

Summary of Retirement Plan Costs

	Hired after May 31, 2010 January 1, 2019		Current Assumptions Hired before June 1, 2010 January 1, 2019		Total January 1, 2019		Prior Assumptions Total January 1, 2019		Total January 1, 2018	
	Cost Data	% of Payroll	Cost Data	% of Payroll	Cost Data	% of Payroll	Cost Data	% of Payroll	Cost Data	% of Payroll
A. Participant Data Summary (Table III)										
1. Active Employees	45	N/A	78	N/A	123	N/A	123	N/A	117	N/A
2. Terminated Vested	0	N/A	22	N/A	22	N/A	22	N/A	25	N/A
3. Receiving Benefits	0	N/A	186	N/A	186	N/A	186	N/A	187	N/A
4. Total Participants	45	N/A	286	N/A	331	N/A	331	N/A	329	N/A
5. Annual Payroll of Active Employees	\$ 3,349,446	100.0%	\$ 6,731,350	100.0%	\$ 10,080,796	100.0%	\$ 10,080,796	100.0%	\$ 9,210,384	100.0%
B. Total Normal Costs										
1. Age Retirement Benefits	\$ 271,721	8.1%	\$ 963,625	14.3%	\$ 1,235,346	12.3%	\$ 1,292,459	12.8%	\$ 1,228,460	13.3%
2. Deferred Vesting Benefits	35,689	1.1%	116,797	1.7%	152,486	1.5%	157,242	1.6%	149,178	1.6%
3. Death Benefits	26,472	0.8%	60,662	0.9%	87,134	0.9%	86,265	0.9%	78,308	0.9%
4. Disability Benefits	11,038	0.3%	47,027	0.7%	58,065	0.6%	59,128	0.6%	57,894	0.6%
5. Subtotal	\$ 344,920	10.3%	\$ 1,188,111	17.7%	\$ 1,533,031	15.2%	\$ 1,595,094	15.8%	\$ 1,513,840	16.4%
6. Administrative Expenses	N/A		N/A		64,422	0.6%	64,422	0.6%	61,463	0.7%
7. Total Annual Normal Costs	N/A		N/A		\$ 1,597,453	15.8%	\$ 1,659,516	16.5%	\$ 1,575,303	17.1%

Summary of Retirement Plan Costs

	Current Assumptions		Prior Assumptions		January 1, 2018	
	January 1, 2019		January 1, 2019		January 1, 2018	
	Cost	% of	Cost	% of	Cost	% of
	<u>Data</u>	<u>Payroll</u>	<u>Data</u>	<u>Payroll</u>	<u>Data</u>	<u>Payroll</u>
C. Total Actuarial Accrued Liability						
1. Age Retirement Benefits Active Employees	\$ 31,902,446	316.5%	\$ 32,555,057	322.9%	\$ 31,584,721	342.9%
2. Deferred Vested Benefits Active Employees	150,475	1.5%	151,152	1.5%	146,095	1.6%
3. Death Benefits Active Employees	585,211	5.8%	567,264	5.6%	552,683	6.0%
4. Disability Benefits Active Employees	895,320	8.9%	919,929	9.1%	884,752	9.6%
5. Retired or Terminated Vested Participants Receiving Benefits	77,479,424	768.6%	77,090,421	764.7%	73,502,686	798.0%
6. Terminated Vested Participants Entitled to Future Benefits	1,832,429	18.2%	1,816,102	18.0%	2,177,928	23.6%
7. Deceased Participants Whose Beneficiaries are Receiving Benefits	5,612,780	55.7%	5,584,294	55.4%	5,956,515	64.7%
8. Disabled Participants Receiving Benefits	1,841,942	18.3%	1,834,387	18.2%	1,822,227	19.8%
9. Total Actuarial Accrued Liability	<u>\$ 120,300,027</u>	1193.4%	<u>\$ 120,518,606</u>	1195.5%	<u>\$ 116,627,607</u>	1266.3%
D. Market Value of Assets (Table IV)	\$ 87,492,294	867.9%	\$ 87,492,294	867.9%	\$ 91,629,477	994.8%
E. Smoothed Actuarial Value of Assets (Table V)	\$ 92,062,389	913.2%	\$ 92,062,389	913.2%	\$ 89,650,519	973.4%
F. Unfunded Actuarial Accrued Liability (C-E)	\$ 28,237,638	280.1%	\$ 28,456,217	282.3%	\$ 26,977,088	292.9%
G. Minimum Required Contribution						
1. Total Normal Cost	\$ 1,597,453	15.8%	\$ 1,659,516	16.5%	\$ 1,575,303	17.1%
2. Amortization of Unfunded Liability	2,611,377	25.9%	2,636,550	26.2%	2,356,433	25.6%
3. Interest Adjustment	156,779	1.6%	161,102	1.6%	147,440	1.6%
4. Total Payment	<u>\$ 4,365,609</u>	43.3%	<u>\$ 4,457,168</u>	44.2%	<u>\$ 4,079,176</u>	44.3%
H. Actuarial Gain / (Loss) (Table VI)	\$ (2,093,983)	(20.8%)	\$ (2,093,983)	(20.8%)	\$ 628,492	6.8%

Summary of Retirement Plan Costs

	Current Assumptions January 1, 2019		Prior Assumptions January 1, 2019		January 1, 2018	
	<u>Cost Data</u>	<u>% of Payroll</u>	<u>Cost Data</u>	<u>% of Payroll</u>	<u>Cost Data</u>	<u>% of Payroll</u>
I. Actuarial Present Value of Vested Accrued Benefits						
1. Retired, Terminated Vested, Beneficiaries, Disabled Receiving Benefits	\$ 84,934,146	842.5%	\$ 84,509,102	838.3%	\$ 81,281,428	882.5%
2. Terminated Vested Participants Entitled to Future Benefits	1,832,429	18.2%	1,816,102	18.0%	2,177,928	23.6%
3. Active Participants Entitled to Future Benefits	<u>24,925,491</u>	<u>247.3%</u>	<u>24,927,380</u>	<u>247.3%</u>	<u>24,233,076</u>	<u>263.1%</u>
4. Total Actuarial Present Value of Vested Accrued Benefits	\$ 111,692,066	1108.0%	\$ 111,252,584	1103.6%	\$ 107,692,432	1169.3%
J. Unfunded Actuarial Present Value of Vested Accrued Benefits (I.4 - D., not less than zero)	\$ 24,199,772	240.1%	\$ 23,760,290	235.7%	\$ 16,062,955	174.4%
K. Vested Benefit Security Ratio (D. ÷ I.4.)	78.3%	N/A	78.6%	N/A	85.1%	N/A

Comparison of Cost Data of January 1, 2018 and January 1, 2019 Valuations

	Current Assumptions January 1, 2019		Prior Assumptions January 1, 2019		January 1, 2018	
	Cost Data	% of Annual Compensation	Cost Data	% of Annual Compensation	Cost Data	% of Annual Compensation
A. Participants						
1. Active Employees	123	N/A	123	N/A	117	N/A
2. Terminated Vested	22	N/A	22	N/A	25	N/A
3. Receiving Benefits	186	N/A	186	N/A	187	N/A
4. Annual Payroll of Active Employees	\$ 10,080,796	100.0%	\$ 10,080,796	100.0%	\$ 9,210,384	100.0%
B. Total Normal Costs	\$ 1,597,453	15.8%	\$ 1,659,516	16.5%	\$ 1,575,303	17.1%
C. Total Actuarial Accrued Liability	\$ 120,300,027	1193.4%	\$ 120,518,606	1195.5%	\$ 116,627,607	1266.3%
D. Smoothed Actuarial Value of Assets	\$ 92,062,389	913.2%	\$ 92,062,389	913.2%	\$ 89,650,519	973.4%
E. Unfunded Actuarial Accrued Liability	\$ 28,237,638	280.1%	\$ 28,456,217	282.3%	\$ 26,977,088	292.9%
F. Net Minimum Funding Payment	\$ 4,365,609	43.3%	\$ 4,457,168	44.2%	\$ 4,079,176	44.3%
G. Actuarial Gain / (Loss)	\$ (2,093,983)	(20.8%)	\$ (2,093,983)	(20.8%)	\$ 628,492	6.8%
H. Unfunded Actuarial Present Value of Vested Accrued Benefits	\$ 24,199,772	240.1%	\$ 23,760,290	235.7%	\$ 16,062,955	174.4%
I. Vested Benefit Security Ratio	78.3%	N/A	78.6%	N/A	85.1%	N/A

