



# El Paso County Retirement Plan

## Actuarial Valuation Report

Prepared as of January 1, 2018

May 2018

May 24, 2018

Board of Retirement  
El Paso County Retirement Plan  
105 E. Vermijo, Suite 200  
Colorado Springs, CO 80903-2007

**Re: Certification of January 1, 2018 Actuarial Valuation**

Ladies and Gentlemen:

This report summarizes the actuarial valuation results of the El Paso County Retirement Plan (Plan) as of January 1, 2018 performed by Conduent HR Consulting, LLC (Conduent HR Consulting).

The actuarial valuation is based on draft assets as of December 31, 2017 provided by Stockman Kast Ryan & Co, LLP and member data provided by the Retirement Plan Administrator and summarized in this report. The benefits considered are those delineated in the Plan as amended and restated effective January 1, 2013.

All costs, liabilities and other factors under the Plan were determined in accordance with the Actuarial Standards of Practice. An actuarial cost method which I believe is reasonable is used to measure the actuarial liabilities as of the valuation date. This report fully and fairly discloses the actuarial position of the Plan as of January 1, 2018.

Unless otherwise noted, where presented, references to “funded ratio” and “unfunded accrued liability” are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the Plan if the Plan were to settle (i.e. purchase annuities) for a portion or all of its liabilities.

The actuarial assumptions used in the January 1, 2018 actuarial valuation are based on the results of an actuarial experience study for the period January 1, 2008 to December 31, 2012, which resulted in changes in actuarial assumptions adopted by the El Paso County Retirement Board to better reflect expected future experience. In my opinion, the actuarial assumptions used are reasonable, taking into account the experience of the Plan and reasonable long-term expectations, and represent the best estimate of the anticipated long-term experience under the Plan. A summary of the actuarial assumptions and methods used in this actuarial valuation is shown in Section 4.3.

Use of this report for any other purposes or by anyone other than the Board members and staff may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of this report for that purpose. Because of the risk of misinterpretation of actuarial results, you should ask Conduent HR Consulting to review any statement you wish to make regarding the results contained in this report. Conduent HR Consulting will not accept any liability for any such statement made without prior review by Conduent HR Consulting.

Future actuarial measurements may differ significantly from current measurements due to Plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in Plan provisions or applicable law. An analysis of the potential range of such differences is beyond the scope of this valuation.

I am a Fellow of the Society of Actuaries, an Enrolled Actuary, a Member of the American Academy of Actuaries and a Fellow of the Conference of Consulting Actuaries. I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice.

I am available to answer any questions on the material contained in the report, or to provide explanations or further details as may be appropriate. I can be reached at 602-803-6174.

Respectfully submitted,

Conduent HR Consulting, LLC

A handwritten signature in black ink, appearing to read "D. J. Kershner".

David J. Kershner, FSA, EA, MAAA, FCA  
Principal

DJK/jac  
EPC 051718 2018 Report

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## Purpose and Highlights

The main purposes of the actuarial valuation detailed in this report are:

1. To determine if the Board's funding policy for the Plan is being met considering current assets and liabilities, and the current employer and member contribution rates;
2. To review the current funded status of the Plan; and
3. To compare actual and expected experience under the Plan during the prior year.

The January 1, 2018 actuarial valuation is based upon the current plan provisions which are described in Section 4.2, and the actuarial methods and assumptions which are described in Section 4.3. There were no changes in plan provisions, actuarial methods or assumptions since the last valuation.

Highlights from the current and prior valuations are:

1. A contribution rate of 8.0% of salary by both the participating employers and members (16% of salary in total) in 2018 will not be sufficient to meet the Retirement Board's funding policy of paying the normal cost and amortizing the unfunded actuarial accrued liability over 30 years from the valuation date. The total actuarially required contribution necessary to fund the Plan's benefits under the Board's funding policy for 2018 is 16.2% of salary.
2. Actuarial gains of \$808,445 were experienced in 2017 from asset sources and actuarial gains of \$617,557 were experienced in 2017 from liability sources. These gains decreased the unfunded actuarial accrued liability by \$1,426,002.

The net gain from liability sources was primarily due to salary increases less than expected and decrement experience less than expected, partially offset by service purchases and new entrants.

3. The funded ratio based on Actuarial Value of Assets is 71.2% (vs. 70.2% in 2017). The funded ratio based on Market Value of Assets is 72.2% (vs. 67.9% in 2017). The rate of return on Actuarial Value of Assets in 2017 was 8.2%; the rate of return on Market Value of Assets in 2017 was 13.5%.

# Summary of Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or plan provisions between the two valuations are described in the section titled "Effects of Changes."

	Actuarial Valuation as of		Change Between Years	
	January 1, 2017	January 1, 2018	Amount	Percent
<b>Summary of Costs</b>				
Actuarial Contribution Requirement	\$ 23,969,743	\$ 24,566,860	\$ 597,117	2.5%
Estimated Contributions	\$ 23,419,636	\$ 24,201,316	\$ 781,680	3.3%
Actuarial Contribution Requirement as a Percentage of Pay	16.4%	16.2%	(0.2%)	(1.2%)
<b>Funded Status</b>				
Actuarial Accrued Liability	\$ 509,493,916	\$ 531,589,132	\$ 22,095,216	4.3%
Actuarial Value of Assets	\$ 357,495,370	\$ 378,292,120	\$ 20,796,750	5.8%
Unfunded Actuarial Accrued Liability/(Surplus)	\$ 151,998,546	\$ 153,297,012	\$ 1,298,466	0.9%
<b>Market Value of Assets and Additional Liabilities</b>				
Market Value of Assets	\$ 345,764,555	\$ 383,591,448	\$ 37,826,893	10.9%
Present Value of Projected Plan Benefits	\$ 608,076,691	\$ 633,801,303	\$ 25,724,612	4.2%
<b>Summary of Data</b>				
Number of Members in Valuation:				
Active Members	2,669 <sup>1</sup>	2,693 <sup>2</sup>	24	0.9%
Members with Deferred Benefits	398	458	60	15.1%
Retired Members	1,455	1,521	66	4.5%
Beneficiaries	109	109	-	0.0%
Total	4,631	4,781	150	3.2%
<b>Active Member Statistics</b>				
Total Annual Compensation	\$ 147,175,842 <sup>1</sup>	\$ 153,027,339 <sup>2</sup>	\$ 5,851,497	4.0%
Average Compensation	\$ 55,181 <sup>3</sup>	\$ 56,852 <sup>4</sup>	\$ 1,671	3.0%
Average Age	44.5 <sup>3</sup>	44.2 <sup>4</sup>	(0.3)	(0.7%)
Average Service	7.8 <sup>3</sup>	7.8 <sup>4</sup>	0.0	0.0%

<sup>1</sup> Includes 12 members on leave of absence.

