

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

**Valuation as of December 31, 2015**

**April 24, 2017**

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

Valuation as of December 31, 2015

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## **Section I - Report Text**

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

## Valuation as of December 31, 2015

### 1. Summary of Valuation Results

This report presents the results of the December 31, 2015 actuarial valuation of the Travis Co. 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 2014 and the 2015 valuation results. The figures on lines d. through f., below, were taken from Exhibit 2 of this report.

	<b>Second Revised Valuation as of <u>01/01/2014</u></b>	<b>Valuation as of <u>12/31/2015</u></b>
a. Market Value of Assets	\$8,007,889	\$12,260,151
b. Actuarial Present Value of Accumulated Plan Benefits	\$5,856,113	\$8,503,452
c. Accumulated Benefit Funding Ratio (line a. divided by line b.)	136.7%	144.2%
d. Unfunded Actuarial Accrued Liability (UAAL)	\$4,441,508	\$4,998,174
e. Annualized Compensation	\$4,278,012	\$5,699,145
f. Amortization Period	7.3 Yrs.	5.8 Yrs.

Lines a. through c. in the above table compare the market 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 December 31, 2015, fund assets were 144.2 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, although it can also be considered a plan termination measure, as well.

On a strict plan termination basis, the present value of accrued retirement benefits was approximately \$7,883,740. This produces a funding ratio of 155.5 percent.

It is unusual for public pension plans to terminate. However, in the event of plan termination, it is unlikely that the plan would distribute lump sums. It is more likely that benefits would be frozen and existing members and beneficiaries would be paid monthly, starting at retirement. Under this scenario, use of the accumulated plan benefit statistics (rather than the accrued benefit statistics) would produce a better measure of the value of plan benefits.

It should be noted that the ratios given above were calculated differently than the ratio called for under Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68. The GASB funded ratio as of the valuation date was 69.64 percent.

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 funding should be adequate to amortize the unfunded actuarial accrued liability over a period not to exceed 40 years, with 15 to 25 years being a more preferable target. (The PRB Guidelines currently in effect are set out in full on Appendix D.) The amortization period as of December 31, 2015, was 5.8 years. Thus, the plan meets current as well as revised Pension Review Board amortization period guidelines. The revised Guidelines will go into effect June 30, 2017.

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

## **Valuation as of December 31, 2015**

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

The amortization period as of January 1, 2014, was 7.3 years, based on the Second Revised Valuation. If all of the prior valuation's assumptions had been realized exactly, the amortization period as of December 31, 2015, would have decreased to 5.3 years due to the passage of time. The actual amortization period as of December 31, 2015, was 5.7 years using the 2014 actuarial assumptions.

#### Changes in Actuarial Assumptions and Methods

The mortality table used for the valuation was changed from (a) the 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, to (b) the Employee and Healthy Annuitant Combined Rates from the RP-2000 Mortality Table, projected to 2024 using Scale AA, with separate rates for males and females. The mortality changes were made in order to recognize mortality improvement through the valuation date and provide a margin for future mortality improvement. Disability rates were changed from SOA Disability Study Table, Class 1 rates, to the tabular rates listed in Appendix B. Termination rates were not changed; however, they were listed as tabular rates, rather than under their original name, Table T-1 from the Actuary's Pension Handbook. Under the new assumptions, the amortization period was 5.8 years.

The changes in the assumptions were made in order to align the assumptions with actuarial requirements as well as to most accurately reflect anticipated plan experience.

The valuation date was changed from January 1, 2016, to December 31, 2015. The individual entry age normal actuarial cost method was used for both the December 31, 2015 valuation and the previous valuation.

### **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.

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

## **Valuation as of December 31, 2015**

years of service. Individual salaries were assumed to increase 5.00 percent per year. Total payroll was assumed to increase 4.00 percent per year.

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 35 full-time fire departments in the TLFFRA system which operate on a calendar-year basis. The 2015 TLFFRA rates of return are preliminary.

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, 2011, through 2015, were -1.37, 7.76%, 17.88%, 6.56%, and 0.67%, respectively. The average rate of return for the five-year period ending December 31, 2015, was 6.09%.

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 7.63%.

Exhibit 6 shows plan experience with respect to annual pay increases. Annual pay increases for members with at least two full years of service averaged approximately 10.3 percent per year over the last two years. Over the last five years, the figure was approximately 5.6 percent per year. These rates include raises from all sources, including overtime, inflation, longevity, merit, and promotion. The annual increase in gross aggregate payroll was 2.7 percent over the last two years, when adjusted for the increase 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 increased from 68 as of January 1, 2014, to 82 as of December 31, 2015.



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## **Valuation as of December 31, 2015**

Exhibit 7 shows a comparison of the plan's expected and actual unfunded actuarial accrued liability based on the 2010 through 2015 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. Exhibit 7 shows that the plan had unfavorable experience over the last two year with respect to demographic experience and favorable experience with respect to rate of return on the actuarial value of assets. The unfavorable demographic experience was the result of pay increases over the last two years, which were greater than assumed. The greater-than-assumed increases were the result of the hiring of 15 new fire fighters in 2013 and 2014. New fire fighters receive large pay increases after completing their probationary period of employment.

### Discussion of the Actuarial Assumptions

The actuaries believe that the results on Exhibits 4 through 7 show that the assumptions used for the valuation fall within the reasonable range, both on an aggregate and on an individual basis. Exhibits 4 through 7 also demonstrate that the assumptions used for the valuation were realistic and reasonable and comply with applicable actuarial standards.

### Satisfaction of Actuarial Experience Study Requirements

Section 802.1014(b-1) of the Texas Government Code requires that Texas public retirement systems, with assets of at least \$100 million, have an actuarial experience study once every five years. The actuaries believe that experience studies set out on Exhibits 4 through 7 satisfy the requirements of Section 802.1014(b-1). The Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund, however, is not subject to the actuarial experience study requirements of Section 802.1014 (b-1) because the value of the trust fund is less than \$100 million.

## **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, or the amounts being paid, is not taken into account by the valuation calculations.



