



April 10, 2020

Pension Board
c/o Mr. Jack Wetzler
Assistant General Manager and
Chief Financial Officer
Utility Board of the City of Key West
1001 James Street
Key West, Florida 33041-6100

Re: January 1, 2020 Actuarial Valuation

Dear Jack:

As requested, we are pleased to enclose the January 1, 2020 Actuarial Valuation Report for the Retirement System for General Employees of the Utility Board of the City of Key West.

We appreciate the opportunity to work with the Board on this important project. We look forward to presenting the key financial results of our Actuarial Valuation Report at the upcoming Pension Board Meeting.

Upon Board approval of the Actuarial Valuation Report, we will upload an electronic copy of the Actuarial Valuation Report along with the required disclosure information to the State portal as required by the State.

If you should have any questions concerning the above, please do not hesitate to contact us.

Sincerest regards,

A handwritten signature in black ink that reads "Michelle Jones". The signature is written in a cursive, flowing style.

Shelly L. Jones, A.S.A.
Consultant and Actuary

Enclosures

cc: Mr. Harry L. Bethel, Chairman

RETIREMENT SYSTEM FOR GENERAL EMPLOYEES OF THE UTILITY BOARD OF THE CITY OF KEY WEST

Actuarial Valuation as of January 1, 2020

This Valuation Determines the Annual Contribution for the System Year January 1, 2020 through December 31, 2020 to be Paid in the Calendar Year Ending December 31, 2020

April 10, 2020



**Retirement System for General Employees of the
Utility Board of the City of Key West**

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April 10, 2020

Board of Trustees
c/o Mr. Jack Wetzler
Assistant General Manager and
Chief Financial Officer
Utility Board of the City of Key West
1001 James Street
Key West, Florida 33041-6100

Re: Retirement System for General Employees of the Utility Board of the City of Key West

Dear Trustees:

We are pleased to present our January 1, 2020 Actuarial Valuation Report for the Retirement System for General Employees of the Utility Board of the City of Key West (*System*). The purpose of this Report is to indicate appropriate contribution levels, comment on the actuarial stability of the System and to satisfy State requirements. Gabriel, Roeder, Smith & Company (*GRS*), as System actuary, is authorized by the Board of Trustees to prepare an annual actuarial valuation under Section 8.04(f) of the System.

This Report consists of this commentary, detailed Tables I through XV, the State Required Exhibit on Table XVI and Technical Definitions on Table XVII. The Tables contain basic System cost figures plus significant details on the benefits, liabilities and experience of the System. We suggest you thoroughly review the Report at your convenience and contact us with any questions that may arise.

[Pension System Costs](#)

The minimum payment consists of payment of annual normal costs and amortization of the components of the unfunded actuarial accrued liability over various periods as prescribed by law. The minimum payment for fiscal year ending December 31, 2020 is **39.7% (\$4,187,848)** of covered payroll. The figure in parentheses is the System cost expressed as the percentage of covered annual payroll applied to projected covered payroll as of January 1, 2020 (\$10,541,172).

[Changes in Actuarial Assumptions, Methods and System Benefits](#)

System benefits remain unchanged from the System benefits considered for the January 1, 2019 Actuarial Valuation. System benefits are summarized on Table IX.

Assumed investment return has been updated. The mortality assumptions have been updated to use the mortality assumptions used by the Florida Retirement System (FRS) as required under F.S.,

Chapter 2015-157 based upon the July 1, 2019 FRS Actuarial Valuation. The remaining actuarial assumptions and methods are unchanged from the January 1, 2019 Actuarial Valuation. The actuarial assumptions and methods are outlined on Table X.

Comparison of January 1, 2019 and January 1, 2020 Valuation Results

Table II of our Report provides information of a comparative nature. The right columns of the Table indicate the costs as calculated for the January 1, 2019 Actuarial Valuation. The middle columns indicate the costs as calculated for January 1, 2020, prior to the update in actuarial assumptions. The left columns indicate the costs as calculated for January 1, 2020, after the update in actuarial assumptions.

Comparing the right and middle columns of Table II shows the effect of System experience during the year. The number of active participants and covered payroll increased by approximately 3% and 5%, respectively. Total normal cost and the minimum funding requirement increased as a dollar amount but decreased as a percentage of covered payroll. The unfunded actuarial accrued liability decreased both as a dollar amount and as a percentage of covered payroll.

Comparing the left and middle columns of Table II shows the effect of the update of actuarial assumptions. Total normal cost, unfunded actuarial accrued liability and the minimum funding requirement all decreased both as a percentage of covered payroll and as a dollar amount.

The present value of vested accrued benefits exceeds the market value of System assets. The Vested Benefit Security Ratio is 91.1% (89.5% prior to update in actuarial assumptions). This is an increase from 78.3% as of the January 1, 2019 Actuarial Valuation. The Vested Benefit Security Ratio is based upon the market value of assets.

Table VII provides figures on recent System payroll growth experience. Recent System covered payroll growth experience indicates actual payroll growth averaged approximately 0.5% annually for the ten (10) fiscal years ended December 31, 2019. The payroll growth assumption is 3.0%, not in excess of the ten (10) year average annual payroll growth assumption. The cap on payroll growth assumption is provided under Florida Statute. The increase in payroll growth assumption from 0.3% to 0.5% decreased current year amortization payments.

Actuarial Gains / (Losses)

The System experienced an actuarial loss of **\$458,060** for 2019. Our Actuarial Valuation Report tracks the actual experience in three areas that are very significant in determining whether a gain or loss occurs. Table XIV presents compensation experience, tracks employee turnover and provides information on investment return.



Table XIV provides statistics on increases in pay enjoyed by active System Members. During 2019, pay increases to active Members averaged 4.9%. Pay increases were slightly below the average pay increase assumption of 5.2%. This suggests pay increases were generally an offsetting source of actuarial gain this year. Three, five and ten-year average annual pay increases are 5.3%, 5.5% and 4.3%, respectively.

In addition, Table XIV provides statistics for active System Members terminating service in comparison to the number of active System Members who were assumed to terminate under the withdrawal assumptions. Member turnover during 2019 was 70% of the assumed turnover. This suggests employee turnover was generally a source of actuarial loss this year. Three, five and ten-year average termination experience is 30%, 40% and 60% of expected turnover, respectively.

Table XIV also provides comparative statistics on the investment experience for the System. During 2019, the System experienced a smoothed investment return of approximately 7.80%. Smoothed investment return was above the 7.45% (prior assumption) anticipated rate of return. Smoothed investment return was an additional offsetting source of actuarial gain this year. The average smoothed actuarial value rate of return over the last three, five and ten-years is 7.2%, 7.4% and 7.0%, respectively. The corresponding one, three, five and ten-year average market value rates of return are 21.91%, 11.4%, 7.9% and 9.1%, respectively.

