

Regional Transportation Authority Pension Plan

Actuarial Valuation Report as of January 1, 2019



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July 18, 2019

Board of Trustees
Regional Transportation Authority Pension Plan
Chicago, Illinois

Dear Trustees:

We are pleased to provide our formal annual Actuarial Valuation Report as of January 1, 2019, for the Regional Transportation Authority Pension Plan ("RTA Pension Plan"). The actuarial valuation was performed at the request of the Regional Transportation Authority ("RTA") and is intended for use by the RTA and those designated by the RTA. This report may be provided to parties other than the RTA only in its entirety and only with the permission of the RTA. GRS is not responsible for unauthorized use of this report.

The purposes of the actuarial valuation are to measure the Plan's funding progress as of the actuarial valuation date, to determine the recommended annual contribution of the RTA Pension Plan for the Plan Year commencing January 1, 2019 and ending on December 31, 2019 and to analyze plan experience during the prior year. This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results associated with the benefits described in this report, for purposes other than those identified above, may be significantly different.

The contribution amount in this report is determined using the actuarial assumptions and methods disclosed in Section C of this report. This report includes risk metrics beginning on page A-5 but does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

The recommended annual contribution shown on page A-7 is best viewed as the minimum contribution that complies with the Board's funding policy. Users of this report should be aware that contributions made at that rate do not guarantee benefit security. Until the plan is fully funded, we encourage the plan sponsor to contribute in excess of the recommended annual contribution to the extent possible.

This actuarial valuation assumes the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

The findings in this report are based on data and other information through January 1, 2019. The actuarial valuation was based upon information furnished by the Regional Transportation Authority agencies and the Plan Administrator, Reed-Ramsey, concerning benefits provided by the Regional Transportation Authority Pension Plan, financial transactions, Plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency,

but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the Regional Transportation Authority agencies or Reed-Ramsey. As part of the actuarial valuation process, GRS updated service amounts for active members in accordance with the rules established with Reed-Ramsey.

This report was prepared using actuarial assumptions adopted by the Retirement Committee. All actuarial assumptions used in this report are reasonable for the purposes of this valuation. Members who meet eligibility conditions may receive a lump sum benefit from the RTA Pension Plan in lieu of an annuity. The assumption basis used by the Plan Administrator to calculate lump sum payments is based on segment interest rates prescribed by the IRS and changes annually. Beginning with the 2013 actuarial valuation, the assumption basis used in the actuarial valuation to project future lump sum payments is updated annually to reflect the actual segment interest rates and mortality table being used. The other actuarial assumptions and the actuarial cost method used in this actuarial valuation are the same as those used in the prior actuarial valuation and are set forth in Section C: Actuarial Valuation Procedures.

Section B outlines the principal benefit provisions of the Plan. There have been no changes to the Plan provisions since the January 1, 2018 actuarial valuation.

To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the Regional Transportation Authority Pension Plan as of the actuarial valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

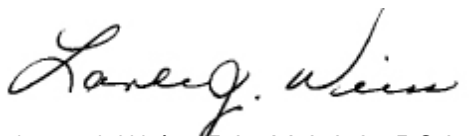
Lance J. Weiss and Amy Williams are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The signing actuaries are independent of the Plan sponsor.

We will be pleased to review this report with you at your convenience.

Respectfully submitted,

Gabriel, Roeder, Smith & Company



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SECTION A

ACTUARIAL VALUATION RESULTS

Comments on the Actuarial Valuation

Purpose and Data

At your request we have performed the actuarial valuation of the Regional Transportation Authority Pension Plan as of January 1, 2019.

The primary purposes of this actuarial valuation are as follows:

- To determine the funding status of the RTA Pension Plan as of the actuarial valuation date; and
- To determine the recommended contribution for the current fiscal year.

Accounting information, as required under GASB Statement Number 67 (pension plan accounting) and GASB Statement Number 68 (employer accounting for pension plans), is shown in a separate report. GASB Statement Numbers 67 and 68 were first effective with fiscal year ending December 31, 2014, and December 31, 2015, respectively.

We received the data from the Regional Transportation Authority agencies and Reed-Ramsey. We performed certain checks for reasonableness and found most of the data to be complete and reliable for actuarial valuation purposes. As part of the actuarial valuation process, GRS updated service amounts for active members in accordance with the rules established with Reed-Ramsey.

A total of 1,220 active members were included in the actuarial valuation as of January 1, 2019. Between the 2018 and 2019 actuarial valuations, the number of active employees increased by 14 members, or 1.2 percent. The average annual actuarial valuation pay increased by 2.0 percent, from \$82,963 to \$84,653 between the 2018 and 2019 actuarial valuations. The number of benefit recipients increased from 787 to 833, or 5.8 percent, since the last actuarial valuation. The average monthly benefit increased by 1.0 percent, from \$1,601 to \$1,617.

Section B outlines the principal benefit provisions of the Plan. There have been no changes to the Plan provisions since the January 1, 2018 actuarial valuation.

