

# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

**Valuation as of January 1, 2012**

**July 2, 2012**

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# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

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## **Section I - Report Text**

# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

## Valuation as of January 1, 2012

### 1. Summary of Valuation Results

This report presents the results of the January 1, 2012 actuarial valuation of the Travis County ESD No. 6 Firefighters' Relief and Retirement Fund. The valuation was made, in part, to determine whether the plan satisfies the portions of Title 8 of the Texas Government Code relevant to the fund. The following table summarizes the 2010 and the 2012 valuation results. The figures on lines d. through f., below, were taken from Exhibit 2 of this report.

	<b>Valuation as of <u>01/01/2010</u></b>	<b>Valuation as of <u>01/01/2012</u></b>
a. Actuarial Value of Assets	\$1,162,285	\$3,469,606
b. Actuarial Present Value of Accumulated Plan Benefits	\$1,170,358	\$1,952,253
c. Accumulated Benefit Funding Ratio (line a. divided by line b.)	99.3 %	177.7 %
d. Unfunded Actuarial Accrued Liability (UAAL)	\$2,947,709	\$2,865,849
e. Annualized Compensation	\$3,717,196	\$4,407,618
f. Amortization Period	9.1 Yrs.	3.2 Yrs.

Lines a. through c. in the above table compare the actuarial value of assets with the sum of the values of retirement, death, disability, and termination benefits which members had accumulated as of the valuation date. The values of accumulated benefits were calculated using the same actuarial assumptions as were used for the valuation. The ratio on line c. shows that as of January 1, 2012, fund assets were 177.7 percent of the value of

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accumulated benefits under the plan. This is a measure of funding on an ongoing-plan basis.

On a plan termination basis, the present value of accrued retirement benefits was approximately \$1,903,250. This produces a funding ratio of 182.3 percent. The accrued benefit funding ratio is higher than the ratio on page one due primarily to the different actuarial assumptions used for the purpose of calculating actuarially equivalent benefits. More important than funding ratios, however, is the plan's amortization period.

Lines d. through f., above, summarize the valuation of the fund under the actuarial cost method, which looks at the progress in funding both current and future benefits.

Guidelines published by the Texas Pension Review Board specify that the amortization period should not exceed 40 years, with a 15- to 25-year period being preferable. (PRB Guidelines are set out in full on Appendix D.) The amortization period as of January 1, 2012, was 3.2 years. Thus, the plan meets Pension Review Board amortization period guidelines.

### **2. Discussion of Valuation Results**

The amortization period as of January 1, 2010, was 9.1 years. If all of the prior valuation's assumptions had been realized exactly, the amortization period as of January 1, 2012, would have decreased to 7.1 years due to the passage of time. The amortization period as of January 1, 2012, however, was 7.5 years using the 2010 actuarial assumptions and methods. The amortization period was slightly greater than expected due to the rate of return on the actuarial value of assets, which was lower than assumed, individual pay increases which were greater than assumed, and the growth in total payroll, which was less than assumed. The plan's amortization period also rose due to the decrease in the number of fire fighters covered by the plan.

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## **Valuation as of January 1, 2012**

### Changes in Actuarial Assumptions

For the 2012 valuation, the assumed member contribution rate was increased to 18.20 percent of pay. Effective January 1, 2012, the member contribution rate to the plan increased to 18.20 percent of pay. The member contribution rate assumed for the 2010 valuation was 12.00 percent of pay.

The assumed contribution rate for the Travis County Emergency Services District No. 6 was changed to 17.20 percent of pay. Effective January 1, 2012, the District's contribution rate to the plan increased to 18.20 percent of pay. The assumed District contribution rate in the 2010 valuation was 11.00 percent of pay.

The changes in assumed contribution rates lowered the amortization period to 3.2 years.

The mortality table used for the valuation was changed to employee and healthy annuitant combined rates from the RP-2000 Mortality Table, projected to 2015 using Scale AA, with separate rates for males and females. The mortality table used for the 2010 valuation was the RP-2000 Mortality Table, projected to 2010. The change was made in order to recognize mortality improvement through the valuation date, provide a margin for future mortality improvement, and to most accurately reflect anticipated plan experience. The revision of the mortality table did not change the amortization period.

### **3. Fund Experience with Respect to Major Actuarial Assumptions**

As part of the valuation, a study was made of the plan's experience with respect to rate of return. Salary increases—on an individual as well as on an aggregate basis—were also studied. The valuation was based upon an assumed rate of return of 7.00 percent per annum. Individual salaries were assumed to increase 5.50 percent per year. Total payroll was assumed to increase 4.00 percent per year.

# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

## **Valuation as of January 1, 2012**

Exhibit 4 of this report shows a graph which summarizes the fund's rate of return measured at market value. This exhibit also shows the average rates of return for the 34 full-time fire departments in the TLFFRA system which operate on a calendar-year basis.

Using the market value of assets, the Travis Co. ESD No. 6 fund's approximate annual rates of return for the years ending December 31, 2008, through 2011, were -28.3%, 8.6%, 8.4%, and -1.5%, respectively.

Exhibit 5 of this report shows the fund's rates of return measured at actuarial value. The average rate of return on the actuarial value of assets over the last two years was 5.6%.

Exhibit 6 shows plan experience with respect to annual pay increases. Members with at least two full years of service averaged approximately 11.9 percent per year over the last two years. These rates include raises from all sources, including overtime, inflation, longevity, merit, and promotion. The annual change in gross aggregate payroll was -1.3 percent over the last two years, when adjusted for the decrease in the number of covered members. Aggregate payroll affects how much money the fund receives in contributions each year. The number of active fire fighters covered under the plan decreased from 63 as of January 1, 2010, to 59 as of January 1, 2012.

The actuaries believe that the results on Exhibits 4 through 6 show that the assumptions used for the valuation fall within the range necessary to satisfy the best-estimate criterion both on an aggregate and on an individual basis.