<sup>2</sup> Includes 30 members on leave of absence.

<sup>3</sup> Excludes 12 members on leave of absence.

<sup>4</sup> Excludes 30 members on leave of absence.

## Effects of Changes

### **Changes in Actuarial Assumptions**

There were no changes in the actuarial assumptions since the prior valuation.

### **Changes in Plan Provisions**

There were no changes in plan provisions since the prior valuation.

### **Changes in Actuarial Methods**

There were no changes in actuarial methods since the prior valuation.

# Section 1: Funding Results

- Section 1.1** A comparative summary of valuation results.
- Section 1.2** The actuarially required contribution.
- Section 1.3** The actuarial gain/(loss) during the preceding year.
- Section 1.4** The normal cost and unfunded actuarial accrued liability as of the current and prior valuation dates.
- Section 1.5** The present value of projected plan benefits.
- Section 1.6** A ten-year projection of retirement benefit payments.



## Section 1.1: Comparative Summary of Principal Valuation Results

	Actuarial Valuation as of		Percent
	January 1, 2017	January 1, 2018	Change
<b>A. Summary of Data</b>			
1. Active Members			
a. Number <sup>1</sup>	2,669	2,693	0.9%
b. Annual Compensation <sup>1</sup>	\$ 147,175,842	\$ 153,027,339	4.0%
c. Average Annual Compensation <sup>2</sup>	\$ 55,181	\$ 56,852	3.0%
d. Average Age <sup>2</sup>	44.5	44.2	(0.7%)
e. Average Service <sup>2</sup>	7.8	7.8	0.0%
f. Accumulated Member Contributions <sup>2</sup>			
i. With Interest	\$ 82,350,792	\$ 86,071,897	4.5%
ii. Without Interest	\$ 66,818,162	\$ 69,896,199	4.6%
2. Refund of Employee Contributions due			
a. Number	92	128	39.1%
b. Amount of Refunds Due	\$ 429,057	\$ 783,826	82.7%
3. Vested Terminated Members			
a. Number <sup>3</sup>	306	330	7.8%
b. Annual Deferred Benefits	\$ 2,703,422	\$ 2,944,123	8.9%
c. Average Annual Deferred Benefit	\$ 8,835	\$ 8,922	1.0%
4. Retired and Disabled Members			
a. Number	1,455	1,521	4.5%
b. Annual Retirement Benefits	\$ 27,144,086	\$ 28,726,486	5.8%
c. Average Annual Retirement Benefit	\$ 18,656	\$ 18,887	1.2%
5. Beneficiaries			
a. Number	109	109	0.0%
b. Annual Retirement Benefits	\$ 1,250,403	\$ 1,309,070	4.7%
c. Average Annual Retirement Benefit	\$ 11,472	\$ 12,010	4.7%
6. Total Members Included in Valuation	<b>4,631</b>	<b>4,781</b>	<b>3.2%</b>

<sup>1</sup> Includes 12 members on leave of absence in 2017 and 30 members on leave of absence in 2018.

<sup>2</sup> Excludes 12 members on leave of absence in 2017 and 30 members on leave of absence in 2018.

<sup>3</sup> Includes 14 deferred disableds and 3 deferred beneficiaries in 2017 and 12 deferred disableds and 4 deferred beneficiaries in 2018.

**Section 1.1: Comparative Summary of Principal Valuation Results (continued)**

	Actuarial Valuation as of		Percent Change
	January 1, 2017	January 1, 2018	
<b>B. Summary of Assets, Liabilities and Funded Status</b>			
1. Plan Assets on Valuation Date			
a. Actuarial Value	\$ 357,495,370	\$ 378,292,120	5.8%
b. Market Value	\$ 345,764,555	\$ 383,591,448	10.9%
2. Actuarial Accrued Liability	\$ 509,493,916	\$ 531,589,132	4.3%
a. Funded Ratio - Actuarial Value	70.2%	71.2%	1.4%
b. Funded Ratio - Market Value	67.9%	72.2%	6.3%
c. Vested Funded Ratio - Market Value <sup>1</sup>	70.2%	74.6%	6.3%
3. Unfunded Actuarial Accrued Liability (Based on Actuarial Value of Assets)	\$ 151,998,546	\$ 153,297,012	0.9%
4. Present Value of Projected Benefits	\$ 608,076,691	\$ 633,801,303	4.2%

	Actuarial Valuation as of				Percent Change in Amount
	January 1, 2017		January 1, 2018		
	Amount	% of Comp.	Amount	% of Comp.	
<b>C. Summary of Contribution Requirements</b>					
1. Normal Cost Compensation	\$ 146,372,726	N/A	\$ 151,258,230	N/A	3.3%
2. Total Normal Cost Beginning of Year	\$ 14,137,051	9.66%	\$ 14,603,164	9.65%	3.3%
3. Amortization of Unfunded Actuarial Accrued Liability over 30 years from the valuation date	\$ 9,144,322	6.25%	\$ 9,222,439	6.10%	0.9%
4. Administrative Expenses	\$ 688,370	0.47%	\$ 741,257	0.49%	7.7%
5. Total Actuarially Required Contribution (2. + 3. + 4.)	\$ 23,969,743	16.38%	\$ 24,566,860	16.24%	2.5%
6. Estimated Member Contribution <sup>2</sup>	\$ 11,709,818	8.00%	\$ 12,100,658	8.00%	3.3%
7. Recommended Employer Contribution (5. - 6.)	\$ 12,259,925	8.38%	\$ 12,466,202	8.24%	1.7%

<sup>1</sup> Only includes Actuarial Accrued Liability for members who were vested as of the valuation date.

<sup>2</sup> 8.00% of normal cost compensation.

## Section 1.2: Actuarially Required Contribution

	January 1, 2017	January 1, 2018
1. Normal Cost	\$ 14,137,051	\$ 14,603,164
2. Amortization of Unfunded Actuarial Accrued Liability	\$ 9,144,322	\$ 9,222,439
3. Administrative Expenses	\$ 688,370	\$ 741,257
4. Total Actuarially Required Contribution		
a. Amount (1. + 2. + 3.)	\$ 23,969,743	\$ 24,566,860
b. Percent of Normal Cost Compensation	16.4%	16.2%
5. Estimated Member Contribution <sup>1</sup>	\$ 11,709,818	\$ 12,100,658
6. Recommended Employer Contribution		
a. Amount (4.a. - 5.)	\$ 12,259,925	\$ 12,466,202
b. Percent of Normal Cost Compensation	8.4%	8.2%
7. Estimated Employer Contribution	\$ 11,709,818	\$ 12,100,658
8. Amount of Total Employer Contribution in Excess of Actuarially Required Contribution/(Deficit) (7. - 6.a.)	\$ (550,107)	\$ (365,544)

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<sup>1</sup> 8.00% of normal cost compensation.