Member Census and Financial Data

The Utility Board submitted the Member census data as of January 1, 2020 used for this actuarial valuation to us. This information contains name, Social Security number, date of birth, date of hire, current rate of pay and actual salary paid in 2019. Dates of termination and retirement are provided where applicable. The Utility Board updated information on inactive participants including retirees, beneficiaries and vested terminees. Name, Social Security number and January 1, 2020 monthly benefit payment were provided for these members.

The Utility Board also supplied information on the assets of the System as of December 31, 2019.

We do not audit the Member census data and asset information provided to us; however, we perform certain reasonableness checks. The System is responsible for the accuracy of the census data and asset information.

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk



measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the System's funded status); and changes in System provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the System's future financial condition include:

1. Investment risk – actual investment returns may differ from the expected returns;
2. Asset/Liability mismatch – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the System's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
4. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and the actuarially determined contributions differing from expected;
5. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
6. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and the actuarially determined contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the actuarially determined contribution can be expected to increase (or decrease). Likewise if longevity is improving (or worsening), increases (or decreases) in the actuarially determined contribution can be anticipated.



The actuarially determined contribution rate shown on page one may be considered as a minimum contribution rate that complies with the Board's funding policy. The timely receipt of the actuarially determined contributions is critical to support the financial health of the system. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

System Maturity Measures

Risks facing a pension system evolve over time. A young system with virtually no investments and paying few benefits may experience little investment risk. An older system with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted system maturity measures include the following:

	<u>2019</u>	<u>2020</u>
Ratio of the market value of assets to total payroll	8.68	9.90
Ratio of actuarial accrued liability to payroll	11.93	11.63
Ratio of actives to retirees and beneficiaries	0.66	0.66
Ratio of net cash flow to market value of assets	-2.4%	-2.4%
Duration of the actuarial accrued liability	12.80	12.44

Ratio of Market Value of Assets to Payroll

The relationship between assets and payroll is a useful indicator of the potential volatility of the actuarially determined contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in the actuarially determined contributions as a percentage of payroll.

Ratio of Actuarial Accrued Liability to Payroll

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of the actuarially determined contributions for a fully funded system. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.



The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 2.5 times the payroll, a change in liability 2% other than assumed would equal 5% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also the actuarially determined contributions) as a percentage of payroll.

Ratio of Actives to Retirees and Beneficiaries

A young system with many active members and few retirees will have a high ratio of active to retirees. A mature open system may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed system may have significantly more retirees than actives resulting in a ratio below 1.0.

Ratio of Net Cash Flow to Market Value of Assets

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature system or a need for additional contributions.

Duration of Actuarial Accrued Liability

The duration of the actuarial accrued liability may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, duration of 10 indicates that the liability would increase approximately 10% if the assumed rate of return were lowered 1%.

Additional Risk Assessment

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability.

Summary

In our opinion the benefits currently provided for under the System will be sufficiently funded through the payment of the amount as indicated in this and future Actuarial Valuation Reports. We will continue to update you on the future payment requirements for the System through our actuarial Reports. These Reports will also continue to monitor the future experience of the System.



The actuarial assumptions used in this Actuarial Valuation are as adopted by the Board of Trustees. The demographic actuarial assumptions are based on the results of an actuarial experience study for the five-year period ended December 31, 2017. The mortality assumptions are prescribed by statute. Each assumption represents an estimate of future System experience.

If all actuarial assumptions are met and if all future minimum required contributions are paid, System assets will be sufficient to pay all System benefits, future contributions are expected to remain relatively stable as a percentage of payroll and the funded status of the System is expected to improve. System minimum required contributions are determined in compliance with the requirements of the Florida Protection of Public Employee Retirement Benefits Act with normal cost determined as a level percent of covered payroll and a level percent amortization payment using an initial amortization period of 30 years.

The Unfunded Actuarial Accrued Liability (UAAL) may not be appropriate for assessing the sufficiency of System assets to meet the estimated cost of settling benefit obligations but may be appropriate for assessing the need for or the amount of future contributions. The UAAL would be different if it reflected the market value of assets rather than the actuarial value of assets.

The GASB Net Pension Liability and System Fiduciary Net Position as a Percentage of Total Pension Liability may not be appropriate for assessing the sufficiency of System assets to meet the estimated cost of settling benefit obligations but may be appropriate for assessing the need for or the amount of future contributions. The GASB Net Pension Liability and System Fiduciary Net Position as a Percentage of Total Pension Liability are based upon the market value of assets.

This Report should not be relied on for any purpose other than the purpose described in the primary communication. Determinations of the financial results associated with the benefits described in this Report in a manner other than the intended purpose may produce significantly different results.

This Report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this Report is accurate and fairly presents the actuarial position of the System as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board and with applicable statutes.

This Report may be provided to parties other than the Board only in its entirety and only with the permission of an approved representative of the Board.

The signing actuaries are independent of the System and Utility Board.



Board of Trustees
April 10, 2020
Page Eight

The undersigned are Members of the American Academy of Actuaries and meet the qualification standards of the American Academy of Actuaries to render the actuarial opinions contained in this Report. We are available to respond to any questions with regards to matters covered in this Report.

Very truly yours,



Shelly L. Jones, A.S.A., E.A.
Consultant and Actuary



Jennifer M. Borregard, E.A.
Consultant and Actuary



Summary of Retirement Plan Costs

	Hired after May 31, 2010		Current Assumptions Hired before June 1, 2010		Total		Prior Assumptions		Total	
	January 1, 2020		January 1, 2020		January 1, 2020		January 1, 2020		January 1, 2019	
	<u>Cost</u> <u>Data</u>	<u>% of</u> <u>Payroll</u>	<u>Cost</u> <u>Data</u>	<u>% of</u> <u>Payroll</u>	<u>Cost</u> <u>Data</u>	<u>% of</u> <u>Payroll</u>	<u>Cost</u> <u>Data</u>	<u>% of</u> <u>Payroll</u>	<u>Cost</u> <u>Data</u>	<u>% of</u> <u>Payroll</u>
A. Participant Data Summary (Table III)										
1. Active Employees	54	N/A	73	N/A	127	N/A	127	N/A	123	N/A
2. Terminated Vested	1	N/A	21	N/A	22	N/A	22	N/A	22	N/A
3. Receiving Benefits	0	N/A	191	N/A	191	N/A	191	N/A	186	N/A
4. Total Participants	55	N/A	285	N/A	340	N/A	340	N/A	331	N/A
5. Annual Payroll of Active Employees	\$ 4,035,362	100.0%	\$ 6,505,810	100.0%	\$ 10,541,172	100.0%	\$ 10,541,172	100.0%	\$10,080,796	100.0%
B. Total Normal Costs										
1. Age Retirement Benefits	\$ 321,437	8.0%	\$ 925,547	14.2%	\$ 1,246,984	11.8%	\$ 1,261,056	12.0%	\$ 1,235,346	12.3%
2. Deferred Vesting Benefits	42,821	1.1%	112,355	1.7%	155,176	1.5%	158,197	1.5%	152,486	1.5%
3. Death Benefits	28,950	0.7%	54,008	0.8%	82,958	0.8%	89,728	0.9%	87,134	0.9%
4. Disability Benefits	14,436	0.4%	47,671	0.7%	62,107	0.6%	60,010	0.6%	58,065	0.6%
5. Subtotal	\$ 407,644	10.1%	\$ 1,139,581	17.5%	\$ 1,547,225	14.7%	\$ 1,568,991	14.9%	\$ 1,533,031	15.2%
6. Administrative Expenses	N/A		N/A		64,776	0.6%	64,776	0.6%	64,422	0.6%
7. Total Annual Normal Costs	N/A		N/A		\$ 1,612,001	15.3%	\$ 1,633,767	15.5%	\$ 1,597,453	15.8%