**Characteristics of Participants in
Actuarial Valuation as of January 1, 2019**

A. Active Plan Participants Summary

1. Active participants as of beginning of prior year	117
2. New entrants during prior year	11
3. Exits during prior year	(5)
4. Active participants as of beginning of year	123
5. Active participants fully vested	69
6. Active participants partially vested	17
7. Active participants non-vested	37
8. Annual payroll of active participants	\$ 10,080,796
9. Average pay	\$ 81,958
10. Average hire age	32.65 years
11. Average attained age	44.24 years
12. Percent female	31.7%

B. Characteristics of Inactive Participants

1. Inactives as of beginning of prior year	212
2. Newly inactive during prior year	5
3. Exits during prior year	(9)
4. Inactives as of beginning of year	208
5. Age retirees	159
6. Projected annual benefits for age retirees	\$ 5,870,806
7. Beneficiaries of deceased participants	19
8. Projected annual benefits for beneficiaries	\$ 456,385
9. Disabled participants receiving benefits	8
10. Projected annual benefits for disabled participants	\$ 180,358
11. Terminated vested due deferred benefits	22
12. Projected annual benefits for terminated vested participants	\$ 194,112

Statement of Assets as of January 1, 2019 *

<u>Assets</u>	<u>Market Value</u>
<u>Investments at Market Value</u>	
Cash and Cash Equivalents	\$ 2,773,886
Bonds	9,990,638
Mutual Funds	
- Asset Allocation Fund	4,400,916
- Vanguard Domestic Stock Mutual Fund	14,257,806
- Vanguard International Stock Mutual Fund	4,768,508
- Global Bond Mutual Fund	3,932,256
- International Growth Mutual Fund	5,317,754
International Equities	0
Common Stocks	33,218,968
Real Estate	8,426,726
Total Investments	<u>\$ 87,087,458</u>
<u>Receivables</u>	
Accrued Interest	\$ 83,775
Pending Trades	98,042
Utility Board Contributions	7,347
Miscellaneous	666
Total Receivables	<u>\$ 189,830</u>
<u>Other - Prepaid Benefits and Expenses</u>	\$ 523,461
<u>Liabilities</u>	
Accrued Benefits and Expenses	\$ 33,356
Accounts Payable	56,198
Pending Trades	218,901
Total Liabilities	<u>\$ 308,455</u>
<u>Net Assets Available for Benefits</u>	\$ 87,492,294

* As reported on financial statements prepared by the Utility Board.

Reconciliation of Plan Assets *

A. <u>Market Value of Assets as of January 1, 2018</u>	\$ 91,629,477
B. <u>Receipts During Year</u>	
1. Utility Board contributions	\$ 4,175,289
2. Interest, dividends and other	
(a) Dividends, interest and other	\$ 3,100,542
(b) Investment fees	420,860
(c) Net dividends, interest and other [(a)-(b)]	<u>\$ 2,679,682</u>
3. Realized gains / (losses)	\$ 5,485,541
4. Unrealized gains / (losses)	<u>\$ (10,126,290)</u>
5. Net receipts during year	\$ 2,214,222
C. <u>Disbursements During Year</u>	
1. Pension benefit payments	\$ 6,275,076
2. Contribution refunds	0
3. Administrative expenses paid	<u>76,329</u>
4. Total disbursements during year	\$ 6,351,405
D. <u>Market Value of Assets as of December 31, 2018</u>	\$ 87,492,294

* As reported on financial statements prepared by the Utility Board.

Development of Smoothed Actuarial Value of Assets as of December 31

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
A. Preliminary smoothed actuarial value from prior year	\$ 84,366,073	\$ 89,650,519	\$ 92,062,389			
B. Market value end of year	91,629,477	87,492,294				
C. Market value beginning of year	80,916,572	91,629,477	87,492,294			
D. Non-investment net cash flow	(1,921,634)	(2,176,116)				
E. Investment return						
1. Total market value return: B. - C. - D.	12,634,539	(1,961,067)				
2. Amount for immediate recognition (7.5%)	5,996,682	6,790,606				
3. Amount for phased-in recognition: E.1. - E.2.	6,637,857	(8,751,673)				
F. Phased-in recognition of investment return						
1. Current year: 20% of E.3.	1,327,571	(1,750,335)				
2. First prior year	(130,890)	1,327,571	(1,750,335)			
3. Second prior year	(1,289,693)	(130,890)	1,327,571	(1,750,335)		
4. Third prior year	(359,272)	(1,289,693)	(130,890)	1,327,571	(1,750,335)	
5. Fourth prior year	1,661,682	(359,273)	(1,289,693)	(130,889)	1,327,573	(1,750,333)
6. Total phased-in recognition of investment return	1,209,398	(2,202,620)	(1,843,347)	(553,653)	(422,762)	(1,750,333)
G. Smoothed actuarial value end of year						
1. Preliminary smoothed actuarial value end of year:						
A. + D. + E.2. + F.6.	89,650,519	92,062,389				
2. Upper corridor limit:120% of B.	109,955,372	104,990,753				
3. Lower corridor limit: 80% of B.	73,303,582	69,993,835				
4. Smoothed actuarial value end of year:						
G.1., not more than G.2., nor less than G.3.	89,650,519	92,062,389				
H. Difference between market value and smoothed actuarial value	1,978,958	(4,570,095)				
I. Smoothed actuarial value rate of return	8.6%	5.2%				
J. Market value rate of return	15.8%	(2.2%)				

Actuarial Gain / (Loss) for
System Year Ended December 31, 2018

A. Derivation of Actuarial Gain / (Loss)

1. Normal cost previous actuarial valuation	\$ 1,575,303
2. Unfunded actuarial accrued liability previous actuarial valuation	26,977,088
3. Utility Board contributions	4,175,289
4. Interest on:	
(a) Normal cost	\$ 118,148
(b) Unfunded actuarial accrued liability	2,023,282
(c) Utility Board contributions	156,298
(d) Net total: (a) + (b) - (c)	<u>\$ 1,985,132</u>
5. Increase / (decrease) in unfunded actuarial accrued liability due to assumption change	\$ (218,579)
6. Expected unfunded actuarial accrued liability current year: (1. + 2. - 3. + 4. + 5.)	\$ 26,143,655
7. Actual unfunded actuarial accrued liability current year	<u>28,237,638</u>
8. Actuarial gain / (loss): (6. - 7.)	<u>\$ (2,093,983)</u>

**B. Approximate Portion of Gain / (Loss)
due to Investments**

1. Smoothed actuarial value of assets previous year	\$ 89,650,519
2. Contributions during year	4,175,289
3. Benefits and administrative expenses during year	6,351,405
4. Expected appreciation for period	<u>6,641,909</u>
5. Expected smoothed actuarial value of assets current year: (1. + 2. - 3. + 4.)	\$ 94,116,312
6. Actual smoothed actuarial value of assets current year	\$ 92,062,389
7. Approximate gain / (loss) due to investments: (6. - 5.)	\$ (2,053,923)

**C. Approximate Portion of Gain / (Loss)
due to Liabilities: A.8. - B.7.**

\$ (40,060)

Amortization of Unfunded Actuarial Accrued LiabilityA. Amortization of Unfunded Accrued Liability

<u>Date</u>	<u>Unfunded Liability</u>	<u>Amortization Payment</u>
January 1, 2019	\$ 28,237,638	\$ 2,611,377
January 1, 2020	\$ 27,535,419	\$ 2,619,211
January 1, 2021	\$ 26,772,464	\$ 2,627,068
January 1, 2022	\$ 25,944,228	\$ 2,634,947
January 1, 2023	\$ 25,045,821	\$ 2,642,849
...		
...		
January 1, 2049	\$ 0	\$ 0