Exhibit 7 shows a comparison of the plan's expected and actual unfunded actuarial accrued liability based on the 2010 and 2012 valuations. This type of calculation is called an "actuarial gain and loss analysis." The calculation measures the effect of plan experience under all assumptions, combined.

# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

## **Valuation as of January 1, 2012**

The last column of Exhibit 7 develops the projected actuarial accrued liability as of January 1, 2014. Next, this value is compared with the expected actuarial value of assets in order to calculate the projected amortization period. As of January 1, 2014, the projected amortization period runs from 1.3 years to 2.1 years.

The projected amortization period range is based on the assumption that the market value of plan assets grows at 7.00 percent per year after January 1, 2012. There is no recognition in the projections of any "rebound" in the financial markets after January 1, 2012.

It should be noted that demographic experience less favorable than assumed, a decrease in the number of covered fire fighters, or lower-than-assumed return on plan assets could result in an amortization period which is above the range projected.

### **4. Notes Concerning the Valuation and the Amortization Period**

It should be noted that valuation calculations measure plan soundness under the assumption that retirements, deaths, disabilities and terminations will occur approximately in accordance with assumed rates. A sudden increase in the number of benefits being paid is not taken into account by the valuation calculations.

Amortization periods in this report are given to the nearest tenth of a year. The report does not intend to imply that the actuarial assumptions and the valuation calculations are capable of measuring the amortization period that closely. The periods are given to the nearest tenth of a year in order to provide as much information as possible when results at different valuation dates or results under different actuarial assumptions are compared with one another.



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## **5. Actuarial Certification**

Section 802.101 of the Texas Government Code requires that the governing body of a public retirement system employ an actuary to make a valuation of the assets and liabilities of the system at least once every three years. The valuation must be performed on the basis of assumptions which are realistic and reasonable and should comply with applicable actuarial standards. The allocation of the normal cost portion of contributions should be level or declining as a percent of payroll over all generations of taxpayers and should be calculated under applicable actuarial standards.

The valuation detailed in this report meets the State of Texas standards listed above. Guidelines published by the Texas State Pension Review Board specify that the amortization period of the unfunded actuarial accrued liability should not exceed 40 years, with a 15- to 25-year period being preferable. (PRB Guidelines are set out in full on Appendix D.) The amortization period of the Travis County ESD No. 6 Firefighters' Relief and Retirement Fund as of January 1, 2012, was 3.2 years, and the fund's valuation satisfies PRB Guidelines with respect to actuarial methods and assumptions. Therefore, the plan meets Pension Review Board Guidelines.

The valuation was performed using employee census data as of January 1, 2012, furnished by the Travis County ESD No. 6 Firefighters' Relief and Retirement Fund and by the District. Financial information came from the plan's December 31, 2008 through 2011 audited financial statements, prepared by Montemayor Hill & Company, P.C., Certified Public Accountants. As of the date the valuation was published, the 2011 financial statements were still deemed preliminary. A review of all data supplied showed that the information was reasonable, consistent, and complete. Accordingly, the information was relied upon as furnished. The actuaries added the \$245,070 partial refund of FICA taxes, which the District received in 2012 and paid into the trust fund, to the December 31, 2011 value shown on the preliminary financial statements.

# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

## **Valuation as of January 1, 2012**

The firm of John M. Crider, Jr. – Consulting Actuary, which prepared the January 1, 2012 valuation, is compensated solely by the Travis County ESD No. 6 Firefighters' Relief and Retirement Fund with respect to work on the plan. This report has been prepared and certified by John M. Crider, Jr., an actuary for the firm of John M. Crider, Jr. – Consulting Actuary, who certifies that he is a member of the American Academy of Actuaries and that he meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. This report has been reviewed by Donna L. Hamaker, an actuary for the firm of Hamaker Consulting, who certifies that she is a member of the American Academy of Actuaries and that she meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

This report presents the actuarial position of the Travis County ESD No. 6 Firefighters' Relief and Retirement Fund as of January 1, 2012. The valuation and associated calculations have been performed in accordance with generally accepted actuarial principles and practices. The valuation conforms to the parameters specified in Governmental Accounting Standards Board (GASB) Statements No. 25, No. 27, and No. 50 for financial reporting by the fund and by the District.

Exhibits 1 and 2 of this report show the results of the valuation. The previous valuation's results are shown for purposes of comparison. The development of the actuarial value of assets is shown on Exhibit 3. Graphs summarizing the fund's rate of return history are provided on Exhibits 4 and 5.

Exhibit 6 documents the fund's experience with respect to salary increases. Exhibit 7 shows the plan's experience with respect to all assumptions, combined, and provides a range in which the amortization period is estimated to fall as of January 1, 2014.

# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

**Valuation as of January 1, 2012**

The disclosures required under GASB Statements No. 25, No. 27, and No. 50 will be furnished in a separate report.

Thank you for the opportunity to serve the Travis County ESD No. 6 Firefighters' Relief and Retirement Fund. Please feel free to contact us if you have any questions about this report.

## **Prepared and Certified By**

original signed by

*John M. Crider, Jr.*

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John M. Crider, Jr.  
Associate of the Society of Actuaries  
Member, American Academy of Actuaries

## **Reviewed By**

original signed by

*Donna L. Hamaker*

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Donna L. Hamaker  
Enrolled Actuary  
Member, American Academy of Actuaries

## **Section II - Exhibits**

# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

Valuation as of January 1, 2012

Exhibit 1, Development of the Normal Cost Percentage

	Valuation as of 01/01/2010	Valuation as of 01/01/2012
Assumed Retirement Age	55	55
Assumed Rate of Return	7.00%	7.00%
Salary Scale	5.50%	5.50%
Increase in Payroll for Amortization	4.00%	4.00%
Assumed Contribution Percentage of Members	12.00%	18.20%
Assumed Contribution Percentage of District	11.00%	17.20%

## 1. Number of Participants

a. Actives below assumed retirement age	63	59
b. Actives at or above assumed retirement age	0	0
c. Service retired	0	0
d. Disability retired	0	0
e. Vested and non-vested terminated	0	0
f. Spouses and alternate payees	0	0
g. Children	0	0
h. Total	63	59

