan assets (excluding Corporate Stocks – Small Business), December 31, 2005	491,754,906
7.	Difference: (6)-(5)	(2,265,186)
8.	Adjustment to expected value: 20% x (7)	(453,037)
9.	Preliminary actuarial value of plan assets, December 31, 2005: (5)+(8)	493,567,055
10.	Maximum actuarial value corridor: (6) x 120%	590,105,887
11.	Minimum actuarial value corridor: (6) x 80%	393,403,925
12.	Actuarial value of plan assets, December 31, 2005: (9), not greater than (10), not less than (11)	493,567,055

# AUSTIN FIRE FIGHTERS RELIEF AND RETIREMENT FUND

## APPENDIX C

### SUMMARY OF MEMBER DATA

#### A. MEMBER DATA AS OF DECEMBER 31, 2005

The employee data provided to Towers Perrin by Austin Fire Fighters Fund was reviewed for reasonableness but no attempt was made to audit the data. All actuarial computations performed by Towers Perrin are directly dependent on the accuracy and completeness of the information provided.

Member data collected as of December 31, 2005 has been used as the basis for performing this valuation.

Section B contains a summary of currently contributing members used in the current valuation. The summary is based on age last birthday and completed years of service as of December 31, 2005, and reported payroll annualized for members with less than one year of membership. Note that those members who received their first payment on December 31, 2005 have been included with other annuitants.

Section C contains a summary of annuitant data used in the current valuation. The annuitant summary is based on annual benefits payable on December 31, 2005, and age on last birthday.

B. SUMMARY DATA ON CONTRIBUTING AND INACTIVE MEMBERS

	<u>December 31, 2005</u>	<u>December 31, 2003</u>
<u>Active Members</u>		
Number Contributing	989	967
Average Annual Salary	\$59,545	\$55,656
Annualized Reported Payroll	\$58,889,565	\$53,819,262
Average Years of Service Credit	13.4	12.6
Average Age	40.4	39.4
<u>Inactive Members</u>		
	3	5
<u>Annuitants</u>		
Retirees	326	304
Disabled	17	17
Spouses	63	62
Children	1	2
QDRO	<u>14</u>	<u>10</u>
	421	395

The following table shows additional detail for currently contributing members.



C. ANNUITANT BENEFITS AS OF DECEMBER 31, 2005

<u>Type of Annuity</u>	<u>Number of Accounts</u>	<u>Monthly Payment</u>
Service Retirements	326	\$1,299,899
Disability Retirements	17	47,353
Spouses	63	148,087
Children	1	473
QDRO	<u>14</u>	<u>18,936</u>
Total	421	\$1,514,748

# AUSTIN FIRE FIGHTERS RELIEF AND RETIREMENT FUND

## APPENDIX D

### SUMMARY OF ACTUARIAL ASSUMPTIONS

#### Actuarial Assumptions

Interest Rate:	7.75% per year, compounded annually net of expenses.
Salary Increases:	Salary increase rates include the 9% average across-the-board wage increases effective January 8, 2006 and the 5.5% increases effective January 7, 2007 and October 28, 2007 and 5.0% annual across-the-board increases thereafter, plus increases (averaging 3.0%) for promotion, longevity and step increases. See sample rates.
Payroll Growth:	5.0% per year, compounded annually consisting of aggregate increases and no growth in membership.
Cost-of-Living Increases:	1.0% annually.
Mortality:	
Active and Annuitants:	RP2000 Mortality Table (Combined Healthy, with Blue Collar Adjustment, Projected to 2015).
Disabled:	85% of the 1965 Railroad Retirement Board Disabled Annuitants Mortality Table (ultimate rates).
Rates of Disablement:	See sample rates.
Withdrawal of Membership:	Refund of contributions with interest is assumed for members that withdraw prior to their early retirement date. See sample rates.
Rates of Retirement and DROP Election:	All members are assumed to retire and elect a

DROP according to the following rates:

<u>Years After Firefighter Was First Eligible to Retire*</u>	<u>Percentage of Active Firefighters Who Retire at that Point</u>	<u>DROP Period Elected</u>
0	4%	None
1	0%	
2	0%	
3	0%	
4	4%	30% Elect No DROP, 30% Elect 3 Years & 40% Elect 4 Years
5	8%	30% Elect No DROP, 30% Elect 3 Years & 40% Elect 5 Years
6	12%	30% Elect No DROP, 30% Elect 3 Years & 40% Elect 6 Years
7	15%	30% Elect No DROP, 30% Elect 3 Years & 40% Elect 7 Years
8	15%	30% Elect No DROP, 30% Elect 3 Years & 40% Elect 7 Years
9	20%	30% Elect No DROP, 30% Elect 3 Years & 40% Elect 7 Years
10	20%	30% Elect No DROP, 30% Elect 3 Years & 40% Elect 7 Years
11	25%	30% Elect No DROP, 30% Elect 3 Years & 40% Elect 7 Years
12	25%	30% Elect No DROP, 30% Elect 3 Years & 40% Elect 7 Years
13	50%	30% Elect No DROP, 30% Elect 3 Years & 40% Elect 7 Years
14	50%	30% Elect No DROP, 30% Elect 3 Years & 40% Elect 7 Years
15	100%	30% Elect No DROP, 30% Elect 3 Years & 40% Elect 7 Years

\* Earlier of: (a) Age 45 with 10 Years of Service, or (b) 20 Years of Service (any age)

Credited Service: Assumed one year earned in each future year employed.

Missing Data: Reported data assumed to be complete.

Percent with survivor benefits:

Percent with surviving spouse or designated beneficiary: 100%

Percent with dependent children: 50%

Sample Rates

Disability Rates per 1,000 Members:

<u>Age</u>	<u>Member Becoming Disabled</u>
20	0.14
25	0.19
30	0.31
35	0.52
40	0.92
45	2.09
50	3.79
55	4.90
60	9.11
62 and later	0.00

Withdrawal Rates per 1,000 Members:



<u>Years of Service</u>	<u>Members Withdrawing</u>
0	14
5	9
10	8
15	3
20	0
25	0
30	0
35	0
40	0

Salary Scale:

<u>Years of Service</u>	<u>Ratio of Expected Salary to Beginning Salary</u>	<u>Expected One-Year Increase in Salary</u>
0	1.0000	7.01%
5	1.6189	8.25%
10	2.3667	6.05%
15	3.4127	9.09%
20	4.9061	8.04%
25	6.6238	5.00%
30	8.4538	5.00%
35	10.7895	5.00%
40	13.7704	5.00%

#### Changes in Actuarial Assumptions

The following actuarial assumptions were changed:

- The retirement and DROP assumptions were changed to rates showing that members were retiring later and electing fewer DROPs compared to the current assumptions.
- Mortality table for healthy members, retirees and beneficiaries was changed from the 1994 Group Annuity Mortality Table to the RP 2000 Mortality Table (Combined Healthy, with Blue Collar Adjustment, Projected to 2015).
- The across-the-board component of the salary increase assumption was changed to reflect the 9% increase effective January 8, 2006 and the 5.5% increases effective January 7, 2007 and October 28, 2007 with a 5% assumed annual across-the-board increase thereafter.
- The promotion/longevity/step component of the salary increase assumption was changed to a table based on service that produces an average promotion/longevity/step increase of 3.0% per year.
- The assumed payroll growth rate was increased to 5% annually.
- The funding interest rate was changed to 7.75% per year.

## AUSTIN FIRE FIGHTERS RELIEF AND RETIREMENT FUND

### APPENDIX E

#### DESCRIPTION OF ACTUARIAL METHODS AND PROCEDURES

##### A. ACTUARIAL COST METHOD — NORMAL COST AND ACTUARIAL ACCRUED LIABILITY

The method used to determine the normal cost and actuarial accrued liability is the entry age actuarial cost method, described below:

Entry age is determined as the member's age on the valuation date minus years of service credit as of the valuation date.