Actuarial Assumption and Method Changes

The actuarial assumptions and the actuarial cost method remain unchanged from the prior actuarial valuation as of January 1, 2018, except for the conversion factors used to calculate lump sum benefits. Members who meet eligibility conditions may receive a lump sum benefit from the RTA Pension Plan in lieu of an annuity. The assumption basis used by the Plan Administrator to calculate lump sum payments is based on segment interest rates and mortality rates prescribed by the IRS and changes annually. Beginning with the 2013 actuarial valuation, the assumption basis used in the actuarial valuation to project future lump sum payments is updated annually to reflect the mortality rates and actual segment interest rates being used.

The Board adopted changes in the actuarial assumptions first effective with the actuarial valuation as of January 1, 2015, based on an experience study performed for the period January 1, 2008 to January 1, 2013. An experience study was performed covering the period January 1, 2013 through January 1, 2018, and the recommendations are currently being considered by the Retirement Committee. The

Comments on the Actuarial Valuation (Continued)

recommended assumption changes will increase the actuarial accrued liability, unfunded liability and contribution requirement and decrease the funded ratio.

Gain/Loss Analysis

During the plan year ending December 31, 2018, the unfunded actuarial accrued liability ("UAAL") increased from \$30,827,709 as of January 1, 2018, to \$38,603,060 as of January 1, 2019, which is an increase of \$7,775,351. The key factors contributing to the change in UAAL are summarized in the following table:

Source	Change in UAAL
UAAL at January 1, 2018	\$ 30,827,709
Normal Cost plus Interest on UAAL and Normal Cost	11,209,769
Recommended Contribution for 2018	(11,592,096)
Change Due to Additional Contribution in 2018	(1,300,000)
Change Due to Updated Assumptions and Methods ¹	(1,579,446)
Change Due to Changes in Benefit Provisions	0
(Gain) Loss on Assets ²	9,224,488
Salary and Demographic (Gain) Loss	1,812,636
UAAL at January 1, 2019	\$ 38,603,060

¹ Includes impact of updating lump sum conversion factors.

² Includes gains and losses on an actuarial value of assets basis.

Plan Asset Return

On a market value basis, the RTA Pension Plan assets earned an investment return of approximately -6.3 percent. Partial recognition of the fiscal year end 2014, 2015 and 2018 investment losses, which was partially offset by partial recognition of the investment gains during fiscal years ending 2016 and 2017, resulted in an estimated net asset rate of return of 4.2 percent on an actuarial basis, which compares to the assumed rate of return of 7.50 percent for fiscal year 2018.

Statutory and Recommended Employer Contributions

The minimum employer contribution is defined in Chapter 40, Section 5/22-103 of the Illinois Compiled statutes. This section states:

1. An "under-funded pension Plan" is defined as a pension Plan which has a funded ratio of less than 90 percent at the last actuarial valuation.
2. An "under-funded pension Plan" shall contribute, in addition to amounts otherwise required, amounts sufficient to bring the funded ratio up to 90 percent over a maximum period of 50 years from January 1, 2009. (i.e., 90 percent funded by the end of fiscal year 2059).

Comments on the Actuarial Valuation (Continued)

3. The additional contributions shall be in substantially equal annual amounts over the funding period.

The pension Plan document defines the employers' funding policy as contributions at least equal to an amount determined advisable by the Plan's actuary to maintain the Plan on a sound actuarial basis.

The Plan was not considered an "under-funded pension Plan" at the last actuarial valuation because the funded ratio was greater than 90 percent. However, the funded ratio is lower than 90 percent based on the current actuarial valuation. Beginning with the actuarial valuation as of January 1, 2015, the Board adopted a 30-year level-dollar closed-period amortization policy, meaning the amortization period began at 30 years at the actuarial valuation as of January 1, 2015, and decreases by one year each year thereafter. This contribution policy targets a funded ratio of 100 percent at the end of 30 years (i.e., 100 percent funded by the end of fiscal year 2045) and therefore exceeds the minimum employer contribution as defined in the statutes.

The recommended contribution for fiscal year 2019 of \$12,584,605, based on a 30-year closed-period, level-dollar amortization policy effective January 1, 2015, increased by \$992,509, or 8.56 percent, from the recommended contribution of \$11,592,096 for fiscal year 2018. The increase is due to the increase in the normal cost contribution (including the expected increase of 3.25 percent), the asset loss on an actuarial value of assets basis during 2018 and unfavorable plan experience during the year. The recommended contribution for fiscal year 2019 of \$12,584,605 is expected to be contributed at the end of fiscal year 2019.

The actuarial value of assets is currently 108 percent of the market value of assets. There is \$22,067,734 in net asset losses currently being deferred that will be phased into the actuarial value of assets over the next four years. This will put upward pressure on recommended employer unfunded liability contribution, absent any future offsetting actuarial gains.

Funded Ratio

The funded ratio measures the portion of the actuarial accrued liability (calculated based on the actuarial assumptions disclosed in this report) that is currently funded. The funded ratio is 88.3 percent based on actuarial value of assets and 81.7 percent based on market value of assets. The funded ratio is not appropriate for assessing the sufficiency of plan assets for any other purpose.

GASB 67/68

A separate actuarial valuation report with calculations completed in accordance with the provisions of GASB Statement Nos. 67 and 68 has been issued.