B. Covered Payroll History

<u>Date</u>	<u>Covered Payroll</u>	<u>Annual Increase</u>
January 1, 2019	\$ 10,080,796	9.5%
January 1, 2018	\$ 9,210,384	(4.7%)
January 1, 2017	\$ 9,667,989	4.5%
January 1, 2016	\$ 9,247,710	2.2%
January 1, 2015	\$ 9,046,826	(1.9%)
January 1, 2014	\$ 9,226,528	(3.5%)
January 1, 2013	\$ 9,558,105	(1.1%)
January 1, 2012	\$ 9,667,272	(3.4%)
January 1, 2011	\$ 10,005,398	(0.2%)
January 1, 2010	\$ 10,024,867	2.5%
January 1, 2009	\$ 9,782,010	N/A
Ten-Year Average Annual Increase		0.3%

Accounting Disclosure Exhibit

	Current Assumptions 01/01/2019	Prior Assumptions 01/01/2019	01/01/2018
I. <u>Number of System Members</u>			
1. Retirees and beneficiaries receiving benefits	186	186	187
2. Terminated System members entitled to but not yet receiving benefits	22	22	25
3. Active System members	123	123	117
4. Total	<u>331</u>	<u>331</u>	<u>329</u>
II. <u>Financial Accounting Standards Board Allocation</u>			
<u>As of January 1, 2019</u>			
A. <u>Statement of Accumulated System Benefits</u>			
1. Actuarial present value of accumulated vested System benefits			
a. Participants currently receiving benefits	\$ 84,934,146	\$ 84,509,102	\$ 81,281,428
b. Other participants	26,757,920	26,743,482	26,411,004
c. Total	<u>\$ 111,692,066</u>	<u>\$ 111,252,584</u>	<u>\$ 107,692,432</u>
2. Actuarial present value of accumulated non-vested System benefits			
	<u>\$ 803,023</u>	<u>\$ 798,573</u>	<u>\$ 743,631</u>
3. Total actuarial present value of accumulated System benefits			
	\$ 112,495,089	\$ 112,051,157	\$ 108,436,063
B. <u>Statement of Change in Accumulated System Benefits</u>			
1. Actuarial present value of accumulated System benefits as of January 1, 2018			
	\$ 108,436,063		
2. Increase / (decrease) during year attributable to:			
a. System amendment	\$ 0		
b. Change in actuarial assumptions	443,932		
c. Benefits paid	(6,275,076)		
d. Other, including benefits accumulated, increase for interest due to decrease in the discount period	9,890,170		
e. Net increase	<u>\$ 4,059,026</u>		
3. Actuarial present value of accumulated System benefits as of January 1, 2019			
	\$ 112,495,089		
C. <u>Significant Matters Affecting Calculations</u>			
1. Assumed rate of return used in determining actuarial present values		7.45%	
2. Change in System provisions		None.	
3. Change in actuarial assumptions		See Table X. Item L.	

Accounting Disclosure Exhibit

III. Net Pension Liability and Related Ratios (GASB No. 67 & No. 68)

Measurement date	Projected 12/31/2019 *	12/31/2018	12/31/2017	12/31/2016	12/31/2015	12/31/2014
A. Total Pension Liability						
Service Cost	\$ 1,533,031	\$ 1,513,840	\$ 1,653,371	\$ 1,689,246	\$ 1,615,566	\$ 1,688,924
Interest	8,831,638	8,625,293	8,313,210	8,043,700	7,503,157	7,233,694
Benefit Changes	0	0	132,646	0	0	0
Difference Between Actual and Expected Experience	26,942	333,184	(756,398)	465,515	(399,487)	(552,616)
Assumption Changes	(218,579)	0	113,197	2,800,797	0	3,883,996
Benefit Payments, including Refunds of Member Contributions	(6,575,162)	(6,275,076)	(5,723,180)	(5,462,925)	(5,040,021)	(4,673,833)
Net Change in Total Pension Liability	\$ 3,597,870	\$ 4,197,241	\$ 3,732,846	\$ 7,536,333	\$ 3,679,215	\$ 7,580,165
Total Pension Liability (TPL) - (beginning of year)	120,491,664	116,294,423	112,561,577	105,025,244	101,346,029	93,765,864
Total Pension Liability (TPL) - (end of year)	\$ 124,089,534	\$ 120,491,664	\$ 116,294,423	\$ 112,561,577	\$ 105,025,244	\$ 101,346,029
B. System Fiduciary Net Position						
Contributions - System Sponsor	\$ 4,365,609	\$ 4,175,289	\$ 3,860,513	\$ 3,986,227	\$ 3,653,199	\$ 3,511,645
Contributions - Member	0	0	0	0	0	0
Net Investment Income	6,433,470	(1,961,067)	12,634,539	5,090,087	(550,552)	3,909,304
Benefit Payments, including Refunds of Member Contributions	(6,575,162)	(6,275,076)	(5,723,180)	(5,462,925)	(5,040,021)	(4,673,833)
Administrative Expenses	(64,422)	(76,329)	(58,967)	(57,971)	(67,452)	(75,519)
Other	0	0	0	0	0	0
Net Change in System Fiduciary Net Position	\$ 4,159,495	\$ (4,137,183)	\$ 10,712,905	\$ 3,555,418	\$ (2,004,826)	\$ 2,671,597
System Fiduciary Net Position - (beginning of year)	87,492,294	91,629,477	80,916,572	77,361,154	79,365,980	76,694,383
System Fiduciary Net Position - (end of year)	\$ 91,651,789	\$ 87,492,294	\$ 91,629,477	\$ 80,916,572	\$ 77,361,154	\$ 79,365,980
C. Net Pension Liability (NPL) - (end of year): (A) - (B)	\$ 32,437,745	\$ 32,999,370	\$ 24,664,946	\$ 31,645,005	\$ 27,664,090	\$ 21,980,049
D. System Fiduciary Net Position as a Percentage of TPL: (B) / (A)	73.86 %	72.61 %	78.79 %	71.89 %	73.66 %	78.31 %
E. Covered Employee Payroll **	\$ 10,080,796	\$ 9,425,032	\$ 9,462,044	\$ 9,291,906	\$ 9,319,386	\$ 8,958,281
F. NPL as a Percentage of Covered Employee Payroll: (C) / (E)	321.78 %	350.12 %	260.67 %	340.57 %	296.84 %	245.36 %
G. Notes to Schedule:						
Valuation Date	01/01/2019	01/01/2018	01/01/2017	01/01/2016	01/01/2015	01/01/2014
Reporting Date (GASB No. 68)	09/30/2020	09/30/2019	09/30/2018	09/30/2017	09/30/2016	09/30/2015

Update procedures used to roll forward TPL to the measurement dates.

See Notes to Schedule of Contributions for a history of assumption changes and benefit changes.

* Projected - actual amounts will be available after System year end

** Reported payroll on which contributions to the System are based as provided under GASB No. 82



Accounting Disclosure Exhibit

IV. Schedule of Employer Contributions (GASB No. 67)

<u>Fiscal Year Ended 12/31</u>	<u>Actuarially Determined Contribution</u>	<u>Actual Contribution</u>	<u>Contribution Deficiency (Excess)</u>	<u>Covered Payroll¹</u>	<u>Actual Contribution as a % of Covered Payroll</u>
2009	\$ 3,318,721	\$ 3,318,721	\$ 0	\$ 9,790,423	33.90%
2010	3,045,252	3,103,795	(58,543)	9,729,240	31.90%
2011	3,174,884	3,174,884	0	9,562,205	33.20%
2012	3,356,361	3,356,361	0	9,312,610	36.04%
2013	3,628,209	3,628,209	0	9,162,598	39.60%
2014	3,511,645	3,511,645	0	8,958,281	39.20%
2015	3,653,199	3,653,199	0	9,319,386	39.20%
2016	3,986,227	3,986,227	0	9,291,906	42.90%
2017	3,860,513	3,860,513	0	9,462,044	40.80%
2018	4,175,289	4,175,289	0	9,425,032	44.30%
2019 ²	4,365,609	4,365,609	0	10,080,796	43.31%