### Section 1.3: Actuarial Gain/(Loss)

The actuarial gain/(loss) is comprised of both the liability gain/(loss) and the actuarial asset gain/(loss). Each of these represents the difference between the expected and actual values as of January 1, 2018.

1. Expected Actuarial Accrued Liability	
a. Actuarial Accrued Liability at January 1, 2017	\$ 509,493,916
b. Normal Cost and expected Administrative Expenses at January 1, 2017	14,825,421
c. Interest on a. + b. to End of Year	41,945,547
d. Benefit Payments and Administrative Expenses for Plan Year Ending December 31, 2017, with Interest to End of Year Excluding Supplemental Payment	34,058,195
e. Expected Actuarial Accrued Liability Before Changes (a. + b. + c. - d.)	532,206,689
f. Change in Actuarial Accrued Liability at January 1, 2018, Due to Change in Actuarial Assumptions	0
g. Change in Actuarial Accrued Liability at January 1, 2018, Due to Change in Plan Provisions	0
h. Expected Actuarial Accrued Liability at January 1, 2018 (e. + f. + g.)	\$ 532,206,689
2. Actuarial Accrued Liability at January 1, 2018	\$ 531,589,132
<b>3. Liability Gain/(Loss) (1.h. - 2.)</b>	<b>\$ 617,557</b>
4. Expected Actuarial Value of Assets	
a. Actuarial Value of Assets at January 1, 2017	\$ 357,495,370
b. Interest on a. to End of Year	28,599,630
c. Contributions Made for Plan Year Ending December 31, 2017	24,468,144
d. Interest on c. to End of Year	978,726
e. Benefit Payments and Administrative Expenses for Plan Year Ending December 31, 2017, with Interest to End of Year Excluding Supplemental Payment	34,058,195
f. Change in Actuarial Value of Assets at January 1, 2018 due to supplemental pension payment	0
g. Expected Actuarial Value of Assets at January 1, 2018 (a. + b. + c. + d. - e. - f.)	\$ 377,483,675
5. Actuarial Value of Assets as of January 1, 2018	\$ 378,292,120
<b>6. Actuarial Asset Gain/(Loss) (5. - 4.g.)</b>	<b>\$ 808,445</b>
<b>7. Actuarial Gain/(Loss) (3. + 6.)</b>	<b>\$ 1,426,002</b>

## Section 1.4: Normal Cost and Unfunded Actuarial Accrued Liability

### A. Normal Cost

Component	January 1, 2017	January 1, 2018
Retirement Benefits	\$ 9,660,544	\$ 9,933,804
Withdrawal Benefits	3,877,420	4,058,917
Disability Benefits	307,532	315,553
Death Benefits	291,555	294,890
<b>Total Normal Cost</b>	<b>\$ 14,137,051</b>	<b>\$ 14,603,164</b>

### B. Unfunded Actuarial Accrued Liability

The Actuarial Accrued Liability is the present value of projected plan benefits for current plan participants allocated to past service by the actuarial funding method being used. The Unfunded Actuarial Accrued Liability is the excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.

Development of Unfunded Actuarial Accrued Liability	January 1, 2017	January 1, 2018
1. Actuarial Accrued Liability		
a. Active Participants		
Retirement Benefits	\$ 199,692,324	\$ 204,809,767
Withdrawal Benefits	3,777,286	3,934,291
Disability Benefits	2,911,938	2,998,623
Death Benefits	4,355,628	4,461,186
Total	\$ 210,737,176	\$ 216,203,867
b. Participants with Deferred Benefits	19,388,395	21,293,145
c. Participants Receiving Benefits	279,368,345	294,092,120
<b>d. Total (a. + b. + c.)</b>	<b>\$ 509,493,916</b>	<b>\$ 531,589,132</b>
2. Actuarial Value of Assets	\$ 357,495,370	\$ 378,292,120
<b>3. Unfunded Actuarial Accrued Liability (1.d. – 2.)</b>	<b>\$ 151,998,546</b>	<b>\$ 153,297,012</b>

## Section 1.5: Present Value of Projected Plan Benefits

The present value of projected benefits is the value of plan benefits for current plan participants reflecting future expected earnings and service.

Present Value of Projected Benefits	January 1, 2017	January 1, 2018
1. Active Participants		
Retirement Benefits	\$ 265,968,577	\$ 273,213,118
Withdrawal Benefits	32,183,571	33,753,536
Disability Benefits	4,947,794	5,092,654
Death Benefits	6,220,009	6,356,730
Total	\$ 309,319,951	\$ 318,416,038
2. Participants with Deferred Benefits	19,388,395	21,293,145
3. Participants Receiving Benefits	279,368,345	294,092,120
<b>4. Present Value of Projected Plan Benefits (1. + 2. + 3.)</b>	<b>\$ 608,076,691</b>	<b>\$ 633,801,303</b>

**Section 1.6: Ten-Year Projected Cash Flow (Retirement Benefit Payments)**

Plan Year Ending	Actives	Retirees <sup>1</sup>	Total
12/31/2018	\$ 3,565,375	\$ 30,435,154	\$ 34,000,529
12/31/2019	5,889,471	30,237,654	36,127,125
12/31/2020	7,974,307	30,037,983	38,012,290
12/31/2021	9,777,296	29,818,085	39,595,381
12/31/2022	11,801,089	29,594,014	41,395,103
12/31/2023	\$ 13,887,651	\$ 29,300,129	\$ 43,187,780
12/31/2024	15,899,438	28,967,111	44,866,549
12/31/2025	18,029,548	28,651,315	46,680,863
12/31/2026	20,535,636	28,187,701	48,723,337
12/31/2027	23,121,459	27,725,163	50,846,622

History of Refunds	
Year	Refund Amount
1993	\$ 633,773
1994	544,504
1995	976,233
1996	1,003,922
1997	1,037,519
1998	1,132,847
1999	1,292,444
2000	1,407,960
2001	1,597,686
2002	998,709
2003	1,414,807
2004	1,634,848
2005	1,755,564
2006	1,545,738
2007	1,841,048
2008	1,997,056
2009	1,912,000
2010	1,775,640
2011	2,222,415
2012	1,548,635
2013	2,152,586
2014	1,812,170
2015	2,669,776
2016	2,750,891
2017	2,580,883

<sup>1</sup> Includes Disabled Members, Beneficiaries, and Deferred Vested Members.