Comments on the Actuarial Valuation (Continued)

Other Observations

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status

Given the Plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the Plan earning 7.50 percent on the actuarial value of assets), it is expected that:

1. The normal cost is projected to increase by 3.25% each year and the amortization payment is projected to remain level until the end of the amortization period. Gains and losses, including recognition of deferred gains and losses in the actuarial value of assets, will decrease or increase the contribution requirement;
2. The unfunded actuarial accrued liabilities will be fully amortized after 30 years from the fiscal year ending December 31, 2015 (December 31, 2045), which corresponds to the beginning of the closed amortization period established in the actuarial valuation as of January 1, 2015; and
3. The funded status of the plan will increase gradually towards a 100 percent funded ratio.

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regard to any funded status measurements presented in this report:

1. The measurement is inappropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations, for example: transferring the liability to an unrelated third party in a free market type transaction.
2. The measurement is dependent upon the actuarial cost method which, in combination with the Plan's amortization policy, affects the timing and amounts of future contributions. The amounts of future contributions will most certainly differ from those assumed in this report due to future actual experience differing from assumed experience based upon the actuarial assumptions. A funded status measurement in this report of 100 percent is not synonymous with no required future contributions. If the funded status were 100 percent, the Plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).
3. The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets.

Risk Measures

RISKS ASSOCIATED WITH THE 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: plan 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 Plan's funded status); and changes in plan 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 plan'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 plan'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 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; and
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 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 cost of the plan can be expected to increase (or decrease). Likewise if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

Risk Measures (Continued)

PLAN MATURITY MEASURES

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

	2018	2019
Ratio of the Market Value of Assets to Total Payroll	2.97	2.62
Ratio of Actuarial Accrued Liability to Payroll	3.20	3.20
Ratio of Actives to Retirees and Beneficiaries	1.53	1.46
Ratio of Net Cash Flow to Market Value of Assets	-1.92%	-3.28%

RATIO OF MARKET VALUE OF ASSETS TO PAYROLL

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5 percent different than assumed would equal 10 percent of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor 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 contributions for a fully funded plan. A funding policy that targets a funded ratio of 100 percent 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 percent other than assumed would equal 5 percent 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 plan sponsor contributions) as a percentage of payroll.

RATIO OF ACTIVES TO RETIREES AND BENEFICIARIES

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan 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 plan or a need for additional contributions.

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 of Actuarial Valuation Results

		January 1, 2018	January 1, 2019
		Results	Results
Membership			
Data	Active Members	1,206	1,220
	Vested Terminated	397	406
	Deferred Beneficiaries	5	4
	Transfers	75	78
	Retirees	670	715
	Beneficiaries	88	86
	QDRO (Alternate Payee)	29	32
	TOTAL	2,470	2,541
Plan			
Liabilities	Actuarial Accrued Liability:		
	Active Members	\$151,971,730	\$ 153,802,772
	Retirees and Beneficiaries	150,032,255	158,907,441
	Deferred Vested	18,191,614	18,071,603
	TOTAL	\$320,195,599	\$ 330,781,816
	Actuarial Value of Assets at Valuation Date	\$289,367,890	\$ 292,178,756
	Unfunded (Overfunded) Actuarial Accrued Liability	\$30,827,709	\$ 38,603,060
	Funded Position of Plan's Actuarial Accrued Liability ¹	90.4 %	88.3 %
Recommended			
Annual Contribution Requirements		Fiscal Year	Fiscal Year
		2018	2019
	Annual Normal Cost as of Valuation Date	\$7,672,619	\$ 7,897,855
	Normal Cost Expense Load	604,303	630,749
	Interest on Normal Cost to End of Year ²	620,769	639,645
	30-Year Level Dollar Amortization of Unfunded Actuarial Accrued Liability at End of Year ³	2,694,405	3,416,356
	Total Recommended Annual Contribution for the Current Plan Year	\$11,592,096	\$ 12,584,605
	Total Covered Payroll	\$100,053,769	\$ 103,276,538
	Recommended Annual Contribution (As a percentage of pay)	11.586%	12.185%

¹Equals the ratio of the actuarial value of assets to the total actuarial accrued liability.

²Assumes the contribution will be made at the end of the current fiscal year.

³27-year period as of January 1, 2018, and 26-year period as of January 1, 2019.

Summary of Actuarial Valuation Results (Continued)

***Allocation of
Recommended FY2019
Annual Contribution
Requirements***

	2018 Pensionable Payroll¹	Allocation Percent	Allocated Recommended Annual Contribution Requirements for FY2019
Metra	\$ 49,467,801	54.7%	\$ 6,883,779
Pace	32,513,288	36.0%	4,530,458
RTA	8,405,315	9.3%	1,170,368
Total	\$ 90,386,404	100.0%	\$ 12,584,605

***Allocation of
Recommended FY2018
Annual Contribution
Requirements***

	2017 Pensionable Payroll²	Allocation Percent	Allocated Recommended Annual Contribution Requirements for FY2018
Metra	\$ 46,791,859	54.8%	\$ 6,352,468
Pace	30,763,269	36.0%	4,173,155
RTA	7,874,846	9.2%	1,066,473
Total	\$ 85,429,974	100.0%	\$ 11,592,096

¹2018 pensionable payroll for members active during both 2018 and 2019.

²2017 pensionable payroll for members active during both 2017 and 2018.

Derivation of Experience (Gain)/Loss Year Ended January 1, 2019

Actual experience will never (except by coincidence) coincide exactly with assumed experience. It is expected that gains and losses will cancel each other over a period of years, but year-to-year fluctuations are not uncommon. Detail on the derivation of the experience (gain) loss, along with a year-by-year comparative schedule, is shown below and on the next page.