¹ Reported payroll on which contributions to the System are based as provided under GASB No. 82

² Projected - actual amounts will be available after year end

Accounting Disclosure Exhibit

V. Schedule of Employer Contributions (GASB No. 68)

<u>Fiscal Year End 9/30</u>	<u>Actuarially Determined Contribution</u>	<u>Actual Contribution</u>	<u>Contribution Deficiency (Excess)</u>	<u>Covered Payroll¹</u>	<u>Actual Contribution as a % of Covered Payroll</u>
2009	\$ 3,123,367	\$ 3,123,367	\$ 0	\$ 9,618,836	32.47%
2010	3,113,619	3,172,162	(58,543)	9,744,536	32.55%
2011	3,142,476	3,142,476	0	9,603,964	32.72%
2012	3,310,992	3,310,992	0	9,375,009	35.32%
2013	3,560,247	3,560,247	0	9,200,101	38.70%
2014	3,540,786	3,540,786	0	9,009,360	39.30%
2015	3,617,811	3,617,811	0	9,229,110	39.20%
2016	3,902,970	3,902,970	0	9,298,776	41.97%
2017	3,891,942	3,891,942	0	9,419,510	41.32%
2018	4,096,595	4,096,595	0	9,434,285	43.42%
2019 ²	4,318,029	4,318,029	0	9,916,855	43.54%

¹ Based on prorated calendar year pay

² Projected - actual amounts will be available after fiscal year end

Accounting Disclosure Exhibit

VI. Notes to Schedule of Contributions (GASB No. 67 & No. 68)

Valuation Date: Actuarially determined contributions are calculated using a valuation date as of the beginning of the plan year (each January 1st).

Methods and Assumptions Used to Determine Contribution Rates:

Actuarial Cost Method	Entry Age
Amortization Method	Level Percentage of Pay, Closed
Amortization Period	30 years
Asset Valuation Method	5-year smoothed market
Inflation	2.75%
Salary Increases	4.5% - 10.0%
Investment Rate of Return	7.5%
Payroll Growth Assumption	3.0% per year, but limited to average annual increase over most recent ten years (0.0%).
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition
Mortality	For healthy male participants during employment, RP 2000 Combined Male Healthy Participant Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP 2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy male participants post employment, RP 2000 Annuitant Male Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP 2000 Annuitant Female Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For disabled male participants, RP 2000 Disabled Male Mortality Table, setback four years, without projected mortality improvements. For disabled female participants, RP 2000 Disabled Female Mortality Table, set forward two years, without projected mortality improvements.
Cost-of-Living Increases	3.0%

Accounting Disclosure Exhibit

VI. Notes to Schedule of Contributions (GASB No. 67 & No. 68) (cont'd)

Other Information:

Benefit Changes

2017: Effective October 25, 2017 for Members under Career Average Compensation and on January 1, 2020 for Members under Final Average Compensation, Compensation means a Member's base compensation (hourly rate in effect each pay period multiplied by the corresponding hours earned during that pay period). However, Compensation shall not include overtime (except as necessary to not penalize Members assigned to work 12-hour shifts), commissions, bonuses, expense allowances and any hours that are considered leave without pay. For Members under Final Average Compensation, effective January 1, 2020, the average annual Compensation earned by a Member during the highest 10,440 hours out of the last 20,880 hours of service (which shall be determined using the highest 130.5 payroll periods of the last 261 payroll periods) immediately preceding termination of service or retirement. 2011: New benefit structure added for employees hired on or after June 1, 2010 including career average earnings and 2.0% multiplier. 2009: Normal retirement eligibility updated to attainment of age 60 and completion of 10 years of credited service from attainment of age 60 if member enters System after November 13, 2008; pre-retirement death benefit for child beneficiaries end date extended from 21 years of age to 25 years of age provided the child is a full-time student in college or disabled under Social Security; actuarially equivalent joint and survivor with pop-up optional form of payment added.

Assumption Changes

2017: Pre-retirement mortality was updated. 2016: Mortality rates updated. 2014: Investment return updated from 8.0% to 7.5%; withdrawal, salary increase and retirement rates updated. 2009: Mortality, withdrawal, salary increase and retirement rates updated; assumption for child beneficiaries added for pre-retirement death benefits.

VII. Discount Rate (GASB No. 67 & No. 68)

Discount rates of 7.5% and 7.45% were used to measure the December 31, 2018 TPL and the December 31, 2019 TPL, respectively. These discount rates were based on the expected rate of return on System investments of 7.5% and 7.45%. The projection of cash flows used to determine these discount rates assumed member contributions will be made at the current contribution rate and employer contributions will be made at rates equal to the difference between actuarially determined current contribution rates and the member contribution rate. Based on these assumptions, the pension System's fiduciary net position was projected to be available to make all projected future expected benefit payments of current System members. Therefore, the long-term expected rate of return on System investments was applied to all periods of projected benefit payments to determine the TPL.

Accounting Disclosure Exhibit

VIII. Sensitivity of the NPL to the Discount Rate Assumption (GASB No. 67 & No. 68) (cont'd)

Measurement date: December 31, 2018

	1% Decrease	Current Discount Rate	1% Increase
Discount Rate	6.5%	7.5%	8.5%
NPL	\$ 48,299,233	\$ 32,999,370	\$ 20,401,433

Measurement date: December 31, 2019 *

	1% Decrease	Current Discount Rate	1% Increase
Discount Rate	6.45%	7.45%	8.45%
NPL	\$ 48,130,625	\$ 32,437,745	\$ 19,507,482

* Projected - actual amounts will be available after System year end

Accounting Disclosure Exhibit

IX. Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions - Reporting Date (GASB No. 68)

Pension Expense for Fiscal Year Ending September 30, 2019: \$ 6,562,213

Summary of Outstanding Deferred Inflows and Outflows of Resources as of September 30, 2019

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Differences between actual and expected experience on liabilities	\$ 247,236	\$ 297,974
Changes of assumptions or other inputs	134,941	0
Net difference between projected and actual earnings on System investments	<u>4,570,095</u>	<u>0</u>
Total	<u>\$ 4,952,272</u>	<u>\$ 297,974</u>

Projected Deferred Outflows for Utility Board Contributions to Be Recognized in Pension Expense for Fiscal Year Ending September 30, 2020: \$ 3,274,207

Summary of Deferred Outflows and Inflows of Resources to be Recognized in Pension Expense in Future Years

<u>Year ending 30-Sep</u>	<u>Amount</u>
2020	\$ 1,854,767
2021	596,147
2022	453,051
2023	1,750,333
2024	0
Thereafter	0

Accounting Disclosure Exhibit

The following information is not required to be disclosed but is provided for informational purposes.

X. Components of Pension Expense (GASB No. 68)

Measurement Date	Projected <u>12/31/2019 *</u>	<u>12/31/2018</u>	<u>12/31/2017</u>	<u>12/31/2016</u>	<u>12/31/2015</u>	<u>12/31/2014</u>
Service Cost	\$ 1,533,031	\$ 1,513,840	\$ 1,653,371	\$ 1,689,246	\$ 1,615,566	\$ 1,688,924
Interest on Total Pension Liability	8,831,638	8,625,293	8,313,210	8,043,700	7,503,157	7,233,694
Current-Period Benefit Changes	0	0	132,646	0	0	0
Contributions - Member	0	0	0	0	0	0
Projected Earnings on System Investments	(6,433,470)	(6,790,606)	(5,996,682)	(5,744,536)	(5,897,913)	(5,705,665)
Administrative Expenses	64,422	76,329	58,967	57,971	67,452	75,519
Other Changes in System Fiduciary Net Position	0	0	0	0	0	0
Recognition of Beginning Deferred Outflows / (Inflows) due to Liabilities	(40,374)	934,737	1,036,752	1,938,318	884,669	1,009,509
Recognition of Beginning Deferred Outflows / (Inflows) due to Assets	1,843,347	2,202,620	452,284	1,779,855	1,648,965	359,272
Total Pension Expense	<u>\$ 5,798,594</u>	<u>\$ 6,562,213</u>	<u>\$ 5,650,548</u>	<u>\$ 7,764,554</u>	<u>\$ 5,821,896</u>	<u>\$ 4,661,253</u>

* Projected - actual amounts will be available after measurement date

Accounting Disclosure Exhibit

The following information is not required to be disclosed but is provided for informational purposes.