Summary of Retirement Plan Costs

	Current Assumptions		Prior Assumptions		January 1, 2019	
	January 1, 2020		January 1, 2020			
	Cost	% of	Cost	% of	Cost	% of
	Data	Payroll	Data	Payroll	Data	Payroll
C. Total Actuarial Accrued Liability						
1. Age Retirement Benefits Active Employees	\$ 31,350,897	297.4%	\$ 31,976,912	303.4%	\$ 31,902,446	316.5%
2. Deferred Vested Benefits Active Employees	136,768	1.3%	150,789	1.4%	150,475	1.5%
3. Death Benefits Active Employees	387,643	3.7%	574,812	5.5%	585,211	5.8%
4. Disability Benefits Active Employees	958,028	9.1%	908,811	8.6%	895,320	8.9%
5. Retired or Terminated Vested Participants Receiving Benefits	80,519,308	763.9%	81,825,553	776.2%	77,479,424	768.6%
6. Terminated Vested Participants Entitled to Future Benefits	1,944,852	18.5%	2,000,433	19.0%	1,832,429	18.2%
7. Deceased Participants Whose Beneficiaries are Receiving Benefits	5,530,701	52.5%	5,644,988	53.6%	5,612,780	55.7%
8. Disabled Participants Receiving Benefits	1,775,655	16.8%	1,852,717	17.6%	1,841,942	18.3%
9. Total Actuarial Accrued Liability	<u>\$ 122,603,852</u>	1163.1%	<u>\$ 124,935,015</u>	1185.2%	<u>\$ 120,300,027</u>	1193.4%
D. Market Value of Assets (Table IV)	\$ 104,325,620	989.7%	\$ 104,325,620	989.7%	\$ 87,492,294	867.9%
E. Smoothed Actuarial Value of Assets (Table V)	\$ 97,054,114	920.7%	\$ 97,054,114	920.7%	\$ 92,062,389	913.2%
F. Unfunded Actuarial Accrued Liability (C-E)	\$ 25,549,738	242.4%	\$ 27,880,901	264.5%	\$ 28,237,638	280.1%
G. Minimum Required Contribution						
1. Total Normal Cost	\$ 1,612,001	15.3%	\$ 1,633,767	15.5%	\$ 1,597,453	15.8%
2. Amortization of Unfunded Liability	2,426,425	23.0%	2,608,020	24.7%	2,611,377	25.9%
3. Interest Adjustment	149,422	1.4%	158,007	1.5%	156,779	1.6%
4. Total Payment	<u>\$ 4,187,848</u>	39.7%	<u>\$ 4,399,794</u>	41.7%	<u>\$ 4,365,609</u>	43.3%
H. Actuarial Gain / (Loss) (Table VI)	\$ (458,060)	(4.3%)	\$ (458,060)	(4.3%)	\$ (2,093,983)	(20.8%)

Summary of Retirement Plan Costs

	Current Assumptions January 1, 2020		Prior Assumptions January 1, 2020		January 1, 2019	
	<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	\$ 87,825,664	833.2%	\$ 89,323,258	847.4%	\$ 84,934,146	842.5%
2. Terminated Vested Participants Entitled to Future Benefits	1,944,852	18.5%	2,000,433	19.0%	1,832,429	18.2%
3. Active Participants Entitled to Future Benefits	24,698,376	234.3%	25,287,004	239.9%	24,925,491	247.3%
4. Total Actuarial Present Value of Vested Accrued Benefits	\$ 114,468,892	1085.9%	\$ 116,610,695	1106.2%	\$ 111,692,066	1108.0%
J. Unfunded Actuarial Present Value of Vested Accrued Benefits (I.4 - D., not less than zero)	\$ 10,143,272	96.2%	\$ 12,285,075	116.5%	\$ 24,199,772	240.1%
K. Vested Benefit Security Ratio (VBSR) (D. ÷ I.4.)	91.1%	N/A	89.5%	N/A	78.3%	N/A
L. Expected Contribution to meet VBSR of:						
- 85%	N/A	N/A	N/A	N/A	\$ 7,445,962	73.9%
- 90%	N/A	N/A	\$ 624,006	5.9%	\$ 13,030,565	129.3%
- 95%	\$ 4,419,827	41.9%	\$ 6,454,540	61.2%	\$ 18,615,169	184.7%
- 100%	\$ 10,143,272	96.2%	\$ 12,285,075	116.5%	\$ 24,199,772	240.1%