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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.

### **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 and methods that are reasonable in the aggregate, considering the experience of the program and reasonable expectations, and that, in combination, offer the actuary's best estimate of anticipated plan experience under the program.

Current Pension Review Board Guidelines for Actuarial Soundness state that (a) the funding of a pension plan should reflect all plan obligations and assets, (b) the allocation of the normal cost portion of contributions should be level or declining as a percent of payroll over all generations of taxpayers, (c) funding of the unfunded actuarial accrued liability should be level or declining as a percent of payroll over the amortization period, and (d) the choice of assumptions should comply with applicable actuarial standards.

The valuation detailed in this report meets the State of Texas standards listed above. The Travis Co. ESD No. 6 fund and this valuation also satisfy the Pension Review Board Guidelines which will become effective June 30, 2017. The assumptions used for the valuation were also individually reasonable and were consistent with one another.

Current 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 15 to 25 years being a more preferable target. (Current PRB Guidelines are set out in full on Appendix D.) The amortization period of the Travis Co. ESD No. 6 Firefighters'

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

## **Valuation as of December 31, 2015**

Relief and Retirement Fund as of December 31, 2015, was 5.8 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 December 31, 2015, furnished by the fund's recordkeeper, Tinsley Administrative Solutions, LLC. Financial information came from the plan's December 31, 2011 through 2015 audited financial statements, prepared by Montemayor Britton Bender, PC, Certified Public Accountants. A review of all of the data supplied showed that the information was reasonable, consistent, and complete. Accordingly, the information was relied upon as furnished.

The firm of John M. Crider, Jr. - Consulting Actuary, which prepared the December 31, 2015 valuation, is compensated solely by the Travis Co. 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 Co. ESD No. 6 Firefighters' Relief and Retirement Fund as of December 31, 2015. 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. 67 and No. 68 for financial reporting by the fund and by Travis Co. Emergency Services District No. 6.

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

## Valuation as of December 31, 2015

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.

The disclosures required under GASB Statements No. 67 and No. 68 will be furnished in separate reports.

Thank you for the opportunity to serve the Travis Co. 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.*

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

### Reviewed By

original signed by

*Donna L. Hamaker*

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 December 31, 2015

### Exhibit 1, Development of the Normal Cost Percentage

	Second Rev'd Valn as of 01/01/2014	Valuation as of 12/31/2015
Assumed Retirement Age	55	55
Assumed Rate of Return	7.00%	7.00%
Salary Scale	5.00%	5.00%
Increase in Payroll for Amortization	4.00%	4.00%
Assumed Contribution Percentage of the Members	19.60%	20.00%
Assumed Contribution Percentage of the District	19.20%	19.20%

#### 1. Number of Participants

a. Actives below assumed retirement age	68	82
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	2	0
f. Spouses and alternate payees	0	0
g. Children	0	0
h. Total	70	82

#### 2. Annualized Compensation

a. Actives below assumed retirement age	\$ 4,278,012	\$ 5,699,145
b. Average compensation	62,912	69,502

#### 3. Annual Retirement Income

a. Actives below assumed retirement age	\$ 7,880,952	\$ 10,244,891
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	\$ 7,880,952	\$ 10,244,891

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

Valuation as of December 31, 2015

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

	Second Rev'd Valn as of 01/01/2014	Valuation as of 12/31/2015
<b>4. Plan Normal Cost</b>		
a. Service retirement	\$ 740,491	\$ 1,002,559
b. Death in active service	19,729	22,294
c. Disability	86,245	99,647
d. Termination	100,481	120,395
e. Total	\$ 946,946	\$ 1,244,895
<b>5. Anticipated Employee Contributions</b>	838,490	\$ 1,139,829
<b>6. Net Employer Normal Cost (4 - 5)</b>	108,456	\$ 105,066
<b>7. Net Employer Normal Cost, Expressed as a Percentage of Covered Payroll (6 ÷ 2a)</b>	2.54%	1.84%
<b>8. Normal Cost Percentage for Members</b>	19.60%	20.00%
<b>9. Total Normal Cost Percentage for the Plan (7) + (8)</b>	22.14%	21.84%



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

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Exhibit 2, Unfunded Actuarial Accrued Liability and Amortization Period

	Second Rev'd Valn as of 01/01/2014	Valuation as of 12/31/2015
Assumed Retirement Age	55	55
Assumed Rate of Return	7.00%	7.00%
Salary Scale	5.00%	5.00%
Increase in Payroll for Amortization	4.00%	4.00%
Assumed Contribution Percentage of the Members	19.60%	20.00%
Assumed Contribution Percentage of the District	19.20%	19.20%
<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	44,742	0
d. Spouses and alternate payees	0	0
e. Children	0	0
f. Total	\$ 44,742	\$ 0
<b>2. Present Value of Future Benefits Payable to Active and Overage Members</b>		
a. Service retirement	\$ 21,351,684	\$ 29,523,477
b. Death in active service	378,752	433,713
c. Disability	1,621,265	2,119,432
d. Termination	1,147,395	1,483,804
e. Total	\$ 24,499,096	\$ 33,560,426
<b>3. Total Present Value of Future Benefits (1f + 2e)</b>	\$ 24,543,838	\$ 33,560,426

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

Valuation as of December 31, 2015

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

	Second Rev'd Valn Valuation as of 01/01/2014	Valuation as of 12/31/2015
<b>4. Actuarial Present Value of Future Normal Cost Contributions By</b>		
a. Present active members	\$ 11,227,577	\$ 14,744,586
b. City	1,320,232	1,211,930
c. Total	\$ 12,547,809	\$ 15,956,516
<b>5. Actuarial Accrued Liability (3 - 4c)</b>	\$ 11,996,029	\$ 17,603,910
<b>6. Actuarial Value of Assets</b>	\$ 7,554,521	\$ 12,605,736
<b>7. Unfunded Actuarial Accrued Liability (5 - 6)</b>	\$ 4,441,508	\$ 4,998,174
<b>8. Total Contributions (% of Payroll)</b>	38.80%	39.20%
<b>9. Normal Cost (% of Payroll)</b>	22.14%	21.84%
<b>10. Percentage of Payroll Available to Fund the Unfunded Actuarial Accrued Liability (8 - 9)</b>	16.66%	17.36%
<b>11. Annualized Compensation</b>	\$ 4,278,012	\$ 5,699,145
<b>12. Amount Available to Amortize the Unfunded Actuarial Accrued Liability (10 × 11)</b>	\$ 712,717	\$ 989,372
<b>13. Years to Amortize the Unfunded Actuarial Accrued Liability Assuming Total Annual Payroll Increases of 4.00% Annually</b>	7.3 Yrs.	5.8 Yrs.