## Section 2: Accounting Results (GASB 25)

### Section 2.1: Historical Exhibits

#### Supplementary Schedules

Governmental Accounting Standards Board (GASB) Statement No. 25 (GASB 25) - Financial Reporting for Defined Benefit and Note Disclosures for Defined Contribution Plans was effective for periods between June 15, 1996 and June 15, 2013. GASB No. 25 was replaced by GASB No. 67 (GASB 67) – Financial Reporting for Pension Plans effective for fiscal years beginning after June 15, 2013. GASB 67 information for the Plan is provided in a separate report.

#### A. Schedule of Funding Progress

GASB 25 liabilities and assets for years ending in 2004 through 2013 are shown below.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b-a)/c]
01/01/2005	\$ 219,697,172	\$ 249,693,945	\$ 29,996,773	88.0%	\$ 92,757,865	32.3%
01/01/2006	\$ 234,660,873	\$ 270,180,072	\$ 35,519,199	86.9%	\$ 98,915,975	35.9%
01/01/2007	\$ 257,214,257	\$ 293,358,174	\$ 36,143,917	87.7%	\$ 103,402,651	35.0%
01/01/2008	\$ 285,740,434	\$ 312,549,096	\$ 26,808,662	91.4%	\$ 105,140,088	25.5%
01/01/2009	\$ 249,776,755	\$ 331,357,842	\$ 81,581,037	75.4%	\$ 102,703,108	79.4%
01/01/2010	\$ 282,841,807	\$ 354,376,983	\$ 71,535,176	79.8%	\$ 106,956,655	66.9%
01/01/2011	\$ 285,036,737	\$ 375,801,894	\$ 90,765,157	75.8%	\$ 112,232,244	80.9%
01/01/2012	\$ 280,213,871	\$ 393,086,243	\$ 112,872,372	71.3%	\$ 116,611,366	96.8%
01/01/2013	\$ 278,031,207	\$ 414,530,914	\$ 135,899,707	67.2%	\$ 115,762,200	117.4%
01/01/2014	\$ 301,765,407	\$ 434,464,401	\$ 132,698,994	69.5%	\$ 124,039,614	107.0%



## Section 2.1: Historical Exhibits (continued)

### B. Schedule of Employer Contributions

GASB 25 required contributions and actual contribution percentages for years ending in 2004 through 2013 are shown below.

Year Ended December 31	Annual Required Contribution <sup>1</sup>	Percentage Contributed
2004	\$ 5,951,443	92%
2005	\$ 6,551,304	87%
2006	\$ 7,387,051	83%
2007	\$ 8,158,839	77%
2008	\$ 7,724,074	82%
2009	\$ 10,945,353	56%
2010	\$ 9,603,845	75%
2011	\$ 10,733,979	74%
2012	\$ 11,299,311	77%
2013	\$ 13,574,900	66%

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<sup>1</sup> Beginning of year.

## Section 3: Plan Assets

This section presents information regarding plan assets as reported by the plan administrator and/or the auditor. The plan assets represent the portion of total plan liabilities which has been funded as of the valuation date.

- Section 3.1** A summary of the Market Value of Assets.
- Section 3.2** A reconciliation of the Market Value of Assets.
- Section 3.3** The Actuarial Value of Plan Assets.
- Section 3.4** A history of the average annual rates of investment return.

## Section 3.1: Summary of Assets

Asset Category	Market Value as of December 31, 2016		Market Value as of December 31, 2017	
	Amount	%	Amount	%
<b>1. Cash and Short-Term Investments</b>	\$ 4,230,851	1.2	\$ 4,806,131	1.3
<b>2. Receivables</b>				
a. Investment Distributions	\$ 0	0.0	\$ 0	0.0
b. Interest and Dividends	-	0.0	0	0.0
c. Investments Sold	115,426	0.0	301,446	0.1
d. Other Receivables	154,208	0.0	151,187	0.0
e. Total	\$ 269,634	0.0	\$ 452,633	0.1
<b>3. Investments at Fair Value</b>				
a. U.S. Treasury Notes	\$ 0	0.0	\$ 0	0.0
b. Fixed Income	47,213,983	13.7	66,783,097	17.4
c. Domestic Stocks and Equity	141,774,314	41.1	63,751,995	16.6
d. International Equity	60,259,571	17.4	152,688,716	39.7
e. Real Estate	75,444,194	21.8	78,222,823	20.4
f. Fund of Hedge Funds	16,915,414	4.9	17,943,391	4.7
g. Total	\$ 341,607,476	98.9	\$ 379,390,022	98.8
<b>4. Fixed Assets</b>	\$ 423,261	0.1	\$ 330,119	0.1
<b>5. Total Assets</b>	\$ 346,531,222	100.2	\$ 384,978,905	100.3
<b>6. Liabilities</b>				
a. Payable for Investments Purchased	\$ 286,137	0.1	\$ 477,684	0.1
b. Securities Lending Obligation in Excess of Collateral	0	0.0	0	0.0
c. Accounts Payable and Accrued Liabilities	480,530	0.1	909,773	0.2
d. Total	\$ 766,667	0.2	\$ 1,387,457	0.3
<b>7. Net Assets for Pension Benefits [5. – 6.d.]</b>	\$ 345,764,555	100.0	\$ 383,591,448	100.0

## Section 3.2: Reconciliation of Assets

	2016 Plan Year	2017 Plan Year
<b>1. Contributions</b>		
a. Contributions from Employers	\$ 11,315,200	\$ 11,941,183
b. Contributions from Plan Members	11,757,671	12,526,961
c. Total	\$ 23,072,871	\$ 24,468,144
<b>2. Net Investment Income</b>		
a. Interest and Dividends	\$ 3,432,955	\$ 5,906,200
b. Net Appreciation (Depreciation)	27,028,478	41,223,993
c. Miscellaneous	7,438	465,966
d. Total	\$ 30,468,871	\$ 47,596,159
e. Investment Expense	\$ (1,068,507)	\$ (1,489,146)
f. Net Investment Income	\$ 29,400,364	\$ 46,107,013
<b>3. Benefits and Expenses</b>		
a. Retirement Benefits	\$ 26,159,836	\$ 28,096,623
b. Refund of Contributions	2,750,891	2,580,883
c. Death	850,174	1,283,688
d. Supplemental Payment	N/A	N/A
e. Administrative Expenses	685,555	787,070
f. Total	\$ 30,446,456	\$ 32,748,264
<b>4. Net Increase/(Decrease) [1c. + 2f. - 3f.]</b>	<b>\$ 22,026,779</b>	<b>\$ 37,826,893</b>
<b>5. Net Assets Held in Trust for Pension Benefits</b>		
a. Beginning of Year	\$ 323,737,776	\$ 345,764,555
b. End of Year	\$ 345,764,555	\$ 383,591,448