Comparison of Cost Data of January 1, 2019 and January 1, 2020 Valuations

	Current Assumptions January 1, 2020		Prior Assumptions January 1, 2020		January 1, 2019	
	Cost Data	% of Annual Compensation	Cost Data	% of Annual Compensation	Cost Data	% of Annual Compensation
A. Participants						
1. Active Employees	127	N/A	127	N/A	123	N/A
2. Terminated Vested	22	N/A	22	N/A	22	N/A
3. Receiving Benefits	191	N/A	191	N/A	186	N/A
4. Annual Payroll of Active Employees	\$ 10,541,172	100.0%	\$ 10,541,172	100.0%	\$ 10,080,796	100.0%
B. Total Normal Costs	\$ 1,612,001	15.3%	\$ 1,633,767	15.5%	\$ 1,597,453	15.8%
C. Total Actuarial Accrued Liability	\$ 122,603,852	1163.1%	\$ 124,935,015	1185.2%	\$ 120,300,027	1193.4%
D. Smoothed Actuarial Value of Assets	\$ 97,054,114	920.7%	\$ 97,054,114	920.7%	\$ 92,062,389	913.2%
E. Unfunded Actuarial Accrued Liability	\$ 25,549,738	242.4%	\$ 27,880,901	264.5%	\$ 28,237,638	280.1%
F. Net Minimum Funding Payment	\$ 4,187,848	39.7%	\$ 4,399,794	41.7%	\$ 4,365,609	43.3%
G. Actuarial Gain / (Loss)	\$ (458,060)	(4.3%)	\$ (458,060)	(4.3%)	\$ (2,093,983)	(20.8%)
H. Unfunded Actuarial Present Value of Vested Accrued Benefits	\$ 10,143,272	96.2%	\$ 12,285,075	116.5%	\$ 24,199,772	240.1%
I. Vested Benefit Security Ratio (VBSR)	91.1%	N/A	89.5%	N/A	78.3%	N/A
J. Expected Contribution to meet VBSR of:						
- 85%	N/A	N/A	N/A	N/A	\$ 7,445,962	73.9%
- 90%	N/A	N/A	\$ 624,006	5.9%	\$ 13,030,565	129.3%
- 95%	\$ 4,419,827	41.9%	\$ 6,454,540	61.2%	\$ 18,615,169	184.7%
- 100%	\$ 10,143,272	96.2%	\$ 12,285,075	116.5%	\$ 24,199,772	240.1%

**Characteristics of Participants in
Actuarial Valuation as of January 1, 2020**

A. Active Plan Participants Summary

1. Active participants as of beginning of prior year	123
2. New entrants during prior year	12
3. Exits during prior year	(8)
4. Active participants as of beginning of year	127
5. Active participants fully vested	72
6. Active participants partially vested	12
7. Active participants non-vested	43
8. Annual payroll of active participants	\$ 10,541,172
9. Average pay	\$ 83,001
10. Average hire age	32.72 years
11. Average attained age	43.89 years
12. Percent female	33.1%

B. Characteristics of Inactive Participants

1. Inactives as of beginning of prior year	208
2. Newly inactive during prior year	6
3. Exits during prior year	(1)
4. Inactives as of beginning of year	213
5. Age retirees	164
6. Projected annual benefits for age retirees	\$ 6,285,481
7. Beneficiaries of deceased participants	19
8. Projected annual benefits for beneficiaries	\$ 470,076
9. Disabled participants receiving benefits	8
10. Projected annual benefits for disabled participants	\$ 185,768
11. Terminated vested due deferred benefits	22
12. Projected annual benefits for terminated vested participants	\$ 196,893

Statement of Assets as of January 1, 2020 *

<u>Assets</u>	<u>Market Value</u>
<u>Investments at Market Value</u>	
Cash and Cash Equivalents	\$ 2,595,884
Bonds	10,998,305
Mutual Funds	
- Asset Allocation Fund	5,020,301
- Vanguard Domestic Stock Mutual Fund	29,353,397
- Vanguard International Stock Mutual Fund	5,794,117
- Global Bond Mutual Fund	3,972,015
- International Growth Mutual Fund	7,188,786
International Equities	0
Common Stocks	30,174,982
Real Estate	8,690,243
Total Investments	<u>\$ 103,788,030</u>
<u>Receivables</u>	
Accrued Interest	\$ 82,687
Pending Trades	153,171
Utility Board Contributions	4,920
Miscellaneous	0
Total Receivables	<u>\$ 240,778</u>
<u>Other - Prepaid Benefits and Expenses</u>	\$ 558,394
<u>Liabilities</u>	
Accrued Expenses & Benefits and Accounts Payable	\$ 69,418
Pending Trades	192,164
Total Liabilities	<u>\$ 261,582</u>
<u>Net Assets Available for Benefits</u>	\$ 104,325,620

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

Table V

Reconciliation of Plan Assets *

A. <u>Market Value of Assets as of January 1, 2019</u>	\$ 87,492,294
B. <u>Receipts During Year</u>	
1. Utility Board contributions	\$ 4,468,689
2. Interest, dividends and other	
(a) Dividends, interest and other	\$ 2,411,796
(b) Investment fees	352,768
(c) Net dividends, interest and other [(a)-(b)]	<u>\$ 2,059,028</u>
3. Realized gains / (losses)	\$ 4,864,125
4. Unrealized gains / (losses)	<u>\$ 12,014,456</u>
5. Net receipts during year	\$ 23,406,298
C. <u>Disbursements During Year</u>	
1. Pension benefit payments	\$ 6,513,941
2. Contribution refunds	0
3. Administrative expenses paid	<u>59,031</u>
4. Total disbursements during year	\$ 6,572,972
D. <u>Market Value of Assets as of December 31, 2019</u>	\$ 104,325,620

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

Development of Smoothed Actuarial Value of Assets as of December 31

	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
A. Preliminary smoothed actuarial value from prior year	\$ 89,650,519	\$ 92,062,389	\$ 97,054,114			
B. Market value end of year	87,492,294	104,325,620				
C. Market value beginning of year	91,629,477	87,492,294	104,325,620			
D. Non-investment net cash flow	(2,176,116)	(2,104,283)				
E. Investment return						
1. Total market value return: B. - C. - D.	(1,961,067)	18,937,609				
2. Amount for immediate recognition (7.5% / 7.45%)	6,790,606	6,439,791				
3. Amount for phased-in recognition: E.1. - E.2.	(8,751,673)	12,497,818				
F. Phased-in recognition of investment return						
1. Current year: 20% of E.3.	(1,750,335)	2,499,564				
2. First prior year	1,327,571	(1,750,335)	2,499,564			
3. Second prior year	(130,890)	1,327,571	(1,750,335)	2,499,564		
4. Third prior year	(1,289,693)	(130,890)	1,327,571	(1,750,335)	2,499,564	
5. Fourth prior year	(359,273)	(1,289,693)	(130,889)	1,327,573	(1,750,333)	2,499,562
6. Total phased-in recognition of investment return	(2,202,620)	656,217	1,945,911	2,076,802	749,231	2,499,562
G. Smoothed actuarial value end of year						
1. Preliminary smoothed actuarial value end of year:						
A. + D. + E.2. + F.6.	92,062,389	97,054,114				
2. Upper corridor limit: 120% of B.	104,990,753	125,190,744				
3. Lower corridor limit: 80% of B.	69,993,835	83,460,496				
4. Smoothed actuarial value end of year:						
G.1., not more than G.2., nor less than G.3.	92,062,389	97,054,114				
H. Difference between market value and smoothed actuarial value	(4,570,095)	7,271,506				
I. Smoothed actuarial value rate of return	5.2%	7.80%				
J. Market value rate of return	(2.2%)	21.91%				