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

Valuation as of December 31, 2015

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

	<u>12/31/2011</u>	<u>12/31/2012</u>	<u>12/31/2013</u>	<u>12/31/2014</u>	<u>12/31/2015</u>
<b>1. Market Value as of January 1</b>	\$ 2,075,147	\$ 3,680,348	\$ 5,400,792	\$ 8,007,889	\$ 10,298,645
<b>2. Contributions, Appreciation, and Interest and Dividends</b>					
a. Contributions by the District	1,184,944	713,767	809,782	899,146	943,417
b. Contributions by members	502,671	667,296	771,049	903,757	968,074
c. Net realized and unrealized appreciation (depreciation)	(96,326)	258,503	966,276	393,392	(207,508)
d. Interest and dividends	93,759	139,239	195,695	264,096	359,411
e. Other	3,801	4,003	6,902	7,011	24,193
<b>3. Disbursements</b>					
a. Benefits paid	0	0	0	0	0
b. Contributions refunded	42,805	0	74,137	93,228	25,156
c. Administrative expenses	40,843	62,364	68,470	83,418	100,925
<b>4. Subtotal of Contributions, Appreciation, Interest and Dividends, and Disbursements</b>	1,605,201	1,720,444	2,607,097	2,290,756	1,961,506
<b>5. Market Value as of December 31</b>	3,680,348	5,400,792	8,007,889	10,298,645	12,260,151

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

Valuation as of December 31, 2015

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

	<u>12/31/2011</u>	<u>12/31/2012</u>	<u>12/31/2013</u>	<u>12/31/2014</u>	<u>12/31/2015</u>
<b>6. Actuarial Investment Gain/(Loss) for the Year</b>					
a. Market Value as of January 1	\$ 2,075,147	\$ 3,680,348	\$ 5,400,792	\$ 8,007,889	\$ 10,298,645
b. District and member contributions	1,687,615	1,381,063	1,580,831	1,802,903	1,911,491
c. Benefits and contribution refunds	42,805	0	74,137	93,228	25,156
d. Miscellaneous receipts and disbursements	3,801	4,003	6,902	7,011	24,193
e. Expected earnings	202,962	305,962	430,790	620,391	786,927
f. Expected market value of assets December 31	3,926,720	5,371,376	7,345,178	10,344,966	12,996,100
g. Actual market value of assets December 31	3,680,348	5,400,792	8,007,889	10,298,645	12,260,151
h. Actuarial investment gain/(loss)	(246,372)	29,416	662,711	(46,321)	(735,949)
<b>7. Phase-in of actuarial investment gains and (losses)</b>					
a. Portion of the year's actuarial invest- ment gain/(loss) which is phased in over five years	20%	20%	20%	20%	20%
b. Line 6.h. times line 7.a.	(49,274)	5,883	132,542	(9,264)	(147,190)
c. Factor applied to line 7.b. to calcu- late the unrecognized amount as of December 31, 2015	0	1	2	3	4