### Section 3.3: Actuarial Value of Assets

Schedule of Investment Gains/(Losses)				
Year Ending December 31	Original Amount	Recognized in Prior Years	Recognized This Year	Recognized in Future Years
2013	\$ 17,857,284	\$ 14,285,828	\$ 3,571,456	\$ 0
2014	(3,391,713)	(2,035,029)	(678,343)	(678,341)
2015	(28,304,357)	(11,321,742)	(5,660,871)	(11,321,744)
2016	3,796,285	759,257	759,257	2,277,771
2017	18,777,053	0	3,755,411	15,021,642
<b>Total</b>	<b>\$ 8,734,552</b>	<b>\$ 1,688,314</b>	<b>\$ 1,746,910</b>	<b>\$ 5,299,328</b>

Development of Actuarial Value of Assets	
1. Market Value of Assets as of January 1, 2018	\$ 383,591,448
2. Deferred Investment Gain/(Loss)	\$ 5,299,328
3. Initial Actuarial Value of Assets as of January 1, 2018 (1. - 2.)	\$ 378,292,120
4. Constraining Values:	
a. 80% of Market Value (1. x .8)	\$ 306,873,159
b. 120% of Market Value (1. x 1.2)	\$ 460,309,738
<b>5. Actuarial Value of Assets as of January 1, 2018 (3.), but not less than (4.a.), nor greater than (4.b.)</b>	<b>\$ 378,292,120</b>

### Section 3.4: Average Annual Rates of Investment Return

Year Ending December 31	Actuarial Value		Market Value	
	Annual	Cumulative	Annual	Cumulative
1995	11.2%	11.2%	21.4%	21.4%
1996	12.0%	11.6%	16.4%	18.9%
1997	12.4%	11.9%	16.5%	18.1%
1998	14.0%	12.4%	11.4%	16.4%
1999	13.7% <sup>1</sup>	12.7%	4.8%	14.0%
2000	9.5%	12.1%	0.8%	11.7%
2001	5.7%	11.2%	(2.5%)	9.5%
2002	(2.4%)	9.4%	(8.0%)	7.2%
2003	3.0%	8.7%	26.3%	9.1%
2004	5.7%	8.4%	10.9%	9.3%
2005	6.9%	8.2%	5.9%	9.0%
2006	9.9%	8.4%	14.8%	9.5%
2007	12.1%	8.6%	7.3%	9.3%
2008	(11.5%)	7.1%	(28.1%)	6.1%
2009	15.6%	7.6%	16.1%	6.7%
2010	2.3%	7.3%	13.4%	7.1%
2011	0.0%	6.8%	(2.0%)	6.6%
2012	0.7%	6.5%	12.3%	6.9%
2013	10.4%	6.7%	14.4%	7.3%
2014	9.1%	6.8%	6.9%	7.2%
2015	6.3%	6.8%	(0.7%)	6.8%
2016	7.7%	6.6%	9.2%	6.3%
2017	8.2%	6.8%	13.5%	7.0%

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<sup>1</sup> Includes change in asset valuation method.

## Section 4: Basis of Valuation

This section describes the basis of the valuation. The participant data, plan provisions and actuarial basis are the foundation of the valuation, since these are the present facts on which the projection of benefit payments will depend. The valuation is based on the premise that the Plan will continue in existence with no future changes.

**Section 4.1** The participant data used for the actuarial valuation.

**Section 4.2** The plan provisions reflected in the actuarial valuation.

**Section 4.3** The actuarial funding method, procedures and actuarial assumptions.

## Section 4.1: Plan Participants

### A. Participant Data Reconciliation

	Inactive Members <sup>1</sup>					Total
	Active Members	Deferred Benefits <sup>2</sup>	Retired Members	Disabled Members	Beneficiaries	
<b>As of January 1, 2017</b>	<b>2,669</b>	<b>306</b>	<b>1,440</b>	<b>15</b>	<b>109</b>	<b>4,539</b>
Age Retirements	(83)	(12)	95	-	-	-
Disability Retirements	-	(1)	-	1	-	-
Deaths Without Beneficiary	(2)	(1)	(23)	-	(10)	(36)
Deaths with Beneficiary	(1)	1	(6)	-	11	5
Non-vested Terminations	(242)	-	-	-	-	(242)
Vested Terminations	(41)	41	-	-	-	-
Rehires	23	-	(1)	-	-	22
Cash-outs	(27)	(4)	-	-	-	(31)
Expiration of Benefits	-	-	-	-	(1)	(1)
Data Corrections	-	-	-	-	-	-
<b>Net Change</b>	<b>(373)</b>	<b>24</b>	<b>65</b>	<b>1</b>	<b>-</b>	<b>(283)</b>
New Entrants During the Year	397	-	-	-	-	397
<b>As of January 1, 2018</b>	<b>2,693</b>	<b>330</b>	<b>1,505</b>	<b>16</b>	<b>109</b>	<b>4,653</b>

<sup>1</sup> Excludes non-vested terminated members who are due a refund of member contributions as of the valuation date.

<sup>2</sup> Includes 14 deferred disableds and 3 deferred beneficiaries in 2017 and 12 deferred disableds and 4 deferred beneficiaries in 2018.



**Section 4.1: Plan Participants (continued)**

**B. Count of Active Members**

Age <sup>2</sup>	Years of Service <sup>1</sup>							Total
	0-4	5-9	10-14	15-19	20-24	25-29	Over 30	
<b>Under 20</b>	2	-	-	-	-	-	-	2
<b>20-24</b>	87	1	-	-	-	-	-	88
<b>25-29</b>	278	25	-	-	-	-	-	303
<b>30-34</b>	252	92	22	-	-	-	-	366
<b>35-39</b>	184	71	52	11	-	-	-	318
<b>40-44</b>	130	53	62	36	4	-	-	285
<b>45-49</b>	124	72	68	39	36	3	-	342
<b>50-54</b>	117	70	68	43	31	20	4	353
<b>55-59</b>	83	56	58	54	33	25	10	319
<b>60-64</b>	56	44	37	35	14	9	12	207
<b>Over 65</b>	11	17	20	13	9	5	5	80
<b>Total</b>	1,324	501	387	231	127	62	31	2,663