## 2. Annualized Compensation

a. Actives below assumed retirement age	\$ 3,717,196	\$ 4,407,618
b. Average compensation	59,003	74,705

## 3. Annual Retirement Income

a. Actives below assumed retirement age	\$ 5,358,706	\$ 5,779,460
b. Actives at or above assumed retirement age	0	0
c. Service retired	0	0
d. Disability retired	0	0
e. Vested and non-vested terminated	0	0
f. Spouses and alternate payees	0	0
g. Children	0	0
h. Total	\$ 5,358,706	\$ 5,779,460

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# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

Valuation as of January 1, 2012

Exhibit 1, Development of the Normal Cost Percentage (continued)

	Valuation as of 01/01/2010	Valuation as of 01/01/2012
<b>4. Plan Normal Cost</b>		
a. Service retirement	\$ 406,012	\$ 481,576
b. Death in active service	3,309	5,129
c. Disability	10,523	16,724
d. Termination	45,816	73,804
e. Total	\$ 465,660	\$ 577,233
<b>5. Anticipated Employee Contributions</b>	446,064	\$ 802,186
<b>6. Net Employer Normal Cost (4 - 5)</b>	19,596	\$ (224,953)
<b>7. Net Employer Normal Cost, Expressed as a Percentage of Covered Payroll (6 ÷ 2a)</b>	0.53 %	-5.10 %
<b>8. Normal Cost Percentage for Members</b>	12.00 %	18.20 %
<b>9. Total Normal Cost Percentage for the Plan (7) + (8)</b>	12.53 %	13.10 %

# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

Valuation as of January 1, 2012

Exhibit 2, Unfunded Actuarial Accrued Liability and Amortization Period

	Valuation as of 01/01/2010	Valuation as of 01/01/2012
Assumed Retirement Age	55	55
Assumed Rate of Return	7.00%	7.00%
Salary Scale	5.50%	5.50%
Increase in Payroll for Amortization	4.00%	4.00%
Assumed Contribution Percentage of Members	12.00%	18.20%
Assumed Contribution Percentage of District	11.00%	17.20%
<b>1. Present Value of Future Benefits Payable to Individuals Receiving or Due Benefits</b>		
a. Service retired	\$ 0	\$ 0
b. Disability retired	0	0
c. Vested and non-vested terminated	0	0
d. Spouses and alternate payees	0	0
e. Children	0	0
f. Total	\$ 0	\$ 0
<b>2. Present Value of Future Benefits Payable to Active and Overage Members</b>		
a. Service retirement	\$ 10,214,222	\$ 13,385,721
b. Death in active service	72,677	120,514
c. Disability	229,632	392,330
d. Termination	636,600	822,133
e. Total	\$ 11,153,131	\$ 14,720,698
<b>3. Total Present Value of Future Benefits (1f + 2e)</b>	\$ 11,153,131	\$ 14,720,698

# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

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Exhibit 2, Unfunded Actuarial Accrued Liability and Amortization Period  
(continued)

	Valuation as of 01/01/2010	Valuation as of 01/01/2012
<b>4. Actuarial Present Value of Future Normal Cost Contributions By</b>		
a. Present active members	\$ 6,780,489	\$ 11,717,285
b. City	262,648	(3,332,042)
c. Total	\$ 7,043,137	\$ 8,385,243
<b>5. Actuarial Accrued Liability (3 - 4c)</b>	\$ 4,109,994	\$ 6,335,455
<b>6. Actuarial Value of Assets</b>	\$ 1,162,285	\$ 3,469,606
<b>7. Unfunded Actuarial Accrued Liability (5 - 6)</b>	\$ 2,947,709	\$ 2,865,849
<b>8. Total Contributions (% of Payroll)</b>	23.00%	35.40%
<b>9. Normal Cost (% of Payroll)</b>	12.53%	13.10%
<b>10. Percentage of Payroll Available to Fund the Unfunded Actuarial Accrued Liability (8 - 9)</b>	10.47%	22.30%
<b>11. Annualized Compensation</b>	\$ 3,717,196	\$ 4,407,618
<b>12. Amount Available to Amortize the Unfunded Actuarial Accrued Liability (10 × 11)</b>	\$ 389,190	\$ 982,899
<b>13. Years to Amortize the Unfunded Actuarial Accrued Liability Assuming Total Annual Payroll Increases of 4.00% Annually</b>	9.1 Yrs.	3.2 Yrs.



# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

## Valuation as of January 1, 2012

### Exhibit 3, Development of the Actuarial Value of Assets

	12/31/2007	12/31/2008	12/31/2009	12/31/2010	12/31/2011
1. Market Value as of January 1	\$ 0	\$ 0	\$ 417,154	\$ 1,119,993	\$ 2,075,147
2. Contributions, Appreciation, and Interest and Dividends					
a. Contributions by the district	0	244,103	319,795	417,213	794,639
b. Contributions by members	0	244,103	319,795	417,213	502,671
c. Net realized and unrealized appreciation (depreciation)	0	(834)	75,731	141,732	(96,326)
d. Interest and dividends	0	4,909	22,801	46,043	93,759
e. Other	0	126	72	565	3,801
3. Disbursements					
a. Benefits paid	0	0	0	0	0
b. Contributions refunded	0	2,247	0	7,689	42,805
c. Administrative expenses	0	73,006	35,355	59,923	40,843
4. Subtotal of Contributions, Appreciation, Interest and Dividends, and Disbursements	0	417,154	702,839	955,154	1,214,896
5. Market Value as of December 31	0	417,154	1,119,993	2,075,147	3,290,043

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# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

Valuation as of January 1, 2012

Exhibit 3, Development of the Actuarial Value of Assets (continued)