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

Valuation as of December 31, 2015

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

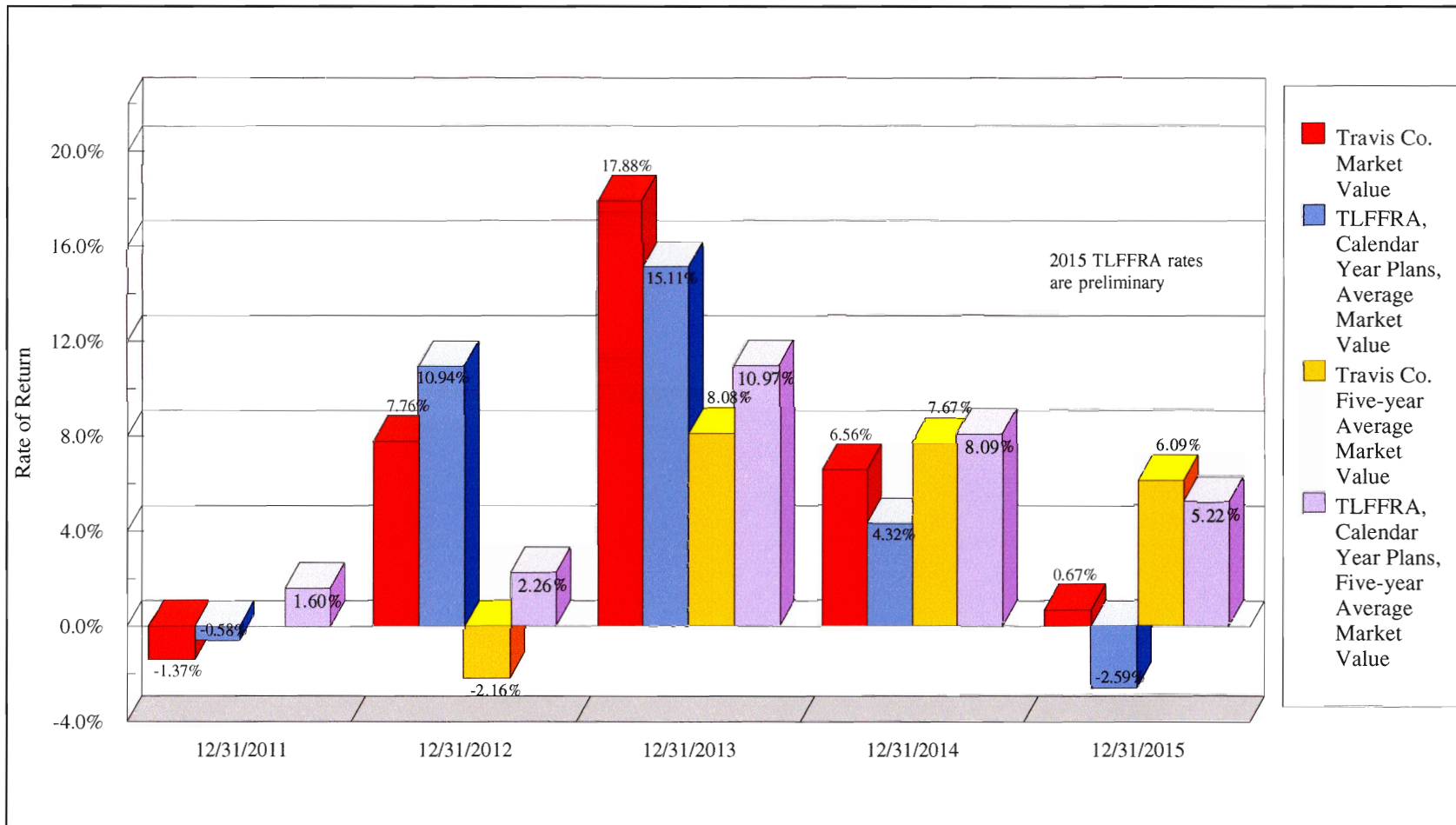
	<u>12/31/2011</u>	<u>12/31/2012</u>	<u>12/31/2013</u>	<u>12/31/2014</u>	<u>12/31/2015</u>
<b>7. Phase-in of actuarial investment gains and (losses), (continued)</b>					
d. Amount of the year's actuarial investment gain/(loss) for the year which is unrecognized as of December 31, 2015 (Line 7.b. times line 7.c.)	\$ 0	\$ 5,883	\$ 265,084	\$ (27,792)	\$ (588,760)
e. Total unrecognized actuarial gain/(loss) for five prior years as of December 31, 2015 (sum of line 7.d. for five prior years)					(345,585)
<b>8. Market Value at December 31, 2015</b>					12,260,151
<b>9. Actuarial Value of Assets as of December 31, 2015, Before Test for 80% to 120% of Market Value (line 8. minus line 7.e.)</b>					12,605,736
<b>10. Preliminary Actuarial Value of Assets Expressed as a Percentage of Year-end Market Value</b>					102.8%
<b>11. Actuarial Value of Assets After Limiting the Preliminary Actuarial Value of Assets to a Range of 80% to 120% of Market Value</b>	\$ 3,877,699	\$ 5,514,566	\$ 7,554,521	\$ 9,975,583	\$ 12,605,736

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

Valuation as of December 31, 2015

Exhibit 4, Actuarial Experience Study - Rates of Return on Fund Assets, Net of Expenses, Measured at Market Value



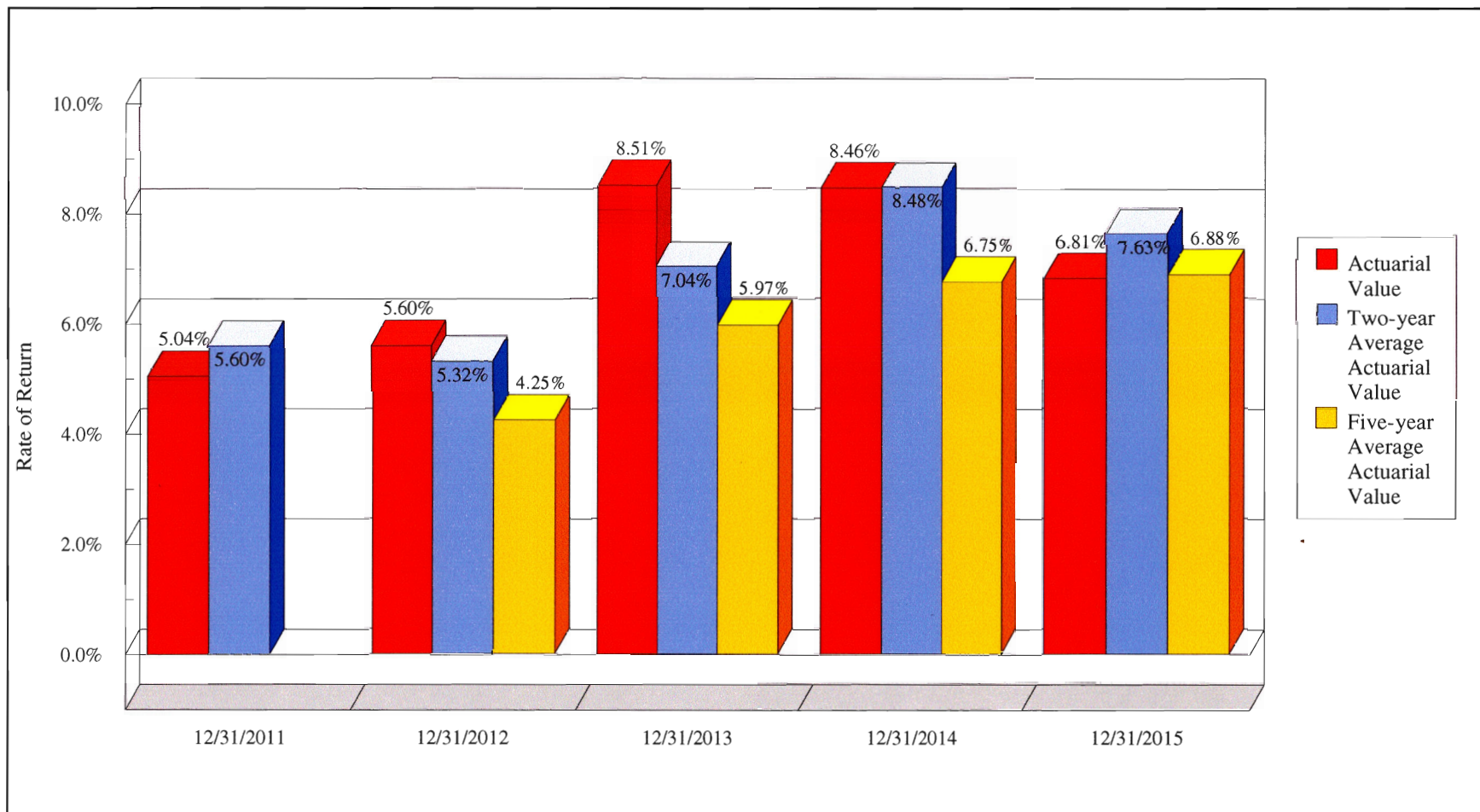
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# Travis Co. ESD No. 6 Firefighters' Relief and Retirement Fund