On the actuarial valuation date, the actuarial present values of projected benefits and valuation earnings for each active employee included in the actuarial valuation whose attained age is less than the assumed latest retirement age are determined at the individual's entry age. For each such individual, the individual normal cost is the actuarial present value of projected benefits at entry age, divided by the actuarial present value of valuation earnings at entry age, multiplied by the individual's valuation earnings for the valuation year. The sum of all individual normal costs is the normal cost for the valuation year.

The excess on the actuarial valuation date of the actuarial present value of projected benefits for all individuals included in the actuarial valuation over the sum of the actuarial present values of future individual normal costs is the actuarial accrued liability. The excess of the actuarial accrued liability over the actuarial value of plan assets, if any, is the unfunded actuarial accrued liability. The excess of the actuarial value of plan assets over the actuarial accrued liability, if any, is the overfunded actuarial accrued liability.

The actuarial gain (loss) is a measure of the difference between actual experience and that expected based upon the actuarial assumptions between two actuarial valuation dates. Under this actuarial cost method, the actuarial gains (losses) are directly calculated and reduce (increase) the unfunded actuarial accrued liability, if such liability exists.

Adjustments to the unfunded actuarial accrued liability can result from changes in actuarial assumptions and plan provisions. Such adjustments are determined by calculating, as of the actuarial valuation date, the increase or decrease in the unfunded actuarial accrued liability resulting from the change.

B. CALCULATION OF ACTUARIAL VALUE OF PLAN ASSETS

The actuarial value of plan assets is based on the following:

Roll forward prior year's actuarial value with contributions, disbursements and expected return on investments, plus 20% of difference between that "expected value" and current market value. The actuarial asset value must be within 20% of market value plus contributions receivable. The market value used for this calculation excludes "Corporate Stocks – Small Business."

C. OTHER ACTUARIAL VALUATION PROCEDURES

No provision was made in this actuarial valuation for the limitations of Internal Revenue Code Section 415.

Valuation payroll (earnings applied to the current valuation year) is the expected payroll for the current valuation year. It is based on reported payroll for the prior calendar year, annualized for those with less than 12 months pay, and projected according to the actuarial assumptions to the current valuation year.

D. CHANGES IN ACTUARIAL METHODS AND PROCEDURES

There have been no changes in the actuarial cost method since the prior valuation.

# AUSTIN FIRE FIGHTERS RELIEF AND RETIREMENT FUND

## APPENDIX F

### ACTUARIAL METHODOLOGY AND PENSION TERMINOLOGY

#### A. ACTUARIAL METHODOLOGY

This section summarizes the conceptual methodology used in preparing the Actuarial Balance Sheet in this valuation.

##### Actuarial Methodology

The actuarial valuation of a defined benefit plan is comprised of two separate processes.

First, the actuarial present value, as of the actuarial valuation date, of both current and projected benefits to be paid under the plan is determined. In determining the actuarial present value of these benefits, actuarial assumptions must be made as to the number of members eventually receiving benefits, the amount of benefits to be paid, and the portion of the benefit obligation to be covered by future investment earnings.

Second, the financing of these benefit obligations on an advance basis is established. An actuarial cost method is applied to determine the Actuarial Accrued Liability, which is the amount of the eventual cost that has accrued as of the actuarial valuation date. The actuarial cost method also establishes the Normal Cost, which is the rate at which future costs will accrue annually after the actuarial valuation date.

##### Actuarial Assumptions

The true cost of a member's pension benefit is not known until the final benefit payment has been made. Consequently, the exact cost of plan benefits for the current employee group will not be determinable for 50 to 75 years. Since provision for this cost must be made prior to the exact determination, a model is established that will estimate the future cost of plan benefits. The model utilizes parameters which require assumptions as to the future occurrences of various events affecting the demographic profile of the employee group and the assets of the pension fund. Such actuarial assumptions include death, retirement, termination, disability, salary increases and investment return. Current and long-term economic factors, the nature of the covered workforce, and significant features of the plan must be considered in the selection of a set of actuarial assumptions to assure the reasonableness of the results predicted by the actuarial assumptions.