**C. Average Compensation**

Age <sup>2</sup>	Years of Service <sup>3</sup>							Total
	0-4	5-9	10-14	15-19	20-24	25-29	Over 30	
<b>Under 20</b>	-	-	-	-	-	-	-	-
<b>20-24</b>	\$43,803	-	-	-	-	-	-	\$44,096
<b>25-29</b>	\$50,197	\$59,180	-	-	-	-	-	\$50,938
<b>30-34</b>	\$51,751	\$59,486	\$62,480	-	-	-	-	\$54,340
<b>35-39</b>	\$51,886	\$63,318	\$69,435	\$70,475	-	-	-	\$57,951
<b>40-44</b>	\$52,078	\$62,821	\$63,615	\$73,581	\$75,006	-	-	\$59,623
<b>45-49</b>	\$51,432	\$57,380	\$62,715	\$71,352	\$80,734	\$69,580	-	\$60,443
<b>50-54</b>	\$49,380	\$58,058	\$64,539	\$63,748	\$69,385	\$64,110	\$64,677	\$58,536
<b>55-59</b>	\$49,818	\$51,865	\$58,384	\$63,423	\$73,915	\$75,220	\$78,184	\$59,411
<b>60-64</b>	\$52,442	\$52,563	\$54,958	\$60,713	\$68,274	\$57,776	\$67,989	\$56,520
<b>Over 65</b>	\$60,491	\$53,845	\$68,957	\$50,206	\$44,569	\$70,752	\$68,538	\$58,877
<b>Total</b>	\$50,674	\$58,233	\$63,001	\$65,587	\$72,075	\$68,471	\$70,939	\$56,852

<sup>1</sup> Attained service at valuation date. Excludes 30 members on leave of absence.

<sup>2</sup> Attained age last birthday.

<sup>3</sup> Average Compensation is not shown for groupings of less than 3 members.

**Section 4.1: Plan Participants (continued)**

**D. Inactive Members - Annual Benefits**

Attained Age	Members With Deferred Benefits <sup>1</sup>		Retired Members <sup>2</sup>		Beneficiaries	
	No.	Benefit	No.	Benefit	No.	Benefit
Under 50	150	\$ 1,293,787	4	\$ 113,482	4	\$ 36,956
50 - 54	85	758,879	47	1,709,732	4	77,134
55 - 59	70	674,194	157	3,991,148	7	163,936
60 – 64	22	188,810	293	6,380,718	4	41,405
65 - 69	3	28,453	388	7,491,971	20	180,807
70 - 74	-	-	299	4,680,054	20	220,659
75 - 79	-	-	159	2,280,498	19	249,294
80 - 84	-	-	102	1,316,877	13	150,790
Over 84	-	-	72	762,006	18	188,089
<b>Total</b>	<b>330</b>	<b>\$ 2,944,123</b>	<b>1,521</b>	<b>\$ 28,726,486</b>	<b>109</b>	<b>\$ 1,309,070</b>

<sup>1</sup> Includes 12 deferred disabled participants and 4 deferred beneficiaries.

<sup>2</sup> Includes 16 disabled participants.

**Section 4.1: Plan Participants (continued)**

**E. Participant Statistics**

Inactive Participants as of January 1, 2018	No.	Amount of Annual Benefit
<b>Participants Receiving Benefits</b>		
• Retired	1,521	\$ 28,726,486
• Beneficiaries	109	1,309,070
<b>Total</b>	<b>1,630</b>	<b>\$ 30,035,556</b>
<b>Participants with Deferred Benefits</b>		
• Vested Terminated	314	\$ 2,708,141
• Beneficiaries	4	33,272
• Disabled	12	202,710
<b>Total</b>	<b>330</b>	<b>\$ 2,944,123</b>

Statistics for Active Participants as of January 1, 2017	No.	Age	Average	
			Service <sup>1</sup>	Earnings
• Continuing <sup>2</sup>	2,226	45.8	9.1	\$ 56,864
• New <sup>3</sup>	431	37.8	0.9	46,487
<b>Total</b>	<b>2,657</b>	<b>44.5</b>	<b>7.8</b>	<b>\$ 55,181</b>
<b>As of January 1, 2018<sup>2</sup></b>				
• Continuing	2,236	45.7	9.1	\$ 58,579
• New <sup>3</sup>	427	36.3	0.7	47,806
<b>Total</b>	<b>2,663</b>	<b>44.2</b>	<b>7.8</b>	<b>\$ 56,852</b>

<sup>1</sup> Service since date of hire.

<sup>2</sup> Excludes 12 members on leave of absence in 2017 and 30 members on leave of absence in 2018.

<sup>3</sup> Includes rehires.

**Section 4.1: Plan Participants (continued)**

**F. Projected Participant Counts**

Year	Actives	Participants Receiving Benefits <sup>1</sup>	Participants with Deferred Benefits	Total
2018	2,693	1,646	314	4,653
2019	2,337	1,819	362	4,518
2020	2,057	1,967	402	4,426
2021	1,830	2,098	436	4,364
2022	1,634	2,233	474	4,341
2023	1,464	2,361	513	4,338
2024	1,315	2,482	550	4,347
2025	1,182	2,599	590	4,371
2026	1,062	2,709	632	4,403
2027	956	2,804	665	4,425
2028	859	2,880	689	4,428
2029	772	2,946	710	4,428
2030	696	2,993	728	4,417
2031	628	3,025	743	4,396
2032	565	3,048	755	4,368
2033	507	3,059	765	4,331
2034	454	3,061	772	4,287
2035	406	3,053	778	4,237
2036	360	3,038	782	4,180
2037	316	3,018	783	4,117
2038	276	2,990	783	4,049
2039	237	2,958	781	3,976
2040	201	2,919	778	3,898
2041	168	2,874	773	3,815
2042	138	2,822	767	3,727
2043	111	2,762	760	3,633
2044	88	2,693	751	3,532
2045	69	2,614	742	3,425
2046	53	2,527	732	3,312
2047	41	2,431	721	3,193
2048	32	2,330	709	3,071

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<sup>1</sup> Includes Disabled Members, Beneficiaries, and Deferred Vested Members.

## Section 4.2: Summary of Plan Provisions

### Effective Date and Plan Year

Originally effective September 1, 1967; the plan was last amended and restated effective January 1, 2013. The plan year is January 1, through December 31.

### Administration

The plan is administered by the El Paso County Board of Retirement which consists of five voting members and two Associate members. The five voting members include the Treasurer of El Paso County, two non-elected employees of participating employers, and two registered electors of El Paso County appointed by the Board of County Commissioners.

### Type of Plan

A self-administered defined benefit pension plan.

### Employers Included

El Paso County, Colorado, El Paso County Health Department, Pikes Peak Library District, Office of the 4<sup>th</sup> Judicial District, El Paso County Board of Retirement.

### Employees Included

A Covered Employee is any elected or appointed officer or any person employed by the employer who is defined as a full-time employee or a job-share employee by the employer. A Covered Employee participates in the plan on the first date of employment.