Valuation as of December 31, 2015

Exhibit 5, Actuarial Experience Study - Rates of Return on Fund Assets, Net of Expenses, Measured at Actuarial Value



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

Valuation as of December 31, 2015

Exhibit 6, Actuarial Experience Study - Average Age at Retirement and Salary Increase Rates

	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015
<u>Average Individual Salary Increases</u>					
1. Average Individual Salary Increase Rate Over the Last Year	11.1%	4.9%	3.5%	11.0%	9.8%
2. Average Individual Salary Increase Rate Over the Last Two Years	11.9%		4.0%		10.3%
3. Average Individual Salary Increase Rate Over the Last Five Years					5.6%
<u>Average Aggregate Salary Increases</u>					
4. Number of Active Members in the Valuation	59		68		82
5. 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%		14.8%		2.7%

The calculation of the average aggregate salary increase for the period from January 1, 2014, to December 31, 2015, was adjusted to account for fire fighters who worked only a portion of the 2015 calendar year.

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

Valuation as of December 31, 2015

Exhibit 7, Actuarial Experience Study - Actuarial Gain and Loss Analysis

Rate of Return Assumed for Prior Valuation	7.00%	7.00%	7.00%	7.00%
Salary Scale Assumed for Prior Valuation	5.50%	5.50%	5.50%	5.00%
Increase in Payroll for Amortization Assumed for Prior Valuation	4.00%	4.00%	4.00%	4.00%
Valuation Date	<u>01/01/2010</u>	<u>01/01/2012</u>	<u>01/01/2014</u>	<u>12/31/2015</u>

### Expected Actuarial Accrued Liability

1. Prior valuation Actuarial Accrued Liability (AAL)	\$2,644,708	\$4,109,994	\$10,550,971	\$11,996,029
2. Prior valuation Normal Cost (NC)	381,031	465,660	940,413	946,946
3. Distributions for second prior year	2,247	7,689	0	93,228
4. Interest on AAL for second prior year	185,130	287,700	738,568	839,722
5. Interest on NC for second prior year	26,672	32,596	65,829	66,286
6. Interest on distributions for second prior year	<u>79</u>	<u>269</u>	<u>0</u>	<u>3,263</u>
7. Expected prior year AAL, (1+2-3+4+5-6)	\$3,235,215	\$4,887,992	\$12,295,781	\$13,752,492
8. Prior valuation NC with salary scale increase	396,272	484,286	978,030	984,824
9. Distributions for immediate prior year	0	42,805	74,137	25,156
10. Interest on AAL for immediate prior year	226,465	342,159	860,705	962,674
11. Interest on NC for immediate prior year	27,739	33,900	68,462	68,938
12. Interest on distributions for immediate prior year	<u>0</u>	<u>1,498</u>	<u>2,595</u>	<u>880</u>
13. Expected AAL as of the valuation date, (7+8-9+10+11-12)	\$3,885,691	\$5,704,034	\$14,126,246	\$15,742,892

### Expected Actuarial Value of Assets

14. Prior valuation Actuarial Value of Assets (AVA)	\$0	\$1,162,285	\$3,877,699	\$7,554,521
15. Contributions for second prior year	488,206	834,426	1,381,063	1,802,903
16. Distributions for second prior year	2,247	7,689	0	93,228
17. Interest on AVA for second prior year	0	81,360	271,439	528,816
18. Interest on contributions for second prior year	17,087	29,205	48,337	63,102
19. Interest on distributions for second prior year	<u>79</u>	<u>269</u>	<u>0</u>	<u>3,263</u>
20. Expected prior year AVA, (14+15-16+17+18-19)	502,967	2,099,318	5,578,538	9,852,851
21. Contribution for immediate prior year	639,590	1,297,310	1,580,831	1,911,491
22. Distribution for immediate prior year	0	42,805	74,137	25,156
23. Interest on AVA for immediate prior year	35,208	146,952	390,498	689,700
24. Interest on contributions for immediate prior year	22,386	45,406	55,329	66,902
25. Interest on distributions for immediate prior year	<u>0</u>	<u>1,498</u>	<u>2,595</u>	<u>880</u>
26. Expected AVA at valuation date (20+21-22+23+24-25)	\$1,200,151	\$3,544,683	\$7,528,464	\$12,494,908

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

Valuation as of December 31, 2015

Exhibit 7, Actuarial Experience Study - Actuarial Gain and Loss Analysis (continued)

Rate of Return Assumed for Prior Valuation	7.00%	7.00%	7.00%	7.00%
Salary Scale Assumed for Prior Valuation	5.50%	5.50%	5.50%	5.00%
Increase in Payroll for Amortization Assumed for Prior Valuation	4.00%	4.00%	4.00%	4.00%
Valuation Date	<u>01/01/2010</u>	<u>01/01/2012</u>	<u>01/01/2014</u>	<u>12/31/2015</u>

### Expected Valuation Results Before Assumption or Method Changes

27. Expected AAL as of the valuation date (line 13)	\$3,885,691	\$5,704,034	\$14,126,246	\$15,742,892
28. Expected AVA at valuation date (line 26)	<u>1,200,151</u>	<u>3,544,683</u>	<u>7,528,464</u>	<u>12,494,908</u>
29. Expected Unfunded Actuarial Accrued Liability (UAAL), (line 27 minus line 28)	\$2,685,540	\$2,159,351	\$6,597,782	\$3,247,984