While care is taken in the selection of actuarial assumptions, actual experience is expected to deviate from these actuarial assumptions over the short term. The suitability of the actuarial assumptions is measured by how closely the experience of the plan, on a long-term basis, conforms to projected results. Deviations from projected results are called actuarial gains and losses. Periodic actuarial valuations will measure the extent of these gains and losses as of an actuarial valuation date. If either actuarial gains or losses predominate, then it is possible that one or more of the actuarial assumptions is no longer appropriate. Thus, actuarial assumptions must be continually monitored for reasonableness and subsequent cost estimates may be modified accordingly. While individual actuarial assumptions are intended to be representative, it is the aggregate effect of all actuarial assumptions working together that determines their appropriateness.

### Actuarial Liabilities

Actuarial liabilities include the actuarial present value of all future benefits and expenses. To determine the actuarial present value of all future benefits, the probability of future events which establish benefit payments is forecast utilizing the actuarial assumptions. The plan provisions and current employee data are used to forecast the amount of benefits to be paid. Actuarial assumptions for survival among retired members are used to estimate the duration of these benefit payments. Each probable benefit payment is then discounted to the actuarial valuation date using the actuarial assumption for investment return. These discounted payments are then summed to arrive at the total actuarial present value of benefits.

### Assets

The assets at any time are equal to the sum of present assets in the pension fund plus future assets. Future assets will result from future contributions and future investment return on all assets.

### Actuarial Balance Sheet

The actuarial balance sheet of a retirement plan displays the fundamental financial status of the plan on the actuarial valuation date. As stated previously, the actuarial liabilities are the sum of the actuarial present value of all future projected benefit payments to current active and inactive plan members. Current assets in the pension fund plus the actuarial present value of future contributions comprise the total assets of the plan.

## Actuarial Cost Method

To determine the funding requirements of the plan, it is necessary to adopt an actuarial cost method. The choice of the actuarial cost method does not affect the actuarial balance sheet financial status, which is a function only of the plan provisions, actuarial assumptions, employee data and assets. However, the actuarial cost method has a direct impact on the incidence of the funding requirements. The actuarial cost method allocates the actuarial present value of future employer contributions between the past and future, and thus establishes the Unfunded Actuarial Accrued Liability and Normal Cost, respectively.

The funding requirements for each plan year equal the Normal Cost for that year plus an amortization payment in respect of the Unfunded Actuarial Accrued Liability.

## B. PENSION TERMINOLOGY

The following terms are defined in accordance with standard pension terminology adopted by the actuarial profession.

### Accumulated Plan Benefit

The amount of an individual's benefit (whether or not vested) as of a specified date, determined in accordance with the terms of a pension plan and based on compensation (if applicable) and service to that date.

### Actuarial Accrued Liability

That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.

### Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement, and retirement; changes in compensation and Social Security benefits; rates of investment earnings and asset appreciation or depreciation; and other relevant items.

### Actuarial Gain (Loss)

A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.

### Actuarial Present Value

The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions.

### Actuarial Value of Plan Assets

The value of cash, investments and other property belonging to a pension plan, as used by the actuary for the purpose of an Actuarial Valuation.

### Actuarial Valuation

The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.

### Actuarially Equivalent

Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.

### Amortization Payment

That portion of the pension plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

### Normal Cost

That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

### Projected Benefits

Those pension plan benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits.

### Unfunded Actuarial Accrued Liability

The Excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.

## C. ACCOUNTING TERMINOLOGY

The following terms are defined in accordance with accounting profession terminology.

### Accumulated Benefit Obligation

The Actuarial Present Value of benefits (whether vested or nonvested) attributed by the pension benefit formula to employee service rendered before a specified date and based on employee service and compensation (if applicable) prior to that date.

### Actuarially Determined Contribution Requirements

Amounts required to be paid annually to a pension fund, based on an Actuarial Cost Method.

### Discount Rate

The interest rate used to adjust for the time value of money.

### Pension Benefit Obligation

The Actuarial Present Value of credited Projected Benefits, prorated on service, and discounted at a rate equal to the expected return on present and future plan assets.