XI. Recognition of Deferred Outflows and (Inflows) due to Liabilities - Measurement Date (GASB No. 68)

Recognition of Deferred Outflows due to Differences Between Actual and Expected Experience on Liabilities

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 12/31/2018	Recognition Amount for 2018	Balance as of 12/31/2018
2015	\$ 0	3.2	0.0	\$ 0	\$ 0
2016	465,515	3.1	0.1	150,166	15,017
2017	0	3.3	1.3	0	0
2018	333,184	3.3	2.3	100,965	232,219
TOTAL				\$ 251,131	\$ 247,236

Recognition of Deferred (Inflows) due to Differences Between Actual and Expected Experience on Liabilities

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 12/31/2018	Recognition Amount for 2018	Balance as of 12/31/2018
2015	\$ (399,487)	3.2	0.0	\$ (24,967)	\$ 0
2016	0	3.1	0.1	0	0
2017	(756,398)	3.3	1.3	(229,212)	(297,974)
2018	0	3.3	2.3	0	0
TOTAL				\$ (254,179)	\$ (297,974)

Recognition of Deferred Outflows due to Changes of Assumptions or Other Inputs on Liabilities

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 12/31/2018	Recognition Amount for 2018	Balance as of 12/31/2018
2015	\$ 0	3.2	0.0	\$ 0	\$ 0
2016	2,800,797	3.1	0.1	903,483	90,348
2017	113,197	3.3	1.3	34,302	44,593
2018	0	3.3	2.3	0	0
TOTAL				\$ 937,785	\$ 134,941

Accounting Disclosure Exhibit

The following information is not required to be disclosed but is provided for informational purposes.

XI. Recognition of Deferred Outflows and (Inflows) Due to Liabilities - Measurement Date (GASB No. 68) (cont'd)

Recognition of Deferred (Inflows) due to Changes of Assumptions or Other Inputs on Liabilities

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 12/31/2018	Recognition Amount for 2018	Balance as of 12/31/2018
2015	\$ 0	3.2	0.0	\$ 0	\$ 0
2016	0	3.1	0.1	0	0
2017	0	3.3	1.3	0	0
2018	0	3.3	2.3	0	0
TOTAL				\$ 0	\$ 0

XII. Recognition of Deferred Outflows / (Inflows) due to Assets - Measurement Date (GASB No. 68)

Recognition of Deferred Outflows / (Inflows) due to Differences Between Projected and Actual Earnings on Pension Plan Investments

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 12/31/2018	Recognition Amount for 2018	Balance as of 12/31/2018
2014	\$ 1,796,361	5	0	\$ 359,273	\$ 0
2015	6,448,465	5	1	1,289,693	1,289,693
2016	654,449	5	2	130,890	261,779
2017	(6,637,857)	5	3	(1,327,571)	(3,982,715)
2018	8,751,673	5	4	1,750,335	7,001,338
TOTAL				\$ 2,202,620	\$ 4,570,095

Outline of Principal Provisions of the Retirement Plan

A. Effective Date:

April 9, 1954, as amended and restated as of October 25, 2017.

B. Eligibility Requirements:

All regular and permanent employees of the Utility Board shall become members of the Plan immediately upon completion of probationary period. All regular and permanent employees of the Utility Board employed prior to October 2, 2003 became members of the Plan immediately upon employment. Elected Utility Board officials become members of the Plan immediately upon election.

C. Member Contributions:

Eliminated effective October 1, 1985 (October 1, 1983 for management members).

D. Utility Board Contributions:

The Utility Board shall contribute an amount which will be determined annually by decision of the Utility Board.

E. Credited Service:

Credited service is service performed subject to a maximum of 30 years. However, any member with more than 30 years of credited service as of November 20, 1998 will be grandfathered under the prior 35 year cap.

F. Final Average Compensation:

Final average compensation (FAC) equals the average annual pensionable earnings earned during a period of the five highest years out of the last ten years of service immediately preceding retirement. Pensionable earnings are calculated using the member's base hourly rate each pay period, multiplied by 80 hours, less any hours that are considered *leave without pay*.

Effective January 1, 2020, FAC equals the average of the pensionable earnings earned by a member during the highest 10,440 hours out of the last 20,880 hours of service (which shall be determined using the highest 130.5 payroll periods of the last 261 payroll periods) immediately preceding termination of service or retirement. Pensionable earnings are calculated using the member's base hourly rate in effect each pay period, multiplied by the corresponding hours earned during that pay period, less any hours that are considered *leave without pay* or are otherwise excluded from pensionable earnings.

Outline of Principal Provisions of the Retirement Plan

G. Career Average Compensation:

Career average compensation (CAC) means the average of the pensionable earnings earned by a member from date of participation to termination of service. Pensionable earnings are calculated using the member's base hourly rate in effect each pay period, multiplied by the corresponding hours earned during that pay period, less any hours that are considered *leave without pay* or are otherwise excluded from pensionable earnings.

H. Normal Retirement:

1. Eligibility:

Earlier of:

- (a) Attainment of age 60 and completion of 10 years of credited service, attainment of age 60 if a Plan Member on or before November 13, 2008.
- (b) Completion of 30 years of credited service.

2. Benefit:

For employees hired on or before May 31, 2010, 2.4% times FAC times years of credited service. For employees hired on or after June 1, 2010, 2.0% times CAC times years of credited service.

I. Early Retirement:

1. Eligibility:

Earliest of:

- (a) Attainment of age 55 with completion of 10 years of credited service.
- (b) Completion of 20 years of credited service.

2. Benefit:

Benefit as calculated for normal retirement based on credited service and FAC or CAC as of early retirement date. The member may elect to defer receipt of the benefit until the normal retirement date or alternatively, may elect a benefit reduced 5% for each year the benefit commencement date precedes normal retirement date.

J. Disability Retirement:

1. Eligibility:

Totally and permanently disabled as defined under the Plan and completion of 10 years of credited service as of date of disability.

Outline of Principal Provisions of the Retirement Plan

2. **Benefit:**

For employees hired on or before May 31, 2010, benefit as calculated for normal retirement based on credited service and average basic compensation during the three years immediately preceding disability, minimum benefit of 20% of final three year average basic compensation at date of disability.

For employees hired on or after June 1, 2010, benefit as calculated for normal retirement based on credited service and CAC as of date of disability, minimum benefit of 20% of CAC at date of disability.

These benefits will be offset by any benefits payable under Workers' Compensation or similar injury or disability benefit payments.

K. **Pre-Retirement Death Benefit:**

In the case of death of a member while currently employed, the amount of the projected benefit which such member would have received had the member continued employment until normal retirement date at the current rate of pay shall be determined. Each Plan Member may elect survivor payment under Option 1 or Option 2, however, Option 2 is only available if the Plan Member has children under 21 years of age (25 years of age provided the child is a full-time student in college or disabled under Social Security).

Option 1, 75% of the benefit calculated above payable during the remaining lifetime of the spouse or domestic partner.

Option 2, 100% of the benefit calculated above payable until the youngest child is 21 years of age (25 years of age provided the child is a full-time student in college or disabled under Social Security). Upon attainment of age 21 (age 25 provided the child is a full-time student in college or disabled under Social Security) by the youngest child, 60% of the benefit calculated above payable during the remaining lifetime of the surviving spouse or domestic partner.

Notwithstanding the above, the minimum death benefit paid shall not be less than the accumulated employee contributions, if any, as of date of death.

L. **Termination Benefit:**

Upon termination prior to normal or early retirement date a member shall be entitled to choose (1) or (2) below, where:

- (1) is a refund of employee contributions plus 1% if termination with 5 years or less of service, or 3% if termination after 5 years of service; and,

Outline of Principal Provisions of the Retirement Plan

(2) is (a) x (b), where (a) is the benefit as calculated for normal retirement, based on FAC or CAC and credited service at date of termination, and (b) is a percentage as shown on the following table:

<u>Years of Credited Service</u>	<u>Percentage</u>
Less than 5	0%
5	25%
6	30%
7	40%
8	60%
9	80%
10 or more	100%

If this option is selected, unreduced vested benefits commence as of the terminated employees' normal retirement date. Alternatively, the member may elect to commence receiving a reduced vested benefit any time after early retirement eligibility requirements are met. Such benefit is reduced by 5% for each year that commencement of benefits precedes the date which the member would have been eligible for normal retirement.