### Actual Valuation Results Before Assumption or Method Changes

30. Actual AAL before changes	\$4,141,385	\$6,431,678	\$13,965,796	\$17,409,879
31. AVA before changes	<u>1,162,285</u>	<u>3,469,606</u>	<u>7,554,521</u>	<u>12,605,736</u>
32. Actual UAAL before changes (line 30 minus line 31)	\$2,979,100	\$2,962,072	\$6,411,275	\$4,804,143

### Gain/(Loss) on the Unfunded Actuarial Accrued Liability

33. UAAL gain or (loss) since the previous valuation (line 29 minus line 32)	(\$293,560)	(\$802,721)	\$186,507	(\$1,556,159)
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### Check of Gain/(Loss) Calculation

34. Actuarial Accrued Liability gain/(loss), (line 27 minus line 30)*	(\$255,694)	(\$727,644)	\$160,450	(\$1,666,987)
35. Actuarial Value of Assets gain/(loss), (line 31 minus line 28)	(37,866)	(75,077)	26,057	110,828
36. AAL gain/(loss) + AVA gain/(loss)	(293,560)	(802,721)	186,507	(1,556,159)

37. Difference (line 33 - line 36)	0	0	0	0
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### Cumulative Gain/(Loss) on the Unfunded Actuarial Accrued Liability

38. Prior three valuation cumulative gain/(loss) on AAL (from line 34)			(\$822,888)	(\$2,234,181)
39. Prior three valuation cumulative gain/(loss) on AVA (from line 35)			<u>(86,886)</u>	<u>61,808</u>
40. Prior three valuation cumulative gain/(loss) on UAAL (line 38 plus line 39)			(\$909,774)	(\$2,172,373)

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

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

Valuation as of December 31, 2015

Exhibit 7, Actuarial Experience Study - Actuarial Gain and Loss Analysis (continued)

Rate of Return Assumed for Prior Valuation	7.00%	7.00%	7.00%	7.00%
Salary Scale Assumed for Prior Valuation	5.50%	5.50%	5.50%	5.00%
Increase in Payroll for Amortization Assumed for Prior Valuation	4.00%	4.00%	4.00%	4.00%
Valuation Date	<u>01/01/2010</u>	<u>01/01/2012</u>	<u>01/01/2014</u>	<u>12/31/2015</u>

### Calculation of the Amortization Period

41. Percentage of payroll available to amortize the UAAL	5.64%	10.51%	12.84%	17.01%
42. Annualized compensation	3,717,196	4,407,618	5,223,826	5,699,145
43. Amount available to amortize the UAAL	209,650	463,241	670,739	969,425
44. Years to amortize the UAAL before changes in methods or assumptions	19.5	7.5	11.9	5.7
45. Years to amortize the UAAL after changes in methods and/or assumptions	9.1	3.2	7.3	5.8
46. Years to amortize the UAAL after changes in methods, assumptions and plan amendments	-	-	-	-

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### **Section III - Appendices**



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

## **Valuation as of December 31, 2015**

### **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.

#### **Changes in the Actuarial Cost Method**

The valuation date was changed from January 1, 2016, to December 31, 2015. The individual entry age normal actuarial cost method was used for both the 2015 valuation and 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 December 31, 2015**

## **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 December 31, 2015

## Appendix B, Actuarial Assumptions

- |  |   |
|--|---|
| <b>1. Rate of return on the actuarial value of assets</b>      | 7.00% per annum, compounded annually  |
| <b>2. Mortality</b>  | Employee and healthy annuitant combined rates from the RP-2000 Mortality Table, projected to 2024 using Scale AA, with separate rates for males and females   |
| <b>3. Disability</b>   | Disability rates are shown on the table below.  |
| <b>4. Termination</b>  | Termination rates are shown on the table below.   |
| <b>5. Assumed retirement age for active members</b>            | 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. |
| <b>6. Assumed retirement age for vested terminated members</b> | 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.   |

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

Valuation as of December 31, 2015

## Appendix B, Actuarial Assumptions

- |   |  |
|---|--|
| 7. Compensation increases for individual members  | 5.00% per year, compounded annually  |
| 8. Increases in total payroll                     | 4.00% per year, compounded annually  |
| 9. Marital status                                 |  |
| a. Proportion married                             | Males: 100%, Females: 100%   |
| b. Difference in ages                             | 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.  |
| 10. Assumed form of payment                       | Benefits are assumed to be paid for the life of the member with two-thirds continued to the surviving spouse.  |
| 11. Assumed death benefit to children             | 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. |
| 12. Assumed contribution rates                    |  |
| a. Members  | 20.00% of compensation   |
| b. District contribution on behalf of all members | 19.20% of compensation   |

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

## **Valuation as of December 31, 2015**

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

Decrement rates 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.

The valuation includes provisions for mortality improvement to 2024. 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.

#### Rationale for the Actuarial Assumptions

The assumed rate of return was developed using both the plan's historical rates of return and expected future rates of return. Rate of return experience studies have been performed in connection with the plan's valuations. (See Exhibit 4 and Exhibit 5 of the valuation report as well as corresponding exhibits in prior valuation reports.)

The demographic assumptions were chosen based on expected future rates of retirement, mortality, disability, and termination. Mortality was taken from published studies and was updated to reflect future improvement. Retirement was based on the earliest retirement age and salary increase rates were developed based on the plan's own experience. Disability and termination rates were based on published rates. Demographic assumptions were tested in connection with the valuation. (See Exhibit 6 of the valuation report, as well as corresponding exhibits in prior valuation reports.)

Both economic and demographic assumptions were further tested through the calculation of the plan's aggregate experience with respect to both demographic decrements and economic assumptions. (See Exhibit 7 of the valuation report as well as corresponding exhibits in prior valuation reports.)

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

## **Valuation as of December 31, 2015**

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

Rationale for the actuarial assumptions is also provided in the Text Section of the valuation report.