### Service

Credited Service is the sum of Past Service, Membership Service and Purchased Service and is used in determining the amount of pension benefits and benefit eligibility. Past Service and Membership Service are periods of employment before and after September 1, 1967, respectively, and are measured in years and months. Past Service is limited to five years, and Purchased Service is also limited to 5 years and is subject to additional conditions.

### Compensation

Total regular compensation excluding bonuses, extra pay, overtime, etc., but including any deferred compensation. The amount of compensation for plan purposes for any participant, who first became a participant on or after January 1, 1996, is limited in any year to a maximum of \$260,000 (as indexed).

### Final Average Monthly Compensation

The average compensation of the highest paid 36 consecutive calendar months within the last 120 calendar months of Credited Service.

### Employer Contributions

The Employer will contribute an amount that along with member contributions will be sufficient to provide benefits provided by the plan and pay all administrative expenses of the plan. Such Employer contributions cannot exceed member contribution amounts. Under CO statute, members must contribute at least as much as their employer.

## Section 4.2: Summary of Plan Provisions (continued)

### Member Contributions

Effective January 1, 1986, members are required to make monthly contributions equal to 6% of earnings. This was increased to 6.5% effective January 1, 2010, 7.0% effective January 1, 2011, 7.5% effective January 1, 2012, and 8.0% effective January 1, 2014. The rate of interest credited on member contributions after July 1, 2005 is 3% per year monthly compounded annually, or such other rate as established by the Retirement Board.

### Normal Form of Benefit

The Normal Form of Benefit provided by the plan is a 10-year certain and life annuity payable monthly.

### Accrued Benefit

The benefit determined as for normal retirement payable at the member's normal retirement date considering current earnings and service.

### Normal Retirement Benefit

Normal retirement date for a member hired before January 1, 2010 is the first of the month on or after attainment of age 62. Normal retirement date for a member hired between January 1, 2010 and December 31, 2012 is the first of the month on or after attainment of age 62, but not before the completion of 60 months of continuous service. Normal retirement date for a member hired after December 31, 2012 is the first of the month on or after attainment of age 62, but not before the completion of 96 months of continuous service.

If hired before January 1, 2010, the monthly benefit payable at normal retirement is equal to 2.22% times final average monthly compensation, times years of Credited Service earned through December 31, 2012 plus 2.00% times final average monthly compensation, times years of Credited Service earned on or after January 1, 2013.

If hired after December 31, 2009, the monthly benefit payable at normal retirement is equal to 2.00% times final average monthly compensation, times years of Credited Service.

If hired before January 1, 2013, such benefit will not be greater than 75% of the member's final average monthly compensation. If hired after December 31, 2012, such benefit will not be greater than 60% of the member's final average monthly compensation.

### Late Retirement Benefit

The benefit is equal to the Normal Retirement Benefit, recognizing Credited Service and increased compensation to postponed retirement date.

### Special Early Retirement Benefit

A member may elect to retire with a special early benefit if the sum of his age and years of employment equals at least 75 upon termination of employment. If hired between January 1, 2010 and December 31, 2012, the member must have five or more years of Credited Service. If hired after December 31, 2012, the member must have eight or more years of Credited Service. The benefit will be equal to his accrued benefit unreduced for early payment.

### Regular Early Retirement Benefit

An active or vested terminated member may elect to retire on the first of any month after the attainment of age 55. If hired before January 1, 2013, the member must have five or more years of Credited Service. If hired after December 31, 2012, the member must have eight or more years of Credited Service. The benefit will be equal to his accrued benefit reduced by .25% per month for each month by which his early retirement date precedes age 62.

## Section 4.2: Summary of Plan Provisions (continued)

### Terminated Vested Benefit

A member who terminates employment with five or more years of Credited Service if hired before January 1, 2013, or 8 years if hired after December 31, 2012, before he is eligible to receive immediate retirement benefits may elect to receive either his accumulated contributions, in lieu of all other benefits, or his vested accrued benefit payable at his normal retirement date. The member may also elect to receive a reduced benefit at an earlier commencement date.

A member who terminates employment before becoming vested is entitled to a refund of his accumulated contributions with interest.

### Disability Benefit

An active member who becomes permanently and totally disabled under their employer's long-term disability insurance program, or Social Security disability, is entitled to receive a benefit payable at his normal retirement date. This benefit is based on his average monthly compensation for the calendar year prior to the calendar year in which disablement occurred and the Credited Service he would have accumulated to such retirement date. Payments will be made for ten years certain and life thereafter.

### Death Benefit

#### Death of a Member Prior to Benefit Commencement

In the event a member, either actively accruing service, disabled or terminated vested, dies before payments commence, the following benefits shall be paid:

If such member is not vested at his death, there shall be paid the Beneficiary the member's accumulated contributions at the date of death.

If such member is vested at his death, one of the following death benefits shall be payable to his spouse, at her sole option:

Two times the member's accumulated contributions at the date of death; or

A monthly benefit, payable for life, in an amount equal to 60% of the member's Accrued Benefit on his date of death, reduced if the spouse is more than five years younger than the member. Such death benefit shall commence on the first day of the month coincident with or following the later of the date the member would have attained age 55 or date of death. If the member dies while in active service, on or after attainment of age 62 or attainment of eligibility for immediate retirement under the rule of 75, the surviving spouse is eligible to receive a monthly benefit payable for life as if the member retired the day before death and elected the 100% joint and survivor annuity.

#### Death after Retirement

A lump sum death benefit of \$3,000 is payable to the member's designated beneficiary. In addition, applicable benefits will be paid if the member has elected an option providing for payments to a beneficiary, or has elected the normal form of benefit and dies prior to having received benefits for 120 months, or prior to having received benefits equal to his total accumulated contributions as of the date of his retirement.

### Optional Retirement Benefits

In lieu of the Normal Form of Benefit (10-year certain and life), a member may elect to receive an adjusted amount, payable for life only, or an amount payable as a 100% or 50% joint and survivor benefit. 100% and 50% joint and survivor benefits with benefits increases if beneficiary dies first are also available options.

## Section 4.3: Summary of Actuarial Methods, Procedures and Assumptions

### Actuarial Cost Method

Liabilities and contributions shown in this report are computed using the **Entry Age Normal Actuarial Cost Method**.

Under this method, the **Normal Cost** is computed as the level percentage of pay which, if paid from the earliest time each Member would have been eligible to join the Plan if it then existed (thus, entry age) until his retirement or termination, would accumulate with interest at the rate assumed in the valuation to pay all benefits under the Plan.

The Normal Cost for the Plan is determined by summing individual results for each active Member and determining an average normal cost rate by dividing the summed individual normal costs by the total payroll of Members before assumed retirement age.