	12/31/2007	12/31/2008	12/31/2009	12/31/2010	12/31/2011
<b>6. Actuarial Investment Gain/(Loss) for the Year</b>					
a. Market Value as of January 1	\$ 0	\$ 0	\$ 417,154	\$ 1,119,993	\$ 2,075,147
b. District and member contributions	0	488,206	639,590	834,426	1,297,310
c. Benefits and contribution refunds	0	2,247	0	7,689	42,805
d. Miscellaneous receipts and disbursements	0	126	72	565	3,801
e. Expected earnings	0	17,009	51,586	107,355	180,724
f. Expected market value of assets December 31	0	503,094	1,108,402	2,054,650	3,514,177
g. Actual market value of assets December 31	0	417,154	1,119,993	2,075,147	3,290,043
h. Actuarial investment gain/(loss)	0	(85,940)	11,591	20,497	(224,134)
<b>7. Phase-in of actuarial investment gains and (losses)</b>					
a. Portion of the year's actuarial investment gain/(loss) which is phased in over five years	20%	20%	20%	20%	20%
b. Line 6.h. times line 7.a.	0	(17,188)	2,318	4,099	(44,827)
c. Factor applied to line 7.b. to calculate the unrecognized amount as of December 31, 2011	0	1	2	3	4

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# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

Valuation as of January 1, 2012

Exhibit 3, Development of the Actuarial Value of Assets (continued)

	12/31/2007	12/31/2008	12/31/2009	12/31/2010	12/31/2011
7. Phase-in of actuarial investment gains and (losses), (continued)					
d. Amount of the year's actuarial investment gain/(loss) for the year which is unrecognized as of December 31, 2011 (Line 7.b. times line 7.c.)	\$ 0	\$ (17,188)	\$ 4,636	\$ 12,297	\$ (179,308)
e. Total unrecognized actuarial gain/(loss) for five prior years as of December 31, 2011 (sum of line 7.d. for five prior years)					(179,563)
8. Market Value at December 31, 2011					3,290,043
9. Actuarial Value of Assets as of January 1, 2012, Before Test for 80% to 120% of Market Value (line 8. minus line 7.e.)					3,469,606
10. Preliminary Actuarial Value of Assets Expressed as a Percentage of Year-end Market Value					105.5%
11. Actuarial Value of Assets After Limiting the Preliminary Actuarial Value of Assets to a Range of 80% to 120% of Market Value		\$ 1,162,285	\$ 2,086,173	\$ 3,469,606	

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# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

Valuation as of January 1, 2012

Exhibit 4, Summary of the Rate of Return on Fund Assets Measured at Market Value

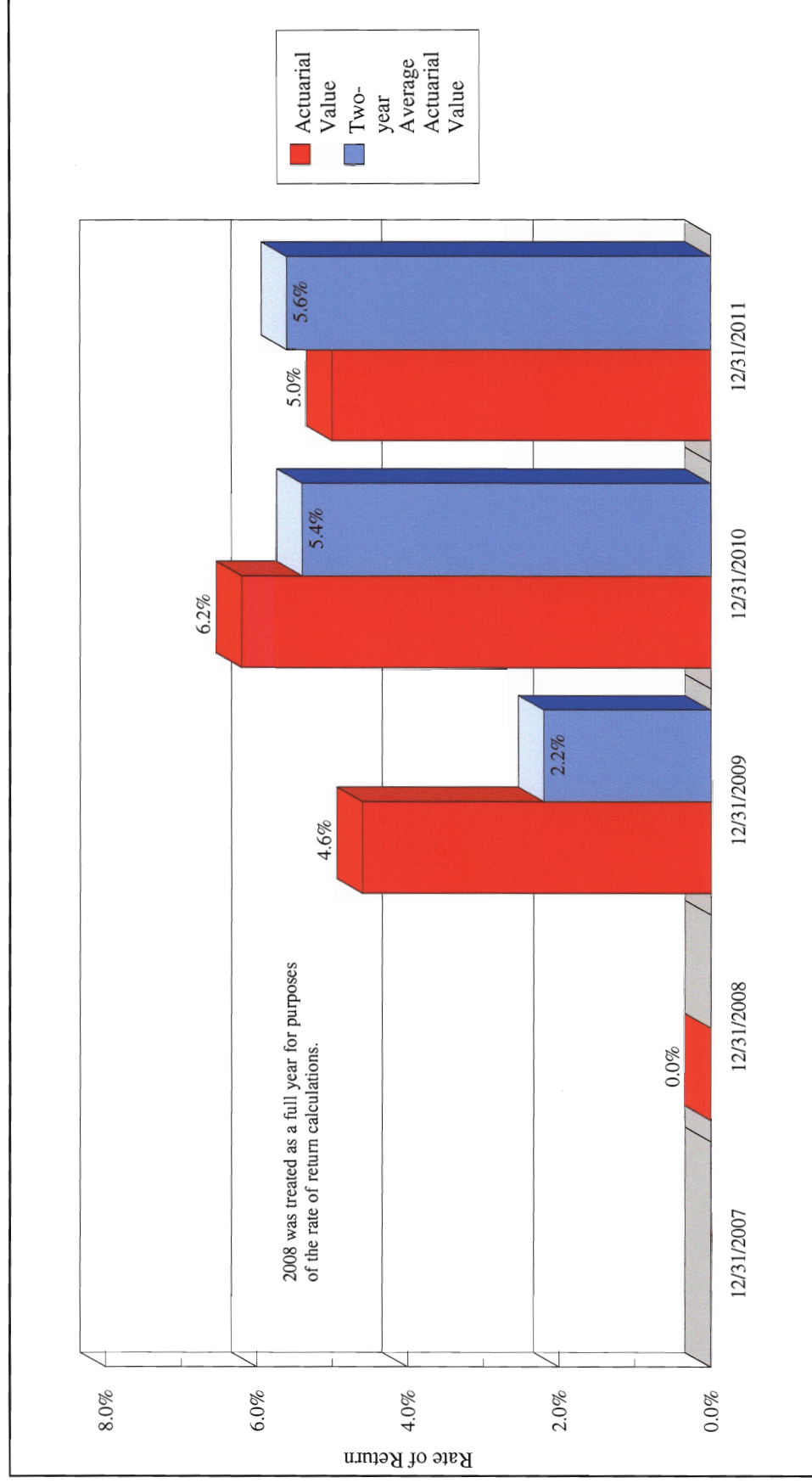


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# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