Actuarial Gain / (Loss) for
System Year Ended December 31, 2019

A. Derivation of Actuarial Gain / (Loss)

1. Normal cost previous actuarial valuation	\$ 1,597,453
2. Unfunded actuarial accrued liability previous actuarial valuation	28,237,638
3. Utility Board contributions	4,468,689
4. Interest on:	
(a) Normal cost	\$ 119,010
(b) Unfunded actuarial accrued liability	2,103,704
(c) Utility Board contributions	166,275
(d) Net total: (a) + (b) - (c)	<u>\$ 2,056,439</u>
5. Increase / (decrease) in unfunded actuarial accrued liability due to assumption change	\$ (2,331,163)
6. Expected unfunded actuarial accrued liability current year: (1. + 2. - 3. + 4. + 5.)	\$ 25,091,678
7. Actual unfunded actuarial accrued liability current year	<u>25,549,738</u>
8. Actuarial gain / (loss): (6. - 7.)	<u>\$ (458,060)</u>

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

1. Smoothed actuarial value of assets previous year	\$ 92,062,389
2. Contributions during year	4,468,689
3. Benefits and administrative expenses during year	6,572,972
4. Expected appreciation for period	<u>6,780,080</u>
5. Expected smoothed actuarial value of assets current year: (1. + 2. - 3. + 4.)	\$ 96,738,186
6. Actual smoothed actuarial value of assets current year	\$ 97,054,114
7. Approximate gain / (loss) due to investments: (6. - 5.)	\$ 315,928

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

\$ (773,988)

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

<u>Date</u>	<u>Unfunded Liability</u>	<u>Amortization Payment</u>
January 1, 2020	\$ 25,549,738	\$ 2,426,425
January 1, 2021	\$ 24,834,436	\$ 2,438,555
January 1, 2022	\$ 24,053,176	\$ 2,450,747
January 1, 2023	\$ 23,201,012	\$ 2,462,999
January 1, 2024	\$ 22,272,625	\$ 2,475,317
...		
...		
January 1, 2050	\$ 0	\$ 0

B. Covered Payroll History

<u>Date</u>	<u>Covered Payroll</u>	<u>Annual Increase</u>
January 1, 2020	\$ 10,541,172	4.6%
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	N/A
Ten-Year Average Annual Increase		0.5%

Accounting Disclosure Exhibit

	Current Assumptions 01/01/2020	Prior Assumptions 01/01/2020	01/01/2019
I. <u>Number of System Members</u>			
1. Retirees and beneficiaries receiving benefits	191	191	186
2. Terminated System members entitled to but not yet receiving benefits	22	22	22
3. Active System members	127	127	123
4. Total	<u>340</u>	<u>340</u>	<u>331</u>
II. <u>Financial Accounting Standards Board Allocation</u>			
<u>As of January 1, 2020</u>			
A. <u>Statement of Accumulated System Benefits</u>			
1. Actuarial present value of accumulated vested System benefits			
a. Participants currently receiving benefits	\$ 87,825,664	\$ 89,323,258	\$ 84,934,146
b. Other participants	26,643,228	27,287,437	26,757,920
c. Total	<u>\$ 114,468,892</u>	<u>\$ 116,610,695</u>	<u>\$ 111,692,066</u>
2. Actuarial present value of accumulated non-vested System benefits	<u>\$ 759,558</u>	<u>\$ 783,971</u>	<u>\$ 803,023</u>
3. Total actuarial present value of accumulated System benefits	\$ 115,228,450	\$ 117,394,666	\$ 112,495,089
B. <u>Statement of Change in Accumulated System Benefits</u>			
1. Actuarial present value of accumulated System benefits as of January 1, 2019	\$ 112,495,089		
2. Increase / (decrease) during year attributable to:			
a. System amendment	\$ 0		
b. Change in actuarial assumptions	(2,166,216)		
c. Benefits paid	(6,513,941)		
d. Other, including benefits accumulated, increase for interest due to decrease in the discount period	11,413,518		
e. Net increase	<u>\$ 2,733,361</u>		
3. Actuarial present value of accumulated System benefits as of January 1, 2020	\$ 115,228,450		
C. <u>Significant Matters Affecting Calculations</u>			
1. Assumed rate of return used in determining actuarial present values	7.40%		
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 12/31/2020 *	12/31/2019	12/31/2018	12/31/2017	12/31/2016	12/31/2015	12/31/2014
A. Total Pension Liability							
Service Cost	\$ 1,547,225	\$ 1,533,031	\$ 1,513,840	\$ 1,653,371	\$ 1,689,246	\$ 1,615,566	\$ 1,688,924
Interest	8,928,479	8,833,919	8,625,293	8,313,210	8,043,700	7,503,157	7,233,694
Benefit Changes	0	0	0	132,646	0	0	0
Difference Between Actual and Expected Experience	781,979	26,942	333,184	(756,398)	465,515	(399,487)	(552,616)
Assumption Changes	(2,331,163)	(218,579)	0	113,197	2,800,797	0	3,883,996
Benefit Payments, including Refunds of Member Contributions	(6,991,905)	(6,513,941)	(6,275,076)	(5,723,180)	(5,462,925)	(5,040,021)	(4,673,833)
Net Change in Total Pension Liability	\$ 1,934,615	\$ 3,661,372	\$ 4,197,241	\$ 3,732,846	\$ 7,536,333	\$ 3,679,215	\$ 7,580,165
Total Pension Liability (TPL) - (beginning of year)	124,153,036	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)	\$ 126,087,651	\$ 124,153,036	\$ 120,491,664	\$ 116,294,423	\$ 112,561,577	\$ 105,025,244	\$ 101,346,029
B. System Fiduciary Net Position							
Contributions - System Sponsor	\$ 4,187,848	\$ 4,468,689	\$ 4,175,289	\$ 3,860,513	\$ 3,986,227	\$ 3,653,199	\$ 3,511,645
Contributions - Member	0	0	0	0	0	0	0
Net Investment Income	7,613,949	18,937,609	(1,961,067)	12,634,539	5,090,087	(550,552)	3,909,304
Benefit Payments, including Refunds of Member Contributions	(6,991,905)	(6,513,941)	(6,275,076)	(5,723,180)	(5,462,925)	(5,040,021)	(4,673,833)
Administrative Expenses	(64,776)	(59,031)	(76,329)	(58,967)	(57,971)	(67,452)	(75,519)
Other	0	0	0	0	0	0	0
Net Change in System Fiduciary Net Position	\$ 4,745,116	\$ 16,833,326	\$ (4,137,183)	\$ 10,712,905	\$ 3,555,418	\$ (2,004,826)	\$ 2,671,597
System Fiduciary Net Position - (beginning of year)	104,325,620	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)	\$ 109,070,736	\$ 104,325,620	\$ 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)	\$ 17,016,915	\$ 19,827,416	\$ 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)	86.50 %	84.03 %	72.61 %	78.79 %	71.89 %	73.66 %	78.31 %
E. Covered Employee Payroll **	\$ 10,541,172	\$ 10,320,299	\$ 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)	161.43 %	192.12 %	350.12 %	260.67 %	340.57 %	296.84 %	245.36 %
G. Notes to Schedule:							
Valuation Date	01/01/2020	01/01/2019	01/01/2018	01/01/2017	01/01/2016	01/01/2015	01/01/2014
Reporting Date (GASB No. 68)	09/30/2021	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>
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	4,468,689	4,468,689	0	10,320,299	43.30%
2020 ²	4,187,848	4,187,848	0	10,541,172	39.73%