M. Normal Form of Payment:

Monthly life annuity with final payment due in month in which death occurs. Effective January 1, 1986, monthly benefits are increased 2% per annum. Effective January 1, 2001, monthly benefits are increased 3% per annum.

N. Changes Since Previous Valuation

None.

**Actuarial Assumptions and Actuarial Cost Methods
Used in the Valuation**

A. Mortality

For healthy male participants during employment, RP 2000 Combined Male Healthy Participant Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP 2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.

For healthy male participants post employment, RP 2000 Annuitant Male Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP 2000 Annuitant Female Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.

For disabled male participants, RP 2000 Disabled Male Mortality Table, setback four years, without projected mortality improvements. For disabled female participants, RP 2000 Disabled Female Mortality Table, set forward two years, without projected mortality improvements.

Sample Ages (2019)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	30.64	33.66	30.21
60	25.71	28.64	25.55	28.54
62	23.81	26.68	23.71	26.62

Sample Ages (2039)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	32.78	35.50	32.37
60	27.88	30.47	27.74	30.38
62	25.97	28.49	25.89	28.44

B. Interest to be Earned by Fund

7.45%, net of investment expenses, compounded annually - includes inflation of 2.60%.

**Actuarial Assumptions and Actuarial Cost Methods
Used in the Valuation**

C. Allowances for Expenses or Contingencies

Average of actual administrative expenses during prior three (3) years.

D. Employee Withdrawal Rates

Withdrawal rates were used in accordance with tables per the following illustrative example:

<u>Withdrawal Rates</u>	
<u>Service</u>	<u>Unisex Rates</u>
0	9.0%
1	8.1%
2	7.2%
3	5.4%
4	3.6%
5+	3.3%

E. Salary Increase Factors

Current salary was assumed to increase according to the following table.

<u>Age</u>	<u>Salary Increase Factors</u>		
	<u>Assumed Wage Inflation</u>	<u>Promotion & Seniority</u>	<u>Total Current Rates</u>
< 35	3.25%	3.75%	7.00%
35 - 49	3.25%	1.75%	5.00%
50 & After	3.25%	0.75%	4.00%

F. Disability Benefits

Class (01) Inter-Company modified disability rates for males were used. Rates for females were doubled. No Workers' Compensation benefits are assumed to be payable.

**Actuarial Assumptions and Actuarial Cost Methods
Used in the Valuation**

G. Assumed Retirement Age

Employees are assumed to retire at the rates shown in the following table.

Less than 30 Years of Service	
<u>Age</u>	<u>Rate of Retirement</u>
< 55	6.5%
55 - 58	15.0%
59 - 60	30.0%
61 - 69	5.0%
70 +	100.0%
30 Years of Service	
<u>Age</u>	<u>Rate of Retirement</u>
< 50	50.0%
50 +	100.0%

H. Death Benefits

1. The assumed incidence of deaths is 90% service incurred and 10% as non-service incurred.
2. 10% of participants are assumed to designate a child as beneficiary eligible for future children's benefits.
3. 90% of participants are assumed to be married.

I. Valuation of Assets

The method used for determining the smoothed actuarial value of assets phases in the deviation between the expected and actual return on assets at the rate of 20% per year. The smoothed actuarial value of assets will be further adjusted to the extent necessary to fall within the corridor whose lower limit is 80% of the fair market value of System assets and whose upper limit is 120% of the fair market value of System assets.

**Actuarial Assumptions and Actuarial Cost Methods
Used in the Valuation**

J. Increase in Covered Payroll

3.0% per year, but limited to average annual increase over most recent ten years (0.3%).

K. Cost Method

Normal Retirement, Termination, Disability, and Death Benefits: Entry-Age-Actuarial Cost Method.

Under this method the normal cost for each active employee is the amount which is calculated to be a level percentage of pay that would be required annually from his age at hire to his assumed retirement age to fund his estimated benefits, assuming the System had always been in effect. The normal cost for the System is the sum of such amounts for all employees. The actuarial accrued liability as of any valuation date for each active employee or inactive employee who is eligible to receive benefits under the System is the excess of the actuarial present value of estimated future benefits over the actuarial present value of current and future normal costs. The unfunded actuarial accrued liability as of any valuation date is the excess of the actuarial accrued liability over the smoothed actuarial value of assets of the System.

L. Changes Since Previous Valuation

1. Interest to be Earned by Fund was:

7.50%, net of investment expenses, compounded annually - includes inflation of 2.75%.

2. Employee Withdrawal Rates were:

Withdrawal rates were used in accordance with tables per the following illustrative example:

<u>Withdrawal Rates</u>	
<u>Service</u>	<u>Unisex Rates</u>
0	10.0%
1	9.0%
2	8.0%
3	6.0%
4	4.0%
5+	3.5%

**Actuarial Assumptions and Actuarial Cost Methods
Used in the Valuation**

L. Changes Since Previous Valuation (cont'd)

3. Salary Increase Factors were:

Salary was assumed to increase according to the following table.

Age	Salary Increase Factors		
	Assumed Wage Inflation	Promotion & Seniority	Total Current Rates
< 25	3.5%	6.5%	10.0%
25 - 34	3.5%	4.0%	7.5%
35 - 44	3.5%	2.5%	6.0%
45 - 54	3.5%	1.5%	5.0%
55 & After	3.5%	1.0%	4.5%

4. Assumed Retirement Age was:

Employees were assumed to retire at the rates shown in the following table.

Age	Rate of Retirement
< 55	5%
55 - 58	15%
59 - 60	30%
61 - 62	10%
63 - 69	15%
70 +	100%

Employees who attain age 50 with 30 years of service after the valuation date are assumed to retire no later than age 50 with 30 years of service. Employees who have reached age 70 or age 50 with 30 years of service as of the valuation date are assumed to remain employed for an additional year.

Reconciliation of System ParticipantsA. Active Participants

1. Active participants previous year	117
2. Retired during year	(5)
3. Deceased during year	0
4. Disabled during year	0
5. Terminated during year	0
6. New active participants	11
7. Rehired participants	0
8. Active participants	<u>123</u>

B. Participants Receiving Benefits

1. Participants receiving benefits previous year	187
2. New retired participants	5
3. New terminated vested receiving benefits	3
4. New disabled receiving benefits	0
5. New beneficiaries receiving benefits	0
6. Deceased or ceased payment during year	(9)
7. Retired or terminated vested receiving benefits current year	<u>186</u>

C. Terminated Vested Participants Entitled to Future Benefits

1. Terminated vested entitled previous year	25
2. Deceased during year	0
3. Commenced receiving benefits during year	(3)
4. New terminated vested	0
5. Terminated vested paid lump sum	0
6. Terminated vested rehired during year	0
7. Adjustment	0
8. Terminated vested entitled current year	<u>22</u>

**Distribution by Attained Age Groups
and Service Groups as of January 1, 2019**

Attained Age Group	-----COMPLETED YEARS OF SERVICE-----							Total
	<u>0 - 4</u>	<u>5 - 9</u>	<u>10 - 14</u>	<u>15 - 19</u>	<u>20 - 24</u>	<u>25 - 29</u>	<u>30 & Over</u>	
Under 25	2	-	-	-	-	-	-	2
25 - 29	6	2	-	-	-	-	-	8
30 - 34	14	5	6	-	-	-	-	25
35 - 39	3	4	7	1	-	-	-	15
40 - 44	4	1	5	4	-	-	-	14
45 - 49	-	-	3	3	1	4	-	11
50 - 54	4	2	8	1	3	4	1	23
55 - 59	4	2	3	1	1	3	-	14
60 - 64	-	1	1	1	1	2	-	6
65 - 69	-	-	1	-	-	2	-	3
70 & Over	-	-	2	-	-	-	-	2
TOTAL	37	17	36	11	6	15	1	123
				<u>01/01/2018</u>		<u>01/01/2019</u>		
				44.37 years		44.24 years		
				32.10 years		32.65 years		
				\$ 78,721		\$ 81,958		
				34.2%		31.7%		