1. Unfunded Actuarial Accrued Liability at 01/01/2018	\$ 30,827,709
2. Normal Cost at 01/01/2018	8,276,922
3. Interest on (1) and (2) to 01/01/2019 (at 7.50% per annum)	2,932,847
4. Recommended Contribution for 2018 Plan Year	<u>11,592,096</u>
5. Expected Unfunded Actuarial Accrued Liability at 01/01/2019 [(1) + (2) + (3) - (4)]	\$ 30,445,382
6. Effect of Additional Contributions Made in FY 2018	\$ (1,300,000)
7. Effect of Updating Lump Sum Conversion Factors	\$ (1,579,446)
8. Effect of Plan Provision Changes	\$ -
9. Expected Unfunded Actuarial Accrued Liability at 01/01/2019 After Additional Contributions and Assumption and Plan Provision Changes [(5) + (6) + (7) + (8)]	\$ 27,565,936
10. Actual Unfunded Actuarial Accrued Liability at 01/01/2019	\$ 38,603,060
11. (Gain)/Loss at 01/01/2019 [(10) - (9)]	\$ 11,037,124

Derivation of Experience (Gain) Loss Year Ended January 1, 2019 (Continued)

Year Ending December 31	Experience (Gain) Loss as % of Beginning of Year Accrued Liability	Estimated Rate of Return on Market Value of Assets	Estimated Rate of Return on Actuarial Value of Assets
2009	N/A	24.40 %	12.68 %
2010 ¹	N/A	11.14 %	5.06 %
2011 ²	1.67 %	(0.31)%	3.01 %
2012 ³	3.53 %	12.26 %	4.16 %
2013 ³	(1.38)%	15.05 %	11.15 %
2014 ³	0.93 %	1.92 %	8.08 %
2015 ³	3.91 %	(4.84)%	4.58 %
2016 ³	2.25 %	8.44 %	5.81 %
2017 ³	1.36 %	16.17 %	7.22 %
2018 ³	3.45 %	(6.27)%	4.19 %
5-Year Average	2.37 %	2.75 %	5.96 %
10-Year Average	N/A	7.38 %	6.55 %

¹Amounts prior to 2011 from prior actuary's valuation report as of January 1, 2011.

²2011 experience loss of 1.67% is net of change due to accrual accounting of market value of assets.

³Experience gains and losses are net of changes due to additional contributions and changes in assumptions and plan provisions.

Analysis of Actuarial Gains and Losses

Attributable to:	(Gains) Losses during the Year				
	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Assets ¹	\$ (564,991)	\$ 5,511,049	\$ 4,371,403	\$ 757,840	\$ 9,224,488
New Actives	685,031	552,800	909,383	765,861	598,278
Salary Changes	2,837,717	2,506,255	428,349	617,076	232,997
Active Member Data Changes ²	Not Available	Not Available	1,200,566	585,850	(32,277)
New Retirees from Deferred Vested	Not Available	Not Available	212,766	295,000	(96,795)
Termination Experience	Not Available	Not Available	Not Available	656,625	89,961
Other Demographic Experience ³	(790,381)	1,994,506	(676,293)	430,524	1,020,472
Composite Actuarial (Gain) Loss	\$ 2,167,376	\$ 10,564,610	\$ 6,446,174	\$ 4,108,776	\$ 11,037,124
Additional (Decreases) Increases in Unfunded Liability					
Expected Change in Unfunded Liability	\$ (493,771)	\$ (717,428)	\$ (217,998)	\$ (299,752)	\$ (382,327)
Additional Contributions	-	(63,496,198)	(1,300,000)	(1,300,000)	(1,300,000)
Changes in Actuarial Assumptions ⁴	19,073,525	(355,162)	588,429	2,036,615	(1,579,446)
Changes in Plan Provisions	-	588,069	-	-	-
Total Additional Changes	\$ 18,579,754	\$ (63,980,719)	\$ (929,569)	\$ 436,863	\$ (3,261,773)
Total Change in Unfunded Liability	\$ 20,747,130	\$ (53,416,109)	\$ 5,516,605	\$ 4,545,639	\$ 7,775,351

¹ Includes gains and losses on an actuarial value of assets basis.

² Includes gains and losses based on service changes other than one year for continuing actives.

³ Includes net impact of deviations from assumptions due to death, termination (through FY2016), transfer, retirement, disability, lump sum conversions and miscellaneous data changes.

⁴ Includes annual impact of updating lump sum conversion factors.