Valuation as of January 1, 2012

Exhibit 5, Summary of the Rate of Return on Fund Assets Measured at Actuarial Value



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# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

Valuation as of January 1, 2012

Exhibit 6, Average Age at Retirement and Salary Increase Rates

	12/31/2007	12/31/2008	12/31/2009	12/31/2010	12/31/2011
<u>Average Individual Salary Increases</u>					
1. Average Individual Salary Increase Rate Over the Last Year				13.2%	11.1%
2. Average Individual Salary Increase Rate Over the Last Two Years					11.9%
<u>Average Aggregate Salary Increases</u>					
3. Number of Active Members in the Valuation			63		59
4. Average Aggregate Salary Increase Rate Over the Last Two Years Adjusted for Changes in the Number of Plan Members and the Number of Pay Periods					-1.3%

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# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

Valuation as of January 1, 2012

## Exhibit 7, Experience Gain and Loss Analysis

Rate of Return Assumed for Prior Valuation	7.00%	7.00%	Projected
Salary Scale Assumed for Prior Valuation	5.50%	5.50%	7.00%
Increase in Payroll for Amortization Assumed for Prior Valuation	4.00%	4.00%	5.50%
Valuation Date	01/01/2010	01/01/2012	01/01/2014
<b>Expected Actuarial Accrued Liability</b>			
1. Prior valuation Actuarial Accrued Liability (AAL)	\$2,644,708	\$4,109,994	\$6,335,455
2. Prior valuation Normal Cost (NC)	381,031	465,660	577,233
3. Distributions for second prior year	2,247	7,689	44,089
4. Interest on AAL for second prior year	185,130	287,700	443,482
5. Interest on NC for second prior year	26,672	32,596	40,406
6. Interest on distributions for second prior year	79	269	1,543
7. Expected prior year AAL, (1+2-3+4+5-6)	\$3,235,215	\$4,887,992	\$7,350,944
8. Prior valuation NC with salary scale increase	396,272	484,286	600,322
9. Distributions for immediate prior year	0	42,805	45,412
10. Interest on AAL for immediate prior year	226,465	342,159	514,566
11. Interest on NC for immediate prior year	27,739	33,900	42,023
12. Interest on distributions for immediate prior year	0	1,498	1,589
13. Expected AAL as of the valuation date, (7+8-9+10+11-12)	\$3,885,691	\$5,704,034	\$8,460,854
<b>Expected Actuarial Value of Assets</b>			
14. Prior valuation Actuarial Value of Assets (AVA)	\$0	\$1,162,285	\$3,469,606
15. Contributions for second prior year	488,206	834,426	1,560,296
16. Distributions for second prior year	2,247	7,689	44,089
17. Interest on AVA for second prior year	0	81,360	242,872
18. Interest on contributions for second prior year	17,087	29,205	54,610
19. Interest on distributions for second prior year	79	269	1,543
20. Expected prior year AVA, (14+15-16+17+18-19)	502,967	2,099,318	5,281,752
21. Contribution for immediate prior year	639,590	1,297,310	1,622,707
22. Distribution for immediate prior year	0	42,805	45,412
23. Interest on AVA for immediate prior year	35,208	146,952	369,723
24. Interest on contributions for immediate prior year	22,386	45,406	56,795
25. Interest on distributions for immediate prior year	0	1,498	1,589
26. Expected AVA at valuation date (20+21-22+23+24-25)	\$1,200,151	\$3,544,683	\$7,283,976

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# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

## Valuation as of January 1, 2012

### Exhibit 7, Experience Gain and Loss Analysis (continued)

	7.00 %	7.00 %	Projected
Rate of Return Assumed for Prior Valuation	7.00 %	7.00 %	7.00 %
Salary Scale Assumed for Prior Valuation	5.50 %	5.50 %	5.50 %
Increase in Payroll for Amortization Assumed for Prior Valuation	4.00 %	4.00 %	4.00 %
Valuation Date	01/01/2010	01/01/2012	01/01/2014
<b><u>Expected Valuation Results Before Assumption or Method Changes</u></b>			
27. Expected AAL as of the valuation date (line 13)	\$3,885,691	\$5,704,034	\$8,460,854
28. Expected AVA at valuation date (line 26)	<u>1,200,151</u>	<u>3,544,683</u>	<u>7,283,976</u>
29. Expected Unfunded Actuarial Accrued Liability (UAAL), (line 27 minus line 28)	\$2,685,540	\$2,159,351	\$1,176,878
<b><u>Actual Valuation Results Before Assumption or Method Changes</u></b>			
30. Actual AAL before changes	\$4,141,385	\$6,431,678	\$8,460,854
31. AVA before changes	<u>1,162,285</u>	<u>3,469,606</u>	<u>7,163,949</u>
32. Actual UAAL before changes (line 30 minus line 31)	\$2,979,100	\$2,962,072	\$1,296,905
<b><u>Gain/(Loss) on the Unfunded Actuarial Accrued Liability</u></b>			
33. UAAL gain or (loss) since the previous valuation (line 29 minus line 32)	(\$293,560)	(\$802,721)	(\$120,027)
<b><u>Check of Gain/(Loss) Calculation</u></b>			
34. Actuarial Accrued Liability gain/(loss), (line 27 minus line 30)*	(\$255,694)	(\$727,644)	\$0
35. Actuarial Value of Assets gain/(loss), (line 31 minus line 28)	(37,866)	(75,077)	(120,027)
36. AAL gain/(loss) + AVA gain/(loss)	(293,560)	(802,721)	(120,027)
37. Difference (line 33 - line 36)	0	0	0

\* The AAL gain or (loss) is also referred to as the "demographic" gain or (loss).