**Statistics for Participants Entitled to Deferred Benefits
and Participants Receiving Benefits**

A. Entitled to Deferred Benefits

<u>Current Age Group</u>	<u>Count</u>	<u>Total Annual Benefit</u>	<u>Average Annual Benefit</u>
Less than 50	14	\$ 128,157	\$ 9,154
50 - 54	5	36,794	7,359
55 - 59	3	29,161	9,720
60 - 64	-	-	-
65 - 69	-	-	-
70 & Over	-	-	-
TOTAL	22	\$ 194,112	\$ 8,823

B. Receiving Benefits

<u>Current Age Group</u>	<u>Count</u>	<u>Total Annual Benefit</u>	<u>Average Annual Benefit</u>
Less than 50	4	\$ 170,557	\$ 42,639
50 - 54	19	825,232	43,433
55 - 59	30	1,081,578	36,053
60 - 64	32	965,587	30,175
65 - 69	25	803,112	32,124
70 - 74	28	851,195	30,400
75 - 79	25	1,067,650	42,706
80 - 84	15	575,282	38,352
85 - 89	8	167,356	20,920
90 & Over	-	-	-
TOTAL	186	\$ 6,507,549	\$ 34,987

Recent Compensation, Termination and Investment Return Experience

Calendar Year	Compensation		Termination Ratio of Actual to Expected	Investment Return		
	% Increase (Decrease)	Assumed Increase		Smoothed Actuarial Value	Market Value	Assumed Rate of Return
2018	5.4%	5.8%	0.0	5.2%	(2.2%)	7.5%
2017	5.5%	5.6%	0.2	8.6%	15.8%	7.5%
2016	2.0%	5.6%	0.3	7.9%	6.6%	7.5%
2015	9.7%	5.6%	0.9	7.7%	(0.7%)	7.5%
2014	2.3%	5.6%	1.2	10.5%	5.1%	7.5%
2013	3.1%	7.2%	1.2	12.8%	21.0%	8.0%
2012	3.8%	7.2%	0.4	3.6%	13.5%	8.0%
2011	4.4%	7.4%	0.9	2.6%	1.2%	8.0%
2010	2.5%	7.3%	0.5	3.8%	11.5%	8.0%
2009	6.3%	7.2%	0.3	10.8%	18.4%	8.0%
Last 3 Years	4.3%	5.7%	0.2	7.2%	6.5%	7.5%
Last 5 Years	4.9%	5.6%	0.5	8.0%	4.7%	7.5%
Last 10 Years	4.5%	6.4%	0.5	7.3%	8.7%	7.7%

Utility Board Contribution Information

<u>Valuation Date</u>	<u>Contribution Fiscal Year End</u>	<u>Minimum Required Utility Board Contributions</u>	<u>Actual Utility Board Contributions</u>
01/01/2019	12/31/2019	\$ 4,365,609 *	N/A
01/01/2018	12/31/2018	\$ 4,175,289	\$ 4,175,289
01/01/2017	12/31/2017	\$ 3,860,513	\$ 3,860,513
01/01/2016	12/31/2016	\$ 3,986,227	\$ 3,986,227
01/01/2015	12/31/2015	\$ 3,653,199	\$ 3,653,199
01/01/2014	12/31/2014	\$ 3,511,645	\$ 3,511,645
01/01/2013	12/31/2013	\$ 3,628,209	\$ 3,628,209
01/01/2012	12/31/2012	\$ 3,356,361	\$ 3,356,361
01/01/2011	12/31/2011	\$ 3,174,884	\$ 3,174,884
01/01/2010	12/31/2010	\$ 3,045,252	\$ 3,103,795
01/01/2009	12/31/2009	\$ 3,318,721	\$ 3,318,721
01/01/2008	12/31/2008	\$ 2,537,303	\$ 2,537,303
01/01/2007	12/31/2007	\$ 2,462,847	\$ 2,462,847
01/01/2006	12/31/2006	\$ 2,208,905	\$ 2,208,905

* 43.3% of expected 2019 covered payroll - \$10,080,796

Actuarial Valuation as of January 1, 2019**State Required Exhibit**

	Current Assumptions 01/01/2019	Prior Assumptions 01/01/2019	01/01/2018
A. <u>Participant Data</u>			
1. Active participants	123	123	117
2. Retired participants and beneficiaries receiving benefits	178	178	179
3. Disabled participants receiving benefits	8	8	8
4. Terminated vested participants	22	22	25
5. Annual payroll of active participants	\$ 10,080,796	\$ 10,080,796	\$ 9,210,384
6. Annual benefits payable to those currently receiving benefits	\$ 6,507,549	\$ 6,507,549	\$ 6,288,058
B. <u>Smoothed Actuarial Value of Assets</u>	\$ 92,062,389	\$ 92,062,389	\$ 89,650,519
C. <u>Liabilities</u>			
1. Actuarial present value of future expected benefit payments for active members			
a. Retirement benefits	\$ 41,659,899	\$ 42,935,174	\$ 41,397,998
b. Vesting benefits	1,788,163	1,873,790	1,772,565
c. Death benefits	1,144,603	1,130,836	1,047,781
d. Disability benefits	1,144,119	1,178,136	1,139,663
e. Total	<u>\$ 45,736,784</u>	<u>\$ 47,117,936</u>	<u>\$ 45,358,007</u>
2. Actuarial present value of future expected benefit payments for terminated vested members	\$ 1,832,429	\$ 1,816,102	\$ 2,177,928
3. Actuarial present value of future expected benefit payments for members currently receiving benefits			
a. Service retired	\$ 77,479,424	\$ 77,090,421	\$ 73,502,686
b. Disability retired	1,841,942	1,834,387	1,822,227
c. Beneficiaries	5,612,780	5,584,294	5,956,515
d. Total	<u>\$ 84,934,146</u>	<u>\$ 84,509,102</u>	<u>\$ 81,281,428</u>

Actuarial Valuation as of January 1, 2019

State Required Exhibit

	Current Assumptions 01/01/2019	Prior Assumptions 01/01/2019	01/01/2018
4. Total actuarial present value of future expected benefit payments	\$ 132,503,359	\$ 133,443,140	\$ 128,817,363
5. Actuarial accrued liability	\$ 120,300,027	\$ 120,518,606	\$ 116,627,607
6. Unfunded actuarial accrued liability	\$ 28,237,638	\$ 28,456,217	\$ 26,977,088
D. <u>Statement of Accumulated System Benefits</u>			
1. Actuarial present value of accumulated vested benefits			
a. Participants currently receiving benefits	\$ 84,934,146	\$ 84,509,102	\$ 81,281,428
b. Other participants	26,757,920	26,743,482	26,411,004
c. Total	<u>\$ 111,692,066</u>	<u>\$ 111,252,584</u>	<u>\$ 107,692,432</u>
2. Actuarial present value of accumulated non-vested System benefits	<u>803,023</u>	<u>798,573</u>	<u>743,631</u>
3. Total actuarial present value of accumulated System benefits	\$ 112,495,089	\$ 112,051,157	\$ 108,436,063
E. <u>Statement of Change in Accumulated System Benefits</u>			
1. Actuarial present value of accumulated System benefits as of January 1, 2018	\$ 108,436,063		
2. Increase (decrease) during year attributable to:			
a. System amendment	\$ 0		
b. Change in actuarial assumptions	443,932		
c. Benefits paid	(6,275,076)		
d. Other, including benefits accumulated and increase for interest due to decrease in the discount period	9,890,170		
e. Net increase	<u>\$ 4,059,026</u>		
3. Actuarial present value of accumulated System benefits as of January 1, 2019	\$ 112,495,089		