#### Changes in Actuarial Assumptions

The mortality table used for the valuation was changed from (a) the 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, to (b) the Employee and Healthy Annuitant Combined Rates from the RP-2000 Mortality Table, projected to 2024 using Scale AA, with separate rates for males and females. The mortality changes were made in order to recognize mortality improvement through the valuation date and provide a margin for future mortality improvement. Disability rates were changed from SOA Disability Study Table, Class 1 rates, to the tabular rates listed in this Appendix B. Termination rates were not changed; however, they were listed as tabular rates, rather than under their original name, Table T-1 from the Actuary's Pension Handbook.

The assumed member contribution rate was increased to 20.00 percent of pay for the December 31, 2015 valuation. The member contribution rate assumed for the 2014 valuation was 19.60 percent of pay.

The effects of the assumption changes are described in the Text Section of the valuation report. The changes in assumptions were made in order to align the assumptions with actuarial requirements as well as to most accurately reflect anticipated plan experience.



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

Valuation as of December 31, 2015

## Appendix B, Actuarial Assumptions

### Disability and Termination Rates By Attained Age

<u>Attained Age</u>	<u>Disability Rate</u>	<u>Termination Rate</u>	<u>Attained Age</u>	<u>Disability Rate</u>	<u>Termination Rate</u>
18	0.00075	0.055000			
19	0.00080	0.055000			
20	0.00085	0.055000	45	0.00335	0.006233
21	0.00090	0.054723	46	0.00367	0.005660
22	0.00096	0.054010	47	0.00402	0.005397
23	0.00101	0.052906	48	0.00441	0.005454
24	0.00106	0.051456	49	0.00485	0.005822
25	0.00111	0.049706	50	0.00533	0.000000
26	0.00112	0.047700	51	0.00586	0.000000
27	0.00113	0.045486	52	0.00645	0.000000
28	0.00114	0.043105	53	0.00710	0.000000
29	0.00118	0.040600	54	0.00780	0.000000
30	0.00122	0.038011	55	0.00858	0.000000
31	0.00125	0.035373	56	0.00943	0.000000
32	0.00130	0.032715	57	0.01036	0.000000
33	0.00136	0.030064	58	0.01137	0.000000
34	0.00143	0.027441	59	0.01247	0.000000
35	0.00152	0.024866	60	0.01367	0.000000
36	0.00162	0.022354	61	0.01497	0.000000
37	0.00173	0.019922	62	0.01638	0.000000
38	0.00187	0.017586	63	0.01779	0.000000
39	0.00203	0.015367	64	0.01920	0.000000
40	0.00221	0.013283			
41	0.00239	0.011378			
42	0.00259	0.009700			
43	0.00281	0.008269			
44	0.00307	0.007107			

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

**Valuation as of December 31, 2015**

## **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 with the pay period ending October 19, 2013, the Travis County Emergency Services District No. 6 began contributing to the fund at a rate of 19.20 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 with the pay period ending October 17, 2015, members began contributing to the fund at a rate of 20.00 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. The previous member contribution rate was 19.60 percent of pay.

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 December 31, 2015**

## **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. Notwithstanding the above, highest average monthly pay shall be based only upon compensation since January 1, 2009.

The fund was originally effective January 1, 2008, and was most recently amended December 15, 2015.

### **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 (a) 3.00 percent of the member's highest average monthly pay, multiplied by his or her years of credited service up to 20 years, plus (b) 2.15 percent of the member's highest average monthly pay, multiplied by his or her years of credited service in excess of 20 years.

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

**Valuation as of December 31, 2015**

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

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.

In lieu of the straight service retirement benefit described above, a member may elect to receive his or her benefit under the Deferred Retirement Option Program (DROP), described later in this Appendix C.

### **Disability Benefits**

An active member will qualify for monthly disability benefit if, prior to satisfying the requirements for a service retirement benefit, the member is unable, as a result of a physical or mental condition, to perform the duties of (a) the duties of his or her present position or (b) a position offered to him or her in the Fire Department which provides pay equal to or greater than the pay the disabled member would have received in his or her position prior to disablement.

The disability benefit commences after (a) the member has ceased receiving any compensation or vacation pay and (b) the board has determined that the member satisfies the disability benefit requirements of the fund. Disability benefits are payable in the same form as service retirement benefits. However, disability benefits stop if the member recovers to the point that he no longer meets the definition of disability under the fund.

### Amount of Disability Benefit

The amount of monthly disability benefit payable under the fund will be equal to (a) 3.00 percent of the member's highest average monthly pay, multiplied by his or her years of credited service up to 20 years, plus (b) 2.15 percent of the member's highest average monthly pay, multiplied by his or her years of credited service in excess of 20 years. Years of credited service will not be less than 20.

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

**Valuation as of December 31, 2015**

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

### **Death Benefits**

If a member dies while in active service, the member's surviving spouse will receive an immediate monthly benefit, payable for as long as he or she is living. The amount of monthly death benefit payable under the fund will be equal to (a) 2.00 percent of the member's highest average monthly pay, multiplied by his or her years of credited service up to 20 years, plus (b) 1.4333 percent of the member's highest average monthly pay, multiplied by his or her years of credited service in excess of 20 years. Years of credited service will not be less than 20.

In addition to the above surviving spouse's benefit, each unmarried child of the member will receive a monthly benefit of 7.47 percent of the member's highest average monthly pay. Orphan benefits continue until the child reaches age 18. However, benefits will continue until age 25 for a child who is a full-time student. Orphan benefits are doubled if the deceased member has no surviving spouse.

### **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.

#### 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 55, will be entitled to receive a monthly benefit starting at age 55. The monthly termination benefit will be equal to (a) 3.00 percent of the member's highest average monthly pay, multiplied by his or her years of credited service at date of termination of employment up to 20 years, plus (b) 2.15 percent of the member's highest average monthly pay, multiplied by his or her years of credited service at date of termination of employment in excess of 20 years.