John M. Crider, Jr. - Consulting Actuary



# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

## Valuation as of January 1, 2012

### Exhibit 7, Experience Gain and Loss Analysis (continued)

Rate of Return Assumed for Prior Valuation	7.00%	Projected
Salary Scale Assumed for Prior Valuation	5.50%	7.00%
Increase in Payroll for Amortization Assumed for Prior Valuation	4.00%	5.50%
Valuation Date	01/01/2010	4.00%
		01/01/2014

### Calculation of the Amortization Period

38. Percentage of payroll available to amortize the UAAL	5.64%	10.51%	22.30%
39. Annualized compensation	3,717,196	4,407,618	4,767,280
40. Amount available to amortize the UAAL	209,650	463,241	1,063,103
41. Years to amortize the UAAL before changes in methods or assumptions	19.5	7.5	1.3
42. Years to amortize the UAAL after changes in methods and/or assumptions	9.1	3.2	-
43. Years to amortize the UAAL after changes in methods, assumptions and plan amendments	-	-	-
	with demographic loss of \$0		1.3
	with demographic loss of \$727,644		2.1

### Notes

The 1.3-year projected amortization period as of January 1, 2014, assumes that there is no demographic loss for the two-year period between the January 1, 2012 and 2014 valuation dates. The 2.1-year projected amortization period as of January 1, 2014, assumes that the demographic loss for the two-year period between the January 1, 2012 and 2014 valuation dates equals \$727,644, the same demographic loss as occurred between the 2010 and 2012 valuations. Please see line 34 of the 2012 column for the 2010 to 2012 demographic loss.

For the purposes of developing the January 1, 2014 projections, the total of benefits and contribution refunds paid for the years ending December 31, 2012, and 2013, was assumed to be 103.0 percent of the prior year amount. Expenses for the years ending in 2010 and 2011 were assumed to be zero because one percent of pay is dedicated to funding plan expenses. The market value rate of return of the trust for the years ending in 2012 and 2013 was assumed to be 7.00 percent. The normal costs for the years ending December 31, 2010, and 2011, were assumed to be 104.00 percent of the prior year's normal cost.

John M. Crider, Jr. - Consulting Actuary

### **Section III - Appendices**

# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

**Valuation as of January 1, 2012**

## **Appendix A, Actuarial Cost Method and Actuarial Value of Assets**

### **Actuarial Cost Method**

The actuarial cost method used in the valuation is the individual entry age normal actuarial cost method. This method is also referred to as the entry age actuarial cost method under the terminology developed by the Joint Committee on Pension Terminology.

The valuation measures the actuarial balance between the present value of future benefits and the sum of (1) the present value of future contributions and (2) the actuarial value of assets. The plan is not subject to the minimum funding requirements of Internal Revenue Code Section 430.

The normal cost for each employee equals the level percentage of pay contribution which, if paid annually from date of employment to date of assumed retirement, would fully fund the member's benefits. The employee's portion of the normal cost equals his or her anticipated employee contributions for the year. The employer normal cost for the year equals the total normal cost for all employees minus the total employee normal cost.

The actuarial accrued liability is developed by subtracting the present value of future normal costs from the present value of future benefits. The unfunded actuarial accrued liability is calculated by subtracting the actuarial value of assets from the actuarial accrued liability.

The actuarial cost method is the same as was used for the previous valuation.

### **Actuarial Value of Assets**

The actuarial value of assets is smoothed market value. Calculation of the actuarial value of assets begins with the market value of assets as of the valuation date. The expected amount of return over each of the last five years is calculated and subtracted from the actual amount of return for each year. The difference for each year is phased in to the valuation assets at a rate of 20 percent per year until it is fully recognized.

# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

**Valuation as of January 1, 2012**

## **Appendix A, Actuarial Cost Method and Actuarial Value of Assets**

The actuarial value of assets, calculated as described above, is subject to a minimum value of 80 percent of the market value of assets as of the valuation date and a maximum value of 120 percent of the market value of assets as of the valuation date.

The development of the actuarial value of assets is shown on Exhibit 3. The method used to develop the actuarial value of assets is the same as the method used for the previous valuation.

# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

Valuation as of January 1, 2012

## Appendix B, Actuarial Assumptions

1. Rate of return on the actuarial value of assets

7.00% per annum, compounded annually

2. Mortality

Employee and healthy annuitant combined rates from the RP-2000 Mortality Table, projected to 2015 using Scale AA, with separate rates for males and females

3. Termination

Table T-1 from the *Actuary's Pension Handbook*. Specimen rates are:

<u>Age</u>	<u>Termination Rate</u>
25	4.97%
35	2.49%
45	0.62%
55	0.00%

4. Disability

Rates developed from 1985 Society of Actuaries Disability Table Study using Class 1 male rates with a 90-day elimination period. Specimen rates are:

<u>Age</u>	<u>Disability Rate</u>
25	0.187%
35	0.164%
45	0.335%
55	0.858%

# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

**Valuation as of January 1, 2012**

## **Appendix B, Actuarial Assumptions**

**5. Assumed retirement age  
for active members**

Active members are assumed to retire once they have both attained age 55 and completed at least 20 years of service. Active members who have already attained age 55 and completed 20 years of service are assumed to retire on the valuation date.

**6. Assumed retirement age  
for vested terminated  
members**

Benefits for vested terminated members are assumed to start on the date the member attains age 55 or, if later, the date the member would have completed 20 years of service.

**7. Compensation increases for  
individual members**

5.50% per year, compounded annually

**8. Increases in total payroll**

4.00% per year, compounded annually

**9. Marital status**

- a. Proportion married
- b. Difference in ages

Males: 100%, Females: 100%

Actual age differences are used for married members. Unmarried members are assumed to be married at retirement. Males are assumed to be three years older than their spouses.

# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

Valuation as of January 1, 2012

## Appendix B, Actuarial Assumptions

- |  |  |
|--|--|
| <b>10. Assumed form of payment</b>                             | Benefits are assumed to be paid for the life of the member with two-thirds continued to the surviving spouse.  |
| <b>11. Assumed death benefit to children</b>                   | Each member is assumed to have two children. The first child is assumed to have been born when the member was age 25. The second child is assumed to be two years younger. It is also assumed that benefits will be paid until each child reaches the age of 18. |
| <b>12. Assumed contribution rates</b>                          |  |
| a. Members   | 18.20% of compensation   |
| b. District contribution on behalf of all members              | 17.20% of compensation   |
| c. Additional District contribution dedicated to plan expenses | 1.00% of compensation  |

Decrements are assumed to be annual rates, rather than probabilities, and are adjusted for the interaction between competing decrements. The 7.00 percent rate of return was set by taking into account future expected rates of return for portfolios with similar asset allocations. The assumed 7.00 percent rate can be considered to include a provision for inflation at 3.00 percent per year, although other combinations of real return, risk premium and inflation are also accounted for by a 7.00 assumed rate. The same inflation component was used in the assumed rate of return on the actuarial value of assets, the assumed increases in compensation for individual members, and the other actuarial assumptions.

# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

## **Valuation as of January 1, 2012**

### **Appendix B, Actuarial Assumptions**

The valuation includes provisions for mortality improvement to 2015. The mortality table used in the valuation is updated periodically. The actuaries are not aware of any significant event that has occurred since the valuation date that would have materially changed any of the demographic assumptions selected for the valuation.

#### Changes in Actuarial Assumptions

The assumed member contribution rate was increased to 18.20 percent of pay for the January 1, 2012 valuation. Effective January 1, 2012, the member contribution rate to the plan increased to 18.20 percent of pay. The member contribution rate assumed for the 2010 valuation was 12.00 percent of pay.

The assumed contribution rate for the Travis County Emergency Services District No. 6 was changed to 17.20 percent of pay. Effective January 1, 2012, the District's contribution rate to the plan increased to 18.20 percent of pay. The assumed District contribution rate in the 2010 valuation was 11.00 percent of pay.

The mortality table used for the valuation was changed to employee and healthy annuitant combined rates from the RP-2000 Mortality Table, projected to 2015 using Scale AA, with separate rates for males and females. The mortality table used for the 2010 valuation was the RP-2000 Mortality Table, projected to 2010.

The changes were made in order to recognize mortality improvement through the valuation date, provide a margin for future mortality improvement, and to most accurately reflect anticipated plan experience.



# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

**Valuation as of January 1, 2012**

## **Appendix C, Summary of Principal Fund Provisions**

### **Authority for the Fund and Definitions**

The Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund is established under the authority of the Texas Local Fire Fighter's Retirement Act (TLFFRA). The fund is administered by a Board of Trustees. The Board is made up of three members elected from and by fund members, two representatives of Travis County Emergency Services District No. 6, and two citizen members.

Effective January 1, 2012, the Travis County Emergency Services District No. 6 began contributing to the fund at a rate of 18.20 percent of each member's total W-2 pay (including regular wages and standard overtime pay, but excluding (1) lump sum payments upon termination of employment for unused sick and vacation pay and (2) payments in addition to an employee's base pay that are due to overtime other than standard overtime pay and "step-up" service). Compensation includes amounts not includable in W-2 compensation due to Internal Revenue Code Sections 125, 132(f), 401(k), 403(b) or 457(b).

Effective January 1, 2012, members began contributing to the fund at a rate of 18.20 percent of pay. The definition of pay for the purposes of employee contributions is the same as the definition of pay for employer contributions. Employee contributions are "picked up" by the District under Section 414(h)(2) of the Internal Revenue Code. The change from after-tax contributions to pick-up contributions was effective January 1, 2011. For this reason, a member's contributions after December 31, 2010, are excluded from his or her taxable income.

Fund members receive credited service for the period during which they pay into, and keep on deposit in the fund, the contributions required by the fund. Credited service is calculated in years and completed months. In addition, each member of the fund, who was an active employee as of November 1, 2008, receives credit for service with the Fire Department that was performed prior to March 1, 2008.

# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

**Valuation as of January 1, 2012**

## **Appendix C, Summary of Principal Fund Provisions**

Retirement and termination benefits are calculated using a member's highest average monthly pay. Highest average monthly pay is based on an average of the 60 consecutive months of compensation which produce the highest average. In the event of plan termination, average compensation shall be based only upon compensation after January 1, 2009.

The fund was originally effective January 1, 2008, and was most recently amended January 30, 2012.

### **Eligibility**

An individual who is an employee of the District shall become a member of the fund if that individual is younger than 36 years old on the date that he or she begins employment with the Fire Department. An individual who is older than 36 years of age at date of employment with the fire department is eligible to be a member only if (1) the individual first became a firefighter at an age younger than age 36, (2) the board through order authorizes membership in the fund for such individual, and (3) the individual affirmatively elects to be a member and passes the physical examination provided for in Section 9(e) of TLFFRA. Any other individual who first becomes an employee after age 36 is not eligible for membership in the fund.

### **Normal Retirement Benefits**

A member is eligible for service retirement upon completion of 20 years of service and attainment of age 55. A member who retires under the service retirement provisions of the fund will receive a monthly benefit equal to 1.67 percent of the member's highest average monthly pay, multiplied by his or her years of credited service.

Service retirement benefits are payable for the member's lifetime. In the event the member's death precedes that of his spouse, two-thirds of the member's benefit will be continued to the spouse for the spouse's lifetime.

# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

**Valuation as of January 1, 2012**

## **Appendix C, Summary of Principal Fund Provisions**

### **Disability Benefits**

An active member who becomes disabled under the terms of the plan will receive a monthly disability benefit equal to \$100 per month.

### **Death Benefits**

If a member dies while in active service, the member's spouse will receive an immediate monthly benefit, payable for as long as he or she is living. The amount of the benefit will equal \$100.00 per month.

The spouse's benefit is payable for life, but it ceases upon remarriage. In addition to the above spouse's benefit, each unmarried child of the member will receive a monthly benefit of \$20. Orphan benefits continue until a child reaches age 18. In the event the member has no spouse at date of death or if the surviving spouse subsequently dies, the monthly orphan benefit payable is \$40.