Actuarial Valuation as of January 1, 2019

State Required Exhibit

	<u>Current Assumptions 01/01/2019</u>	<u>Prior Assumptions 01/01/2019</u>	<u>01/01/2018</u>
F. <u>Pension Cost</u>			
1. Total normal cost	\$ 1,597,453	\$ 1,659,516	\$ 1,575,303
2. Payment required to amortize unfunded liability	2,611,377	2,628,032	2,356,433
3. Interest adjustment	156,779	161,102	147,440
4. Total required contribution	\$ 4,365,609	\$ 4,448,650	\$ 4,079,176
5. Item 4 as a percentage of payroll	43.3%	44.1%	44.3%
6. Estimated employee contributions	\$ 0	\$ 0	\$ 0
7. Item 6 as a percentage of payroll	0.0%	0.0%	0.0%
8. Net amount payable by Utility Board	\$ 4,365,609	\$ 4,448,650	\$ 4,079,176
9. Item 8 as a percentage of payroll	43.3%	44.1%	44.3%
G. <u>Past Contributions</u>			
1. Total contribution required (% of actual payroll)	\$ 4,365,609	\$ 4,448,650	\$ 4,175,289
2. Actual contributions made	N/A	N/A	\$ 4,175,289
H. <u>Net Actuarial Gain / (Loss)</u>			
	\$ (2,093,983)	\$ (2,093,983)	\$ 628,492
I. <u>Disclosure of Following Items:</u>			
1. Actuarial present value of future salaries - attained age	\$ 86,836,551	\$ 89,068,906	\$ 80,376,898
2. Actuarial present value of future employee contributions - attained age	\$ 0	\$ 0	\$ 0
3. Actuarial present value of future contributions from other sources	N/A	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 0	\$ 0	\$ 0
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A	N/A

State Required Exhibit

	<u>Unfunded Actuarial Accrued Liabilities</u>	<u>Current Unfunded Liabilities</u>	<u>Current Assumption Amortization Payment</u>	<u>Prior Assumption Amortization Payment</u>	<u>Remaining Funding Period</u>
01/01/2003	Actuarial Loss / (Gain)	8,588,099	923,743	926,064	14 years
01/01/2003	Method Change	(7,414,946)	(797,558)	(799,562)	14 years
01/01/2003	Assumption Change	(468,837)	(50,429)	(50,555)	14 years
01/01/2004	Actuarial Loss / (Gain)	1,863,964	192,590	193,104	15 years
01/01/2005	Retiree Benefit Corrections	(1,224,525)	(122,033)	(122,377)	16 years
01/01/2005	Actuarial Loss / (Gain)	1,813,101	180,689	181,199	16 years
01/01/2006	Actuarial Loss / (Gain)	2,405,181	232,011	232,700	17 years
01/01/2007	Plan Amendment	46,464	4,352	4,365	18 years
01/01/2007	Actuarial Loss / (Gain)	1,664,363	155,885	156,371	18 years
01/01/2008	Actuarial Loss / (Gain)	(376,473)	(34,330)	(34,441)	19 years
01/01/2009	Actuarial Loss / (Gain)	10,013,237	891,123	894,143	20 years
01/01/2009	Assumption Change	1,840,332	163,779	164,334	20 years
01/01/2009	Plan Amendment	34,567	3,076	3,087	20 years
01/01/2010	Actuarial Loss / (Gain)	(2,189,989)	(190,617)	(191,288)	21 years
01/01/2011	Actuarial Loss / (Gain)	2,246,149	191,579	192,277	22 years
01/01/2012	Actuarial Loss / (Gain)	2,665,082	223,127	223,967	23 years
01/01/2013	Actuarial Loss / (Gain)	3,305,119	272,038	273,095	24 years
01/01/2014	Actuarial Loss / (Gain)	(3,427,131)	(277,703)	(278,813)	25 years
01/01/2014	Assumption Change	3,917,968	317,476	318,745	25 years
01/01/2015	Actuarial Loss / (Gain)	(2,451,770)	(195,831)	(196,636)	26 years
01/01/2016	Actuarial Loss / (Gain)	293,716	23,151	23,249	27 years
01/01/2016	Assumption Change	2,782,937	219,359	220,282	27 years
01/01/2017	Actuarial Loss / (Gain)	(1,131,917)	(88,138)	(88,519)	28 years
01/01/2017	Assumption Change	112,188	8,736	8,773	28 years
01/01/2017	Plan Amendment	131,462	10,236	10,281	28 years
01/01/2018	Actuarial Loss / (Gain)	(620,208)	(47,753)	(47,963)	29 years
01/01/2019	Combined Bases *	1,944,101	259,916	260,392	10 years
01/01/2019	Actuarial Loss / (Gain)	2,093,983	159,558	160,276	30 years
01/01/2019	Assumption Change	(218,579)	(16,655)	N/A	30 years
	TOTAL	\$ 28,237,638	\$ 2,611,377	\$ 2,636,550	

* Combined per Internal Revenue Code Regulation 1.412(b)-1

This actuarial valuation and/or cost determination was prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of Part VII, Chapter 112, Florida Statutes. There is no benefit or expense to be provided by the Plan and/or paid from the Plan's assets for which liabilities or current costs have not been established or other wise provided for in the valuation. All known events or trends which may require material increase in Plan costs or required contribution rates have been taken into account in the valuation.

Enrollment Number: 17-02802

Dated: April 8, 2019



Lawrence F. Wilson, A.S.A.

Glossary

Actuarial Accrued Liability. The difference between the Actuarial Present Value of Future Benefits, and the Actuarial Present Value of Future Normal Costs.

Actuarial Assumptions. Assumptions about future plan experience that affect costs or liabilities, such as: mortality, withdrawal, disablement, and retirement; future increases in salary; future rates of investment earnings; future investment and administrative expenses; characteristics of members not specified in the data, such as marital status; characteristics of future members; future elections made by members and other items.

Actuarial Cost Method. Actuarial Cost Method A procedure for allocating the Actuarial Present Value of Future Benefits between the Actuarial Present Value of Future Normal Costs and the Actuarial Accrued Liability.

Actuarial Equivalent. Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value of Future Benefits. The Actuarial Present Value of amounts which are expected to be paid at various future times to active members, retired members, beneficiaries receiving benefits and inactive, non-retired members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation. The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB No. 67.

Actuarial Value of Assets. The value of the assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets or a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the actuarially required contribution.

Amortization Method. A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the rate at which total covered payroll of all active members is assumed to increase.

Glossary

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

Amortization Period. The period used in calculating the Amortization Payment.

Annual Required Contribution. The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation. The annual required contribution consists of the Employer Normal Cost and Amortization Payment plus interest adjustment.

Closed Amortization Period. A specific number of years that is reduced by one each year, and declines to zero with the passage of time. For example if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc.

Employer Normal Cost. The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.

Equivalent Single Amortization Period. For plans that do not establish separate amortization bases (separate components of the UAAL), this is the same as the Amortization Period. For plans that do establish separate amortization bases, this is the period over which the UAAL would be amortized if all amortization bases were combined upon the current UAAL payment.

Experience Gain/Loss. A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two actuarial valuations. To the extent that actual experience differs from that assumed, Unfunded Actuarial Accrued Liabilities emerge which may be larger or smaller than projected. Gains are due to favorable experience, e.g., the assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. Losses are the result of unfavorable experience, i.e., actual results that produce Unfunded Actuarial Accrued Liabilities which are larger than projected.

Funded Ratio. The ratio of the Actuarial Value of Assets to the Actuarial Accrued Liability.

GASB. Governmental Accounting Standards Board.

Glossary

GASB No. 67 and GASB No. 68. These are the governmental accounting standards that set the accounting rules for public retirement plans and the employers that sponsor or contribute to them. Statement No. 67 sets the accounting rules for the plans themselves, while Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement plans.

Normal Cost. The annual cost assigned, under the Actuarial Cost Method, to the current plan year.

Open Amortization Period. An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. In other words, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount or in relation to covered payroll.

Unfunded Actuarial Accrued Liability. The difference between the Actuarial Accrued Liability and Actuarial Value of Assets.

Valuation Date. The date as of which the Actuarial Present Value of Future Benefits are determined. The benefits expected to be paid in the future are discounted to this date.