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

**Valuation as of December 31, 2015**

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

### **The DROP Program**

A member is eligible to receive his benefit under the plan's DROP provision after he or she has both completed 20 years of service and attained age 55. The election to participate in the DROP may be made at the time the member elects to retire.

#### Amount of Monthly Retirement Income to DROP Program Participants

The monthly retirement income payable to a member who retires under the DROP will equal his service retirement benefit under the plan based on average monthly salary and years of service as of the member's DROP Date. The member's benefit will be calculated, however, using the benefit formula in effect on the member's DROP date.

A member's DROP Date is the date two years prior to the date he or she retires from the Department.

Upon retirement, the member will receive—in addition to his monthly retirement benefit—an amount equal to the sum of:

- a. the total of the monthly retirement benefits the member would have received between his or her DROP Date and the time he or she retired under the plan, and
- b. the amount of monthly contributions that the member has made to the fund between his or her DROP Date and the time he or she retired under the plan.

### **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 December 31, 2015**

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

#### **Actuarial Accrued Liability**

The actuarial accrued liability is calculated by subtracting the present value of future normal costs from the present value of future benefits. Under Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68, the actuarial accrued liability is referred to as the "total pension liability."

#### **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 December 31, 2015**

### **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.

#### **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. Under Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68, the unfunded actuarial accrued liability is referred to as the "net pension liability."

#### **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

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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.

#### **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.

#### **Normal Cost**

The normal cost is the portion of the cost of a member's pension that is attributed to a specific year. Under GASB Statements No. 67 and No. 68, the normal cost is referred to as the "service cost."

#### **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 the contributions should be level or declining as a percent of payroll over all generations of taxpayers, and should be calculated under applicable actuarial standards.

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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 to exceed 40 years, with 15 to 25 years being a more preferable target. Benefit 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.

The Guidelines were further amended January 26, 2017, to be effective June 30, 2017. The amended Guidelines 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.
3. Funding of the unfunded actuarial accrued liability should be level or declining as a percent of payroll over the amortization period.
4. Actual contributions made to the plan should be sufficient to cover the normal cost and to amortize the unfunded actuarial accrued liability over as brief a period as possible, but not to exceed 30 years, with 10 to 25 years being the preferable target range. For plans that use multiple amortization layers, the weighted average of all amortization periods should be consistent with this same maximum period and target range. Benefit 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.

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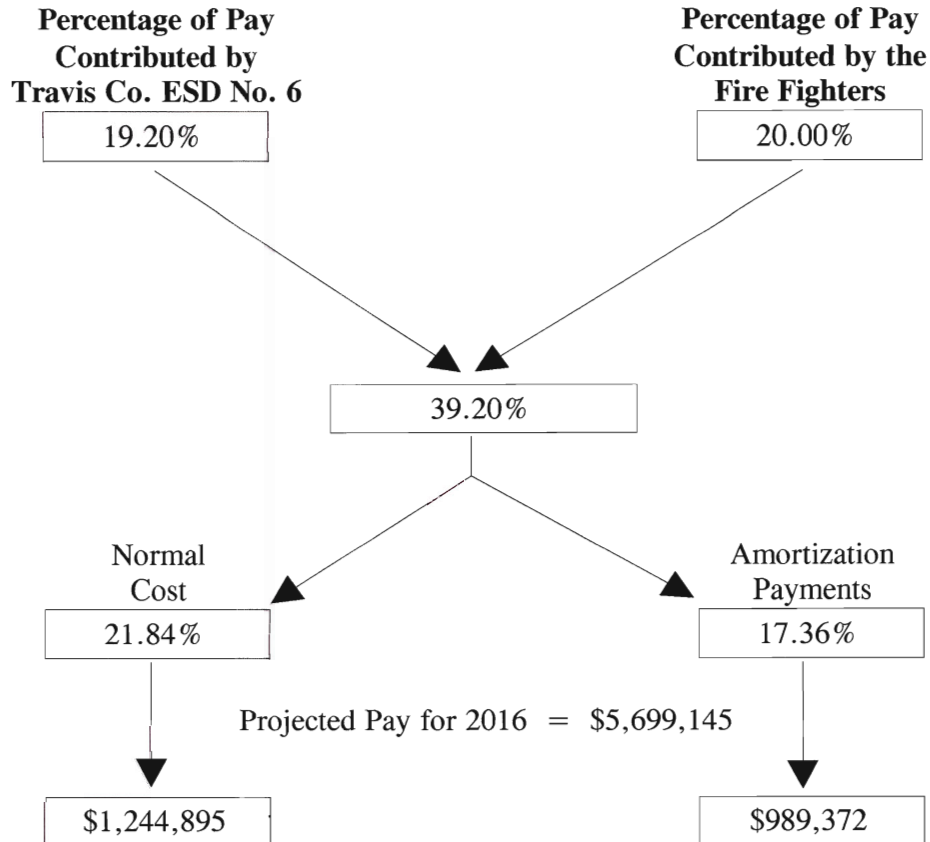
Plans with amortization periods that exceed 30 years as of June 30, 2017, should seek to reduce their amortization period to 30 years or less as soon as practicable, but not later than June 30, 2025.

5. The choice of assumptions should be reasonable, and should comply with applicable actuarial standards.
6. Retirement systems should monitor, review, and report the impact of actual plan experience on actuarial assumptions at least once every five years.

# Travis Co. ESD 6 Firefighters' Relief and Retirement Fund

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## Schematic Diagram of Plan Funding



Present Value of All Future Benefits =	\$33,560,426	<u>UAAL/NPL</u>
Less Present Value of Future Normal Costs =	15,956,516	\$17,603,910
Less Actuarial Value of Assets =	12,605,736	<u>12,605,736</u>
Benefits to be Funded by Amortization Payments =	\$4,998,174	4,998,174

Length of Time Needed, at 7.00% Interest, to Amortize \$4,998,174, with Payments Starting at \$989,372 and increasing 4.00% annually = 5.8 years

Note: The present value of future normal costs is being funded by the normal cost over a period of 17.1 years. The normal cost does not exactly equal the normal cost percentage times projected pay, due to rounding.