### **Termination Benefits**

#### Members with Less Than Ten Years of Credited Service

A fund member who terminates employment prior to completing 10 years of credited service will be entitled to the return of the excess of his or her contributions to the fund over the amount of any benefits he or she has received from the fund. Such refund will not include any interest on the member's contributions.

#### Members Ten or More Years of Credited Service

A fund member who terminates employment after completing at least 10 years of credited service, but prior to the date he or she attains age 50, will be entitled to receive a monthly benefit starting at age 50. The monthly termination benefit will equal 1.67 percent of the member's highest average monthly average pay at multiplied by his or her years of credited service at date of termination of employment.

# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

**Valuation as of January 1, 2012**

## **Appendix C, Summary of Principal Fund Provisions**

### **Amendment of the Plan**

The plan document may be amended as provided in Section 7 of the Texas Fire Fighters' Retirement Act (Article 6243e. V.T.C.S.). Amending the plan requires approval of any proposed change by (a) an eligible actuary and (b) a majority of the participating members of the fund.

# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

**Valuation as of January 1, 2012**

## **Appendix D, Glossary of Terms Used in the Report**

### **Actuarial Assumptions**

In order to project future retirement benefits and to calculate the contributions necessary to fund those benefits, the actuary must choose an earnings rate which will be representative of the trust fund's future rate of return over the long term. Expected rates of mortality, disability, termination and retirement must be selected as well. It is also necessary to choose the assumed rates at which members' compensation will increase. Each of these assumed rates is referred to as an actuarial assumption. The actuary monitors the plan's experience with respect to each assumption and changes assumptions as required. The actuarial assumptions used in this valuation are listed on Appendix B.

### **Actuarial Cost Method**

The actuarial cost method is the means for distributing the cost of a member's pension over his or her period of service with the employer. The cost attributed to each specific year is referred to as the normal cost for that year. The pattern of normal costs is what distinguishes one cost method from another. The specific actuarial cost method used for the actuarial valuation is described on Appendix A.

### **Actuarial Present Value**

Actuarial valuations discount the value of future pension and other benefits from the date they are assumed to be paid, back to the valuation date. Payments are discounted for interest and for the probability that they will ultimately be paid. Probabilities that are taken into account include death, disability and termination.

# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

**Valuation as of January 1, 2012**

## **Appendix D, Glossary of Terms Used in the Report**

### **Actuarial Value of Assets**

The assets of the trust fund can be measured in several ways. If the value of assets is measured by the amount that was paid for them, assets are said to be valued at cost. Assets valued on the basis of the price between a willing buyer and a willing seller are said to be accounted for at market value. The actuarial value of assets is the value of fund assets used in the actuarial valuation. The actuarial value of assets may be set at cost, at market, or some combination of values. Actuarial value is chosen so as to smooth temporary fluctuations of the trust fund. The method used to develop the actuarial value of assets for the valuation is described on Appendix A.

### **Amortization Period**

The portion of the employer's contribution not needed to meet the normal cost for the year is applied to amortizing the unfunded actuarial accrued liability (UAAL). The amortization payment is first applied toward interest on the UAAL. Any remaining amount reduces principal. By taking into account the size of the UAAL, the amount available to amortize the UAAL, and the plan's assumed interest rate, the actuary can calculate the length of time that will be required to reduce the UAAL to zero. This time span is called the amortization period. It is important to note that the periodic amortization payments are not level. Rather, payments are assumed to increase each year by a percentage equal to the growth in total payroll.

### **Annual Required Contribution (ARC)**

As defined in Governmental Accounting Standards Board Statements No. 25 and No. 27, the annual required contribution of the employer is the employer's periodic required contribution calculated using the plan's actuarial cost method and actuarial assumptions. The annual required contribution of the employer may be expressed as a dollar amount or as a percentage of payroll.

# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

**Valuation as of January 1, 2012**

## **Appendix D, Glossary of Terms Used in the Report**

### **Entry Age Normal Cost Method**

Under the entry age normal cost method, the cost of a member's pension is spread over his or her entire career. The normal cost of benefits is calculated so as to be a level amount when expressed as a percentage of pay. A detailed description of the cost method used appears on Appendix A.

### **Net Pension Obligation (NPO)**

As defined in Governmental Accounting Standards Board Statements No. 25 and No. 27, the net pension obligation is the cumulative difference, since the effective date of Statement No. 27, between the annual pension cost and the employer's contributions to the plan.

### **Normal Cost**

The normal cost is the portion of the cost of a member's pension that is attributed to a specific year.

### **Texas Pension Review Board Guidelines for Actuarial Soundness**

The Texas Pension Review Board has published guidelines which specify the basis for determining whether a public pension plan complies with the requirements of Section 802.101 of the Texas Government Code. The guidelines, as amended September 28, 2011, provide that valuations should meet the following requirements.

1. The funding of a pension plan should reflect all plan obligations and assets.
2. The allocation of the normal cost portion of contributions should be level or declining as a percent of payroll over all generations of taxpayers and should be calculated under applicable actuarial standards.



# **Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund**

**Valuation as of January 1, 2012**

## **Appendix D, Glossary of Terms Used in the Report**

3. Funding of the unfunded actuarial accrued liability should be level or declining as a percent of payroll over the amortization period.
4. Funding should be adequate to amortize the unfunded actuarial accrued liability over a period not exceed 40 years, with 15 to 25 years being a more preferable target. Benefits increases should not be adopted if all plan changes being considered cause a material increase in the amortization period and if the resulting amortization period exceeds 25 years.
5. The choice of assumptions should be realistic and reasonable and should comply with applicable actuarial standards.

### **Unfunded Actuarial Accrued Liability**

The unfunded actuarial accrued liability (UAAL) represents the difference between (a) the present value of future benefits and (b) the sum of the present value of future normal costs and the actuarial value of assets. The UAAL is used in calculating the amortization payment for the year, which is a part of the annual contribution requirement. The UAAL does not represent a measure of the degree to which accrued benefits are funded. Many plans which are fully funded as far as accrued benefits are concerned nevertheless have unfunded actuarial accrued liabilities.