Statement of Plan Net Position

As of December 31, 2017 and December 31, 2018

	<u>December 31, 2017</u>	<u>December 31, 2018</u>
Net Plan Position Available for Benefits - Beginning of Year	\$ 261,710,577	\$ 296,896,397
Additions		
Investment Gain		
Net (depreciation) appreciation in fair value of investments	37,010,070	(22,217,713)
Interest and dividends	4,203,628	4,828,282
Total investment (loss) return	41,213,698	(17,389,431)
Less investment expenses		
Investment managers	320,291	524,936
Trust fees	4,400	4,950
Investment advisor	120,000	95,000
Total investment expenses	444,691	624,886
Net investment loss (gain)	40,769,007	(18,014,317)
Contributions		
METRA pension contributions	\$ 5,745,866	\$ 6,352,468
PACE pension contributions	3,788,251	4,173,155
RTA pension contributions	2,347,589	2,366,473
Total contributions	11,881,706	12,892,096
Total Additions	\$ 52,650,713	\$ (5,122,221)
Deductions		
Benefit Payments	\$ 16,994,447	\$ 21,190,479
Administrative Expenses	470,446	472,675
Total Deductions	\$ 17,464,893	\$ 21,663,154
Net Increase in Net Assets Available for Benefits	\$ 35,185,820	\$ (26,785,375)
Net Plan Position for Benefits - End of Year	\$ 296,896,397	\$ 270,111,022

Assets are based on accrual accounting and consistent with asset values shown in the Plan's financial statement.

Statement of Changes in Net Plan Position

As of December 31, 2017 and December 31, 2018

	Fiscal Year Ending	
	December 31, 2017	December 31, 2018
Assets:		
Cash and Cash Equivalents	\$ 3,052,356	\$ 5,793,656
Investments, at Fair Value		
Corporate Fixed Income Mutual Fund	63,327,228	63,133,674
Collective Equity Funds	146,156,259	94,385,005
Common Stocks	36,648,156	31,037,557
Venture Capital	3,668,695	
Balanced Funds	42,925,765	
Alternatives		13,574,259
Commingled funds		62,467,671
Total Investments	292,726,103	264,598,166
Receivables:		
Accrued Interest	\$ 1,836	\$ 4,920
Accrued Dividends	29,977	39,646
Pending Investment Sales	1,325,790	86,966
Total Receivables	1,357,603	131,532
Total Assets	\$ 297,136,062	\$ 270,523,354
Liabilities:		
Other Liabilities	\$ 6,300	\$ -
Accrued Expense	151,222	214,933
Pending Investment Purchases	82,143	197,399
Total Liabilities	\$ 239,665	\$ 412,332
Plan Net Position - Available for Benefits	\$ 296,896,397	\$ 270,111,022

Assets are based on accrual accounting and consistent with asset values shown in the Plan's financial statement.

Development of Actuarial Value of Assets

	2017	2018	2019	2020	2021	2022
Beginning of Year:						
(1) Market Value of Assets	\$261,710,577	\$296,896,397				
(2) Actuarial Value of Assets	275,792,027	289,367,890				
End of Year:						
(3) Market Value of Assets	296,896,397	270,111,022				
(4a) Contributions	11,881,706	12,892,096				
(4b) Net Disbursements	17,584,893	21,758,154				
(5) Total Investment Income						
= (3) - (1) - (4a) + (4b)	40,889,007	(17,919,317)				
(6) Projected Rate of Return	7.50%	7.50%				
(7) Projected Investment Income						
= (1) x (6) - [(1 + (6)) ⁵ - 1] x (4b)	18,980,781	21,466,050				
(8) Asset Adjustment	0	0				
(9) Investment Income in Excess of Projected Income	21,908,226	(39,385,367)				
(10) Excess Investment Income Recognized						
This Year (5-year recognition)						
(10a) From This Year	4,381,645	(7,877,073)				
(10b) From One Year Ago	448,655	4,381,645	\$ (7,877,073)			
(10c) From Two Years Ago	(4,601,687)	448,655	4,381,645	\$ (7,877,073)		
(10d) From Three Years Ago	(2,140,668)	(4,601,687)	448,655	4,381,645	\$ (7,877,073)	
(10e) From Four Years Ago	2,210,324	(2,140,666)	(4,601,687)	448,656	4,381,646	\$ (7,877,075)
(10f) Total Recognized Investment Gain/(Loss)	298,269	(9,789,126)	(7,648,460)	(3,046,772)	(3,495,427)	(7,877,075)
(11) Change in Actuarial Value of Assets						
= (4a) - (4b) + (7) + (8) + (10f)	13,575,863	2,810,866				
End of Year:						
(3) Market Value of Assets	296,896,397	270,111,022				
(12) Preliminary Actuarial Value of Assets = (2) + (11)	289,367,890	292,178,756				
(12a) Upper Corridor Limit 120% x (3)	356,275,676	324,133,226				
(12b) Lower Corridor Limit 80% x (3)	237,517,118	216,088,818				
(13) Adjustment to Remain within 20% Corridor	0	0				
(14) Final Actuarial Value of Assets as of 12/31	289,367,890	292,178,756				
(15) Difference Between Market & Actuarial Values	7,528,507	(22,067,734)				
(16) Market Value Rate of Return	16.17%	(6.27)%				
(17) Actuarial Value Rate of Return	7.22%	4.19%				
(18) Ratio of Actuarial Value to Market Value	97%	108%				

Disbursements include investment advisor fees.

SECTION B

BENEFIT PROVISIONS AND ACTUARIAL VALUATION DATA

Brief Summary of Plan Provisions as of January 1, 2019

Following is a summary of the major Plan provisions used in the actuarial valuation. The Regional Transportation Authority is solely responsible for the validity, accuracy and comprehensiveness of this information. If any of the Plan provisions shown below are not accurate and complete, the actuarial valuation results may differ significantly from those shown in this report and may require a revision of this report. Moreover, these Plan provisions may be susceptible to different interpretations, each of which could be reasonable, and the different interpretations could lead to different actuarial valuation results.