The **Actuarial Accrued Liability** at any point in time is the theoretical amount of the fund that would have accumulated had annual contributions equal to the Normal Cost been made in prior years (it does not represent the liability for benefits accrued to the valuation date.) The **Unfunded Actuarial Accrued Liability** is the excess of the Actuarial Accrued Liability over the Actuarial Value of Plan Assets measured on the valuation date. The Unfunded Actuarial Accrued Liability is amortized over a 30-year period from the valuation date as a level percentage of pay.

Under this method experience gains or losses, i.e. decreases or increases in accrued liabilities attributable to deviations in experience from the actuarial assumptions, adjust the Unfunded Actuarial Accrued Liability (UAAL). Absent the emergence of actuarial gains or contributions in excess of the determined amount, the UAAL will not be fully amortized due to the use of the open amortization period.

### Asset Valuation Method

The asset valuation method recognizes 20% of the market investment gain/loss each year, for a period of 5 years. The Actuarial Value of Assets must be within 20% plus/minus of the Market Value of Assets.

### Valuation Procedures

No actuarial liability is included for members who terminated non-vested prior to the valuation date, except those due a refund of contributions.

The compensation amounts used in the projection of benefits and liabilities were January 1, 2018 rates of pay.

In computing accrued benefits, average earnings were determined using actual historical earnings supplied by the plan administrator.

Termination and retirement benefits were projected to be no greater than the dollar limitation required by Internal Revenue Code Section 415 for governmental plans.



### Section 4.3: Summary of Actuarial Methods, Procedures and Assumptions (continued)

#### Actuarial Assumptions

##### Interest

8.0% per annum, compounded annually, net of investment expenses.

##### Mortality

RP-2000 Mortality Table Projected Generationally with Scale AA Setback 1 Year for Females.

Sample rates for 2018 only are shown below:

Age	Per 100 Members	
	Male	Female
20	0.02	0.01
25	0.03	0.02
30	0.04	0.02
35	0.07	0.04
40	0.09	0.05
45	0.12	0.08
50	0.16	0.11
55	0.26	0.20
60	0.51	0.41
64	0.89	0.70

##### Withdrawal

Svc	Per 100 Members	
	Male	Female
0	20.00	20.00
1	17.50	17.50
2	12.50	17.00
3	12.50	13.00
4	10.00	12.50
5	9.00	11.00
6	7.90	9.90
7	6.80	8.80
8	6.25	8.25
9	5.40	7.40
10	4.90	6.50
11	4.50	5.50
12	4.20	5.20
13	3.85	4.85
14	3.65	4.55
15	3.15	4.15
16+	3.00	4.00

Withdrawal rates are assumed to be zero after a member becomes eligible for retirement benefits.

**Section 4.3: Summary of Actuarial Methods, Procedures and Assumptions (continued)**

**Disability**

Sample rates are as follows:

Per 100 Members	
Age	Disablement
20	0.02
25	0.03
30	0.04
35	0.06
40	0.09
45	0.13
50	0.20
55+	0.35

**Post-Disability Mortality**

The disability mortality is based on the RP-2000 Disabled Mortality Table. Sample rates are as follows:

Per 100 Members		
Age	Male	Female
20	2.26	0.75
25	2.26	0.75
30	2.26	0.75
35	2.26	0.75
40	2.26	0.75
45	2.26	0.75
50	2.90	1.15
55	3.54	1.65
60	4.20	2.18
64	4.83	2.66

**Salary Increases**

Anticipated salary increases include both inflationary and merit increases. Merit increases are anticipated to be greater earlier in a member’s career. Sample rates are as follows:

Service	Percentage Increase at Attained Service		
	Merit	Inflation	Total
0	4.12%	3.50%	7.76%
5	1.99	3.50	5.55
10	1.21	3.50	4.75
15	0.89	3.50	4.42
20	0.56	3.50	4.08
25+	0.24	3.50	3.75

### Section 4.3: Summary of Actuarial Methods, Procedures and Assumptions (continued)

#### Salary Limit Increases

3.50% per year.

#### Refund Assumption for Active Members Who Withdraw:

Service	Percent Electing Refund
0-4	100%
5	40%
6	35%
7	30%
8	25%
9	25%
10+	25%

#### Retirement Rates

According to the following table based on eligibility for reduced or unreduced retirement benefits.

Attained Age	Per 100 Members	
	Unreduced	Reduced
49 & Before	30	-
50	35	-
51	20	-
52	20	-
53	20	-
54	20	-
55	25	15
56	15	5
57	15	5
58	15	10
59	15	10
60	20	10
61	25	10
62	30	-
63	20	-
64	20	-
65	25	-
66	25	-
67-69	20	-
70-74	40	-
75+	100	-

#### Expense Loading

Loading for administrative expenses is based on an estimate for the year, provided by the Retirement Board. For 2018, the administrative expense loading is \$741,257.

### Section 4.3: Summary of Actuarial Methods, Procedures and Assumptions (continued)

#### **Percent Married**

85% of all members are assumed to have eligible spouses.

#### **Age Difference**

A husband is assumed to be three years older than his wife.

#### **Age for Commencement of Deferred Vested Benefits**

Active Members

55

Terminated Members

57, or earlier if eligible for Rule of 75 before age 57

#### **Amortization of the Unfunded Actuarial Accrued Liability**

The unfunded actuarial accrued liability is amortized as a level percent of payroll over an open amortization period of 30 years. Payroll is assumed to increase 3.5% per year for this purpose.

# Glossary of Terms

## **Actuarial Accrued Liability**

Total accumulated cost to fund pension benefits arising from service in all prior years.

## **Actuarial Cost Method**

Technique used to assign or allocate, in a systematic and consistent manner, the expected cost of a pension plan for a group of plan members to the years of service that give rise to that cost.

## **Actuarial Present Value of Projected Benefits**

Amount which, together with future interest, is expected to be sufficient to pay all future benefits.

## **Actuarial Valuation**

Study of probable amounts of future pension benefits and the necessary amount of contributions to fund those benefits.

## **GASB 25**

Governmental Accounting Standards Board Statement Number 25, which specifies how the Annual Required Contribution (ARC) is to be calculated for fiscal years prior to June 15, 2013.

## **GASB 67**

Governmental Accounting Standards Board Statement Number 67 amends Number 25 effective for the fiscal year beginning after June 15, 2013, and defines new financial reporting requirements for public pension plans.

## **Normal Cost**

That portion of the actuarial present value of benefits assigned to a particular year in respect to an individual participant or the plan as a whole.

## **Unfunded Actuarial Accrued Liability (UAAL)**

The portion of the actuarial accrued liability not offset by plan assets.

## **Vested Benefits**

Benefits which are unconditionally guaranteed regardless of employment.

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