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 Payroll ¹</u>	<u>Actual Contribution as a % of Covered Payroll</u>
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	4,395,339	4,395,339	0	10,096,482	43.53%
2020 ²	4,258,058	4,258,058	0	10,485,954	40.61%

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	2.60%
Salary Increases	4.0% - 7.0%
Investment Rate of Return	7.45%
Payroll Growth Assumption	3.0% per year, but limited to average annual increase over most recent ten years (0.3%).
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.

Assumption Changes

2019: Investment return, employee withdrawal rates, salary increase factors and retirement rates updated. 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.

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

Discount rates of 7.45% and 7.40% were used to measure the December 31, 2019 TPL and the December 31, 2020 TPL, respectively. These discount rates were based on the expected rate of return on System investments of 7.45% and 7.40%. 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, 2019

	1% Decrease	Current Discount Rate	1% Increase
Discount Rate	6.45%	7.45%	8.45%
NPL	\$ 35,519,990	\$ 19,827,416	\$ 6,897,459

Measurement date: December 31, 2020 *

	1% Decrease	Current Discount Rate	1% Increase
Discount Rate	6.40%	7.40%	8.40%
NPL	\$ 32,520,596	\$ 17,016,915	\$ 4,193,515

* 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, 2020: \$ 3,289,600

Summary of Outstanding Deferred Inflows and Outflows of Resources as of September 30, 2020

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Differences between actual and expected experience on liabilities	\$ 150,914	\$ 68,762
Changes of assumptions or other inputs	10,291	159,504
Net difference between projected and actual earnings on System investments	<u>0</u>	<u>7,271,506</u>
Total	<u>\$ 161,205</u>	<u>\$ 7,499,772</u>

Projected Deferred Outflows for Utility Board Contributions to Be Recognized in Pension Expense for Fiscal Year Ending September 30, 2021: \$ 3,140,886

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>
2021	\$ (1,955,210)
2022	(2,098,306)
2023	(785,489)
2024	(2,499,562)
2025	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						
	12/31/2020 *	12/31/2019	12/31/2018	12/31/2017	12/31/2016	12/31/2015	12/31/2014
Service Cost	\$ 1,547,225	\$ 1,533,031	\$ 1,513,840	\$ 1,653,371	\$ 1,689,246	\$ 1,615,566	\$ 1,688,924
Interest on Total Pension Liability	8,928,479	8,833,919	8,625,293	8,313,210	8,043,700	7,503,157	7,233,694
Current-Period Benefit Changes	0	0	0	132,646	0	0	0
Contributions - Member	0	0	0	0	0	0	0
Projected Earnings on System Investments	(7,613,949)	(6,439,791)	(6,790,606)	(5,996,682)	(5,744,536)	(5,897,913)	(5,705,665)
Administrative Expenses	64,776	59,031	76,329	58,967	57,971	67,452	75,519
Other Changes in System Fiduciary Net Position	0	0	0	0	0	0	0
Recognition of Beginning Deferred Outflows / (Inflows) due to Liabilities	(416,979)	(40,373)	934,737	1,036,752	1,938,318	884,669	1,009,509
Recognition of Beginning Deferred Outflows / (Inflows) due to Assets	(1,945,911)	(656,217)	2,202,620	452,284	1,779,855	1,648,965	359,272
Total Pension Expense	<u>\$ 563,641</u>	<u>\$ 3,289,600</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 12/31/2019	Recognition Amount for 2019	Balance as of 12/31/2019
2016	\$ 465,515	3.1	0.0	\$ 15,017	\$ 0
2017	0	3.3	0.3	0	0
2018	333,184	3.3	1.3	100,965	131,254
2019	26,942	3.7	2.7	7,282	19,660
TOTAL				\$ 123,264	\$ 150,914

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 12/31/2019	Recognition Amount for 2019	Balance as of 12/31/2019
2016	\$ 0	3.1	0.0	\$ 0	\$ 0
2017	(756,398)	3.3	0.3	(229,212)	(68,762)
2018	0	3.3	1.3	0	0
2019	0	3.7	2.7	0	0
TOTAL				\$ (229,212)	\$ (68,762)

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 12/31/2019	Recognition Amount for 2019	Balance as of 12/31/2019
2016	\$ 2,800,797	3.1	0.0	\$ 90,348	\$ 0
2017	113,197	3.3	0.3	34,302	10,291
2018	0	3.3	1.3	0	0
2019	0	3.7	2.7	0	0
TOTAL				\$ 124,650	\$ 10,291

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 12/31/2019	Recognition Amount for 2019	Balance as of 12/31/2019
2016	\$ 0	3.1	0.0	\$ 0	\$ 0
2017	0	3.3	0.3	0	0
2018	0	3.3	1.3	0	0
2019	(218,579)	3.7	2.7	(59,075)	(159,504)
TOTAL				\$ (59,075)	\$ (159,504)

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 12/31/2019	Recognition Amount for 2019	Balance as of 12/31/2019
2015	\$ 6,448,465	5	0	\$ 1,289,693	\$ 0
2016	654,449	5	1	130,890	130,889
2017	(6,637,857)	5	2	(1,327,571)	(2,655,144)
2018	8,751,673	5	3	1,750,335	5,251,003
2019	(12,497,818)	5	4	(2,499,564)	(9,998,254)
TOTAL				\$ (656,217)	\$ (7,271,506)

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 participants during employment, PUB-2010 Headcount Weighted General Below Median Employee Mortality Table, separate rates for males and females, set back 1 year for males, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018.

For healthy participants post employment, PUB-2010 Headcount Weighted General Below Median Healthy Retiree Mortality Table, separate rates for males and females, set back 1 year for males, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018.

For disabled participants, PUB-2010 Headcount Weighted General Disabled Retiree Mortality Table, separate rates for males and females, both set forward 3 years, without projected mortality improvement.

Sample Ages (2020)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	32.58	35.02	28.63
60	27.74	30.00	24.55	27.84
62	25.85	28.02	22.93	26.02

Sample Ages (2040)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	34.22	36.50	30.64
60	29.30	31.44	26.40	29.51
62	27.37	29.43	24.72	27.63

B. Interest to be Earned by Fund

7.40%, net of investment expenses, compounded annually - includes inflation of 2.60%.