Effective Date and Plan Year

The RTA Pension Plan became effective July 1, 1976, and was amended and restated effective June 1, 1984, January 1, 1987, and January 1, 1996. The Plan year is the calendar year.

Most Recent Amendment

The RTA Pension Plan was most recently amended and restated effective July 1, 2016.

Plan Year

The Plan year prior to July 1, 1984, was the twelve-month period commencing each July 1. There was a Short Plan Year from July 1, 1984, to December 31, 1984. Thereafter, the Plan year is the calendar year.

Employees Eligible to Participate

Each employee on and after July 1, 1976, who commences employment with the Authority or an Affiliate Employer becomes a participant as of the later of July 1, 1976, and the first day of the month coincident with or next following the date of his commencement of employment with the Authority. Effective January 1, 1987, directors may participate if an irrevocable election is filed with the Committee. Special provisions apply to certain PACE employees who entered the Plan in 1985 and certain METRA employees who entered the Plan in 1987.

Employee Contributions

Employee contributions are neither required nor allowed by the RTA Pension Plan.

Normal Retirement Date

First day of the calendar month coincident with or next following a participant's 65th birthday.

Early Retirement Date

An employee may retire early if he has attained age 55 and has completed 10 years of Vesting Service.

Disability Retirement Date

A participant who becomes disabled may commence receiving a disability income on the later of (1) his Normal Retirement date and (2) the cessation of long-term disability benefits under the RTA Pension Plan.

Brief Summary of Plan Provisions as of January 1, 2019 (Continued)

Compensation

The amounts actually paid as base salary to salaried employees and the amounts actually paid as regular, hourly wages (excluding overtime or shift differential pay) to non-salaried employees, including, at the time of deferral, amount deferred at the election of a Participant while an Employee under a cafeteria Plan, 401(k) qualified cash or deferred arrangement or eligible deferred compensation Plan maintained by an Employer which are excludable from such Participant's taxable income under Section 125, 132(f), 402 or 457 of the Code.

Average Annual Compensation

The average of the annual compensation received by a Participant in the three completed Plan years, whether consecutive or not, of his Continuous Service in which he receives his highest rates of compensation.

Service Considered

"Continuous Service," with respect to the period prior to July 1, 1976, is the total number of months of his uninterrupted service with the Authority. If an employee is not employed by the Authority during all months in a plan year after July 1, 1976, and does not complete 1,000 hours of service, he is credited with one month of Continuous Service for each 83 hours of service completed during that Plan Year. If he completes 1,000 hours of service during any Plan year after July 1, 1976, he will be credited with 12 months of service for that year, with the exception of the Short Plan Year. During the Short Plan Year commencing July 1, 1984, and ending December 31, 1984, an employee is credited with one month of Continuous Service for each month in which he has 83 hours of service.

For purposes of determining Continuous Service for vesting and eligibility for early retirement, service credited for the Short Plan Year is 12 months.

"Credited Service" is the sum of a participant's "Continuous Service" and any "Prior Service Credit" to which he is entitled. This latter term applies to employees who commenced employment prior to June 2, 1984, and also were employed on a full time basis prior to their current employment with the Authority by either 1. or 2. as follows:

1. The United States, any state, or any political subdivision of any State, or any agency created under an interstate contract approved by the Congress of the United States.

Brief Summary of Plan Provisions as of January 1, 2019 (Continued)

2. Any entity which, at any time during such Employee's employment with such entity, provided public transportation or freight services by bus or rail in the United States.

The Prior Service Credit is then equal to 4% of the service under the prior Plan for each month of continuous service with the Authority which is in excess of 23 months, subject to a maximum credit of 100% of such prior service. Thus, the full credit is granted after 48 months (four years) of employment with the Authority.

All Prior Service Credits were fully accrued at the actuarial valuation date.

Rule of 85

Unreduced early retirement is available to participants between ages 55 and 65 if the Rule of 85 is satisfied. The Rule of 85 is satisfied if a participant's vesting service plus age at retirement is greater than or equal to 85 years.

Normal Retirement Benefit

A participant who retires at or after his Normal Retirement Date will receive an annual retirement income equal to the product of 1. And 2. below:

1. Final Average Annual Compensation
2. 1.75% times Credited Service (max 70%)

Thus, the maximum Credited Service is 40 years.

Early Retirement Benefit

A participant who retires at an Early Retirement Date will receive at his Normal Retirement Date an annual retirement income equal to the benefit described in the immediately preceding section. In lieu of the above benefit, a Participant may elect to receive a reduced amount of retirement income commencing on the first day of any month between his Early and Normal Retirement Dates. The reduction will be 2.0% per year for each year that his payment commencement date precedes his Normal Retirement Date. Unreduced early retirement is available to participants between age 55 and 65 if the Rule of 85 is satisfied.

Brief Summary of Plan Provisions as of January 1, 2019 (Continued)

Deferred Vested Benefit

A participant who terminates his employment after completion of five years of Credited Service will be entitled to his accrued benefit commencing at his Normal Retirement Date. A participant who terminates his employment after completion of 10 years of Credited Service can elect reduced early retirement at age 55.

Disability Benefit

A disabled participant who is eligible to commence normal retirement benefits is entitled to an amount determined as if Continuous Service continued until the Normal Retirement Date. Compensation is assumed to continue unchanged from the last calendar year worked.

Death Benefit (with Surviving Spouse)

If an active or inactive participant dies prior to his Retirement Date after completion of at least five years of service and is not eligible for the Rule of 85 and is survived by a spouse to whom he has been married for at least one year, the surviving spouse will receive a monthly benefit equal to 50% of the amount of pension which would have been payable to the participant if his Retirement Date had occurred on his date of death and he had elected a Joint and Survivor Pension.

1. If the participant died after completion of 10 years of service
 - a) If the employee was age 55 or older at death, the benefit will commence to the spouse immediately.
 - b) If the employee was less than age 55 at death, the benefit will commence on the date that employee would have attained age 55.
2. If the participant died after completion of 5 years of service but less than 10 years
 - a) The benefit will commence on the date the employee would have been eligible for Normal Retirement.

If an active participant dies after his Normal Retirement Date or is Eligible for the Rule of 85 at the time of death, the Eligible Spouse will receive a monthly benefit payable immediately based on a 100% Joint and Survivor Pension. In lieu of this survivor benefit, the surviving spouse may elect instead to receive a lump sum distribution equal to the lump sum amount the participant would have been entitled to upon the date of his death.

Brief Summary of Plan Provisions as of January 1, 2019 (Continued)

Death Benefit

(without Surviving Spouse)

If an active or inactive participant dies prior to his Retirement Date and is not survived by a spouse, dependent children under age 26 will receive monthly benefits payable until age 26 that are actuarially equivalent to the Single Life Annuity to which the participant would otherwise be entitled.

Normal Form and Optional Forms of Retirement Benefits

The normal annuity form for single participant is a single life annuity. The normal annuity form for married participants is a reduced 50% Joint and Survivor annuity. Other available options are a 10-year certain annuity, a joint and survivor annuity with or without a pop-up or any other option offered by the Committee. The lump-sum option is available to participants who retire on or after their Normal Retirement Date and who have earned service credit prior to January 1, 2011.

Actuarial Equivalence

Optional payments forms are converted from a single life annuity according to actuarial factors based on the following:

Mortality

1. Participants – the 94 GAR Blended mortality table (no rating of ages)
2. Beneficiaries – the 94 GAR Blended mortality table (age rated down two years)
3. Lump-sum payment – applicable mortality table under the Pension Protection Act

Interest

1. Optional annuity forms – 6.0%
2. Lump-sum payments – applicable November segmented interest rates under the Pension Protection Act with five-year phase-in.

In no event will the lump sum paid be less than the lump sum amount determined using the interest rate and mortality assumptions for optional annuity forms.

Prior Benefit Offset

Amounts payable from the RTA Pension Plan are offset by the percent of the Prior Service Credit attributed to the benefit payable under the current Plan multiplied by the sum of all prior benefits.

Brief Summary of Plan Provisions as of January 1, 2019 (Continued)

Changes Since Prior Actuarial Valuation

There have been no changes in Plan provisions since the prior actuarial valuation.

Summary of Changes in Participant Status January 1, 2019

	Actives ¹	Deferred Vested ²	Deferred Beneficiaries ²	Transfers ²	Retirees ³	Beneficiaries	QDRO (Alternate Payees)	Total
METRA Participants at 01/01/2018	590	146	2	67	357	47	20	1,229
PACE Participants at 01/01/2018	506	174	2	6	210	23	7	928
RTA Participants at 01/01/2018	<u>110</u>	<u>77</u>	<u>1</u>	<u>2</u>	<u>103</u>	<u>18</u>	<u>2</u>	<u>313</u>
Total Participants at 01/01/2018	1,206	397	5	75	670	88	29	2,470
New Entrants and Rehires	123			1				124
Non-Vested Terminations	(34)							(34)
Vested Terminations	(30)	30						
Transfers	(8)			8				
Retirement	(28)	(20)		(6)	54			
Lump Sum Retirement	(9)		(1)		(1)			(11)
Death with Beneficiary		(2)			(2)	4		
Death without Beneficiary					(6)	(6)		(12)
Benefit Terminations								
Adjustments		1					3	4
METRA Participants at 01/01/2019	606	151	1	69	383	46	23	1,279
PACE Participants at 01/01/2019	503	177	2	7	225	24	7	945
RTA Participants at 01/01/2019	<u>111</u>	<u>78</u>	<u>1</u>	<u>2</u>	<u>107</u>	<u>16</u>	<u>2</u>	<u>317</u>
Participants at 01/01/2019	1,220	406	4	78	715	86	32	2,541

¹ Includes 8 disabled members as of January 1, 2018, and includes 7 disabled members as of January 1, 2019.

² Valued as deferred vested members.

³ Includes 1 participant as of January 1, 2018 and 0 participants as of January 1, 2019 receiving lump sum payments in the upcoming year.