C. Allowances for Expenses or Contingencies

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

Actuarial Assumptions and Actuarial Cost Methods
Used in the Valuation

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.

Age	Salary Increase Factors		
	Assumed Wage Inflation	Promotion & Seniority	Total Current Rates
< 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.

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%

Actuarial Assumptions and Actuarial Cost Methods
Used in the Valuation

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.

J. Increase in Covered Payroll

3.0% per year, but limited to average annual increase over most recent ten years (0.5%).

K. Cost Methods

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.

Vested Normal Retirement, Termination, Disability, and Death Benefits: Unit Credit Cost Method

Under this method, the actuarial present value of vested accrued benefits is an amount calculated to be the sum of the present values of each individual's vested accrued or earned benefit under the System as of the valuation date. Each individual's calculation is based on pay and service as of the valuation date.

Actuarial Assumptions and Actuarial Cost Methods
Used in the Valuation

L. Changes Since Previous Valuation

1. Mortality was:

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 (2020)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	30.75	33.76	30.32
60	25.82	28.73	25.66	28.63
62	23.92	26.77	23.82	26.71

Sample Ages (2040)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	32.88	35.58	32.47
60	27.99	30.56	27.84	30.47
62	26.08	28.58	25.99	28.53

2. Interest to be Earned by Fund was:

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

Reconciliation of System ParticipantsA. Active Participants

1. Active participants previous year	123
2. Retired during year	(5)
3. Deceased during year	0
4. Disabled during year	0
5. Terminated during year	(3)
6. New active participants	11
7. Rehired participants	1
8. Active participants	<u>127</u>

B. Participants Receiving Benefits

1. Participants receiving benefits previous year	186
2. New retired participants	5
3. New terminated vested receiving benefits	1
4. New disabled receiving benefits	0
5. New beneficiaries receiving benefits	0
6. Deceased or ceased payment during year	(1)
7. Retired or terminated vested receiving benefits current year	<u>191</u>

C. Terminated Vested Participants Entitled to Future Benefits

1. Terminated vested entitled previous year	22
2. Deceased during year	0
3. Commenced receiving benefits during year	(1)
4. New terminated vested	1
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, 2020

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	1	-	-	-	-	-	-	1
25 - 29	9	-	-	-	-	-	-	9
30 - 34	12	7	6	-	-	-	-	25
35 - 39	6	2	7	2	-	-	-	17
40 - 44	6	-	4	7	-	-	-	17
45 - 49	1	-	4	3	2	2	-	12
50 - 54	2	1	8	1	3	4	2	21
55 - 59	6	1	3	1	1	2	-	14
60 - 64	-	-	3	1	-	2	-	6
65 - 69	-	1	-	1	-	-	-	2
70 & Over	-	-	2	-	-	1	-	3
TOTAL	43	12	37	16	6	11	2	127
				<u>01/01/2019</u>		<u>01/01/2020</u>		
	Average Attained Age			44.24 years		43.89 years		
	Average Hire Age			32.65 years		32.72 years		
	Average Pay			\$ 81,958		\$ 83,001		
	Percent Female			31.7%		33.1%		

**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	13	\$ 123,191	\$ 9,476
50 - 54	5	40,593	8,119
55 - 59	4	33,109	8,277
60 - 64	-	-	-
65 - 69	-	-	-
70 & Over	-	-	-
TOTAL	22	\$ 196,893	\$ 8,950

B. Receiving Benefits

<u>Current Age Group</u>	<u>Count</u>	<u>Total Annual Benefit</u>	<u>Average Annual Benefit</u>
Less than 50	2	\$ 54,399	\$ 27,200
50 - 54	17	843,950	49,644
55 - 59	28	1,133,538	40,484
60 - 64	36	1,092,124	30,337
65 - 69	25	799,452	31,978
70 - 74	27	936,637	34,690
75 - 79	26	943,542	36,290
80 - 84	21	934,402	44,495
85 - 89	8	192,835	24,104
90 & Over	1	10,446	10,446
TOTAL	191	\$ 6,941,325	\$ 36,342

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
2019	4.9%	5.2%	0.7	7.80%	21.91%	7.45%
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%
Last 3 Years	5.3%	5.5%	0.3	7.2%	11.4%	7.5%
Last 5 Years	5.5%	5.6%	0.4	7.4%	7.9%	7.5%
Last 10 Years	4.3%	6.2%	0.6	7.0%	9.1%	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>
01/01/2020	12/31/2020	\$ 4,187,848 *	N/A
01/01/2019	12/31/2019	\$ 4,468,689	\$ 4,468,689
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

* 39.7% of expected 2020 covered payroll - \$10,541,172

Actuarial Valuation as of January 1, 2020State Required Exhibit

	<u>Current Assumptions 01/01/2020</u>	<u>Prior Assumptions 01/01/2020</u>	<u>01/01/2019</u>
A. <u>Participant Data</u>			
1. Active participants	127	127	123
2. Retired participants and beneficiaries receiving benefits	183	183	178
3. Disabled participants receiving benefits	8	8	8
4. Terminated vested participants	22	22	22
5. Annual payroll of active participants	\$ 10,541,172	\$ 10,541,172	\$ 10,080,796
6. Annual benefits payable to those currently receiving benefits	\$ 6,941,325	\$ 6,941,325	\$ 6,507,549
B. <u>Smoothed Actuarial Value of Assets</u>	\$ 97,054,114	\$ 97,054,114	\$ 92,062,389
C. <u>Liabilities</u>			
1. Actuarial present value of future expected benefit payments for active members			
a. Retirement benefits	\$ 41,414,781	\$ 42,109,596	\$ 41,659,899
b. Vesting benefits	1,824,432	1,863,863	1,788,163
c. Death benefits	978,757	1,166,744	1,144,603
d. Disability benefits	1,209,661	1,173,908	1,144,119
e. Total	\$ 45,427,631	\$ 46,314,111	\$ 45,736,784
2. Actuarial present value of future expected benefit payments for terminated vested members	\$ 1,944,852	\$ 2,000,433	\$ 1,832,429
3. Actuarial present value of future expected benefit payments for members currently receiving benefits			
a. Service retired	\$ 80,519,308	\$ 81,825,553	\$ 77,479,424
b. Disability retired	1,775,655	1,852,717	1,841,942
c. Beneficiaries	5,530,701	5,644,988	5,612,780
d. Total	\$ 87,825,664	\$ 89,323,258	\$ 84,934,146

Actuarial Valuation as of January 1, 2020

State Required Exhibit

	Current Assumptions 01/01/2020	Prior Assumptions 01/01/2020	01/01/2019
4. Total actuarial present value of future expected benefit payments	\$ 135,198,147	\$ 137,637,802	\$ 132,503,359
5. Actuarial accrued liability	\$ 122,603,852	\$ 124,935,015	\$ 120,300,027
6. Unfunded actuarial accrued liability	\$ 25,549,738	\$ 27,880,901	\$ 28,237,638
D. <u>Statement of Accumulated System Benefits</u>			
1. Actuarial present value of accumulated vested benefits			
a. Participants currently receiving benefits	\$ 87,825,664	\$ 89,323,258	\$ 84,934,146
b. Other participants	26,643,228	27,287,437	26,757,920
c. Total	<u>\$ 114,468,892</u>	<u>\$ 116,610,695</u>	<u>\$ 111,692,066</u>
2. Actuarial present value of accumulated non-vested System benefits	<u>759,558</u>	<u>783,971</u>	<u>803,023</u>
3. Total actuarial present value of accumulated System benefits	\$ 115,228,450	\$ 117,394,666	\$ 112,495,089
E. <u>Statement of Change in Accumulated System Benefits</u>			
1. Actuarial present value of accumulated System benefits as of January 1, 2019	\$ 112,495,089		
2. Increase (decrease) during year attributable to:			
a. System amendment	\$ 0		
b. Change in actuarial assumptions	(2,166,216)		
c. Benefits paid	(6,513,941)		
d. Other, including benefits accumulated and increase for interest due to decrease in the discount period	11,413,518		
e. Net increase	<u>\$ 2,733,361</u>		
3. Actuarial present value of accumulated System benefits as of January 1, 2020	\$ 115,228,450		

Actuarial Valuation as of January 1, 2020

State Required Exhibit

	Current Assumptions 01/01/2020	Prior Assumptions 01/01/2020	01/01/2019
F. <u>Pension Cost</u>			
1. Total normal cost	\$ 1,612,001	\$ 1,633,767	\$ 1,597,453
2. Payment required to amortize unfunded liability	2,426,425	2,608,020	2,611,377
3. Interest adjustment	149,422	158,007	156,779
4. Total required contribution	\$ 4,187,848	\$ 4,399,794	\$ 4,365,609
5. Item 4 as a percentage of payroll	39.7%	41.7%	43.3%
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	\$ 4,187,848	\$ 4,399,794	\$ 4,365,609
9. Item 8 as a percentage of payroll	39.7%	41.7%	43.3%
G. <u>Past Contributions</u>			
1. Total contribution required (% of actual payroll)	\$ 4,187,848	\$ 4,399,794	\$ 4,468,689
2. Actual contributions made	N/A	N/A	\$ 4,468,689
H. <u>Net Actuarial Gain / (Loss)</u>			
	\$ (458,060)	\$ (458,060)	\$ (2,093,983)
I. <u>Disclosure of Following Items:</u>			
1. Actuarial present value of future salaries - attained age	\$ 93,182,162	\$ 92,749,728	\$ 86,836,551
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

	Unfunded Actuarial Accrued Liabilities	Current Unfunded Liabilities	Current Assumption Amortization Payment	Prior Assumption Amortization Payment	Remaining Funding Period
01/01/2003	Actuarial Loss / (Gain)	8,195,526	910,628	912,783	13 years
01/01/2003	Method Change	(7,076,000)	(786,234)	(788,095)	13 years
01/01/2003	Assumption Change	(447,405)	(49,712)	(49,830)	13 years
01/01/2004	Actuarial Loss / (Gain)	1,787,588	189,732	190,212	14 years
01/01/2005	Retiree Benefit Corrections	(1,179,367)	(120,143)	(120,467)	15 years
01/01/2005	Actuarial Loss / (Gain)	1,746,237	177,891	178,369	15 years
01/01/2006	Actuarial Loss / (Gain)	2,325,069	228,268	228,918	16 years
01/01/2007	Plan Amendment	45,062	4,279	4,292	17 years
01/01/2007	Actuarial Loss / (Gain)	1,614,139	153,271	153,730	17 years
01/01/2008	Actuarial Loss / (Gain)	(366,152)	(33,732)	(33,838)	18 years
01/01/2009	Actuarial Loss / (Gain)	9,763,295	875,055	877,933	19 years
01/01/2009	Assumption Change	1,794,396	160,826	161,355	19 years
01/01/2009	Plan Amendment	33,704	3,021	3,031	19 years
01/01/2010	Actuarial Loss / (Gain)	(2,140,108)	(187,064)	(187,704)	20 years
01/01/2011	Actuarial Loss / (Gain)	2,199,376	187,892	188,561	21 years
01/01/2012	Actuarial Loss / (Gain)	2,614,262	218,703	219,509	22 years
01/01/2013	Actuarial Loss / (Gain)	3,247,318	266,490	267,506	23 years
01/01/2014	Actuarial Loss / (Gain)	(3,372,088)	(271,884)	(272,954)	24 years
01/01/2014	Assumption Change	3,855,043	310,824	312,047	24 years
01/01/2015	Actuarial Loss / (Gain)	(2,415,564)	(191,623)	(192,399)	25 years
01/01/2016	Actuarial Loss / (Gain)	289,724	22,642	22,736	26 years
01/01/2016	Assumption Change	2,745,108	214,529	215,422	26 years
01/01/2017	Actuarial Loss / (Gain)	(1,117,741)	(86,153)	(86,521)	27 years
01/01/2017	Assumption Change	110,783	8,539	8,575	27 years
01/01/2017	Plan Amendment	129,816	10,006	10,049	27 years
01/01/2018	Actuarial Loss / (Gain)	(613,044)	(46,653)	(46,858)	28 years
01/01/2019	Combined Bases *	1,798,452	256,830	257,255	9 years
01/01/2019	Actuarial Loss / (Gain)	2,071,661	155,809	156,507	29 years
01/01/2019	Assumption Change	(216,249)	(16,264)	(16,337)	29 years
01/01/2020	Actuarial Loss / (Gain)	458,060	34,077	34,233	30 years
01/01/2020	Assumption Change	(2,331,163)	(173,425)	N/A	30 years
	TOTAL	\$ 25,549,738	\$ 2,426,425	\$ 2,608,020	

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

This actuarial valuation and/or cost determination was prepared and completed by us or under our direct supervision, and we acknowledge responsibility for the results. To the best of our knowledge, the results are complete and accurate, and in our 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.

Michelle Jones

Shelly L. Jones, A.S.A.
Enrollment Number: 20-08646

Jennifer Borregard

Jennifer M. Borregard, E.A.
Enrollment Number: 20-07624

Dated: April 10, 2020



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.

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.

Vested Benefit Security Ratio. The ratio of the Market Value of Assets to the Actuarial Present Value of Vested Accrued Benefits.