Active Members as of January 1, 2019

By Attained Age and Years of Benefit Service

Attained Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35 and Over	Totals	Valuation Payroll
Under 25	18	1	-	-	-	-	-	-	19	\$ 1,021,947
25-29	62	9	-	-	-	-	-	-	71	4,180,194
30-34	69	24	15	-	-	-	-	-	108	7,768,808
35-39	74	33	22	6	-	-	-	-	135	11,141,295
40-44	52	32	15	12	3	-	-	-	114	9,252,396
45-49	55	30	34	15	11	2	-	-	147	12,988,313
50-54	71	31	35	29	18	11	2	-	197	18,243,798
55-59	51	27	32	21	22	17	12	2	184	16,774,312
60-64	42	37	23	19	14	12	14	7	168	15,879,423
65-69	9	7	8	13	4	7	7	3	58	5,148,540
70-74	-	-	7	2	4	1	-	-	14	717,721
75 and Over	-	1	-	1	2	1	-	-	5	159,791
Total	503	232	191	118	78	51	35	12	1,220	\$ 103,276,538

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

	<u>Current Valuation</u>	<u>Previous Valuation</u>
Average Age:	48.8 years	48.7 years
Average Benefit Service:	10.6 years	10.8 years
Average Annual Pay:	\$84,653	\$82,963
Metra:	\$95,004	\$94,330
Pace:	\$72,513	\$69,744
RTA:	\$83,156	\$82,804
Vested Participants:	732	729
Nonvested Participants:	488	477

544 active members will be eligible for a lump sum benefit at their Normal Retirement Date.

Deferred Vested Members as of January 1, 2019

Deferred Vested Members ¹		
<u>Age Group</u>	<u>Number</u>	<u>Monthly Pension²</u>
Under 25	0	\$ -
25-29	6	2,577
30-34	26	14,255
35-39	37	19,414
40-44	41	25,972
45-49	72	52,289
50-54	89	54,947
55-59	96	52,040
60-64	110	58,051
65+	11	4,408
Total	488	\$ 283,953

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

	<u>Current Valuation</u>	<u>Previous Valuation</u>
Total Count:	488	477
Average Age:	52.1	52.4
Average Monthly Benefit:	\$582	\$576

¹Includes 406 deferred vested members, 4 deferred beneficiaries and 78 transfers.

²If at least 10 years of service, calculated based on a commencement age of 60 and an actuarial reduction applied to the benefit. If less than 10 years of service, calculated based on a commencement age of 65.

Members in Pay Status as of January 1, 2019

Members Currently in Pay Status¹

<u>Age Group</u>	<u>Number</u>	<u>Monthly Pension</u>
Under 55	1	\$ 630
55-59	35	76,219
60-64	121	246,685
65-69	287	534,398
70-74	186	284,654
75-79	102	101,933
80-84	65	72,393
85-89	22	16,387
90+	10	5,518
Unknown	4	7,852
Total	833	\$ 1,346,669

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

	<u>Current Valuation</u>	<u>Previous Valuation</u>
Total Count:	833	787
Average Age:	70.6	70.4
Average Monthly Benefit:	\$1,617	\$1,601

¹Includes 715 retirees, 86 beneficiaries and 32 alternate payees (from QDRO).

SECTION C

ACTUARIAL VALUATION PROCEDURES

Actuarial Cost Method

Normal cost and the allocation of benefit values between service rendered before and after the actuarial valuation date was determined using the **Entry Age Normal actuarial cost method** having the following characteristics:

- The normal cost for each individual active member equals a level percentage of an individual's covered payroll (sometimes level dollar). If this rate is contributed from the date of hire (entry age) to the date of retirement, the amount would accumulate to the present value of projected benefits at retirement; and
- The actuarial accrued liability for each individual active member equals the accrual of normal costs that are expected to have been paid in the past. The actuarial accrued liability for retired and inactive members equals the present value of benefits.

Financing of Unfunded Actuarial Accrued Liabilities. The unfunded actuarial accrued liability is amortized using a level-dollar 30-year amortization over a closed period beginning January 1, 2015. 26 years remain as of January 1, 2019.

Actuarial Value of Pension Plan Assets. The asset value is the actuarial value of assets which is calculated by recognizing 20 percent of the investment gain or loss (the difference between the actual investment return and the expected investment return, which is 7.75 percent beginning January 1, 2012 and 7.50 percent beginning January 1, 2015) on the market value of assets for each of the five following fiscal years. The actuarial value of assets is subject to a 20% corridor around market value of assets.

Actuarial Assumptions in the Actuarial Valuation Process

The contribution and benefit values of the Plan are calculated by applying actuarial assumptions to the benefit provisions and census information furnished, using the actuarial cost method described on the previous page.

The principal areas of financial risk which require assumptions about future experiences are:

- Long-term rates of investment return to be generated by the assets of the RTA Pension Plan;
- Patterns of pay increases to members;
- Rates of mortality among members, retirees and beneficiaries;
- Rates of withdrawal of active members;
- Rates of disability among members; and
- The age patterns of actual retirement.

In an actuarial valuation, the monetary effect of each actuarial assumption is calculated for as long as a present covered person survives; a period of time which can be as long as a century.

Actual experience of the Plan will not coincide exactly with assumed experience. Each actuarial valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments (usually small) to the computed contribution rate.

Actuarial Valuation Assumptions (Continued)

The actuarial assumptions were last updated first effective with the actuarial valuation as of January 1, 2015, based on the experience study covering the period January 1, 2008, through January 1, 2013.

The assumed rate of price inflation was 2.75%. This assumption is not used directly in the actuarial valuation. However, the price inflation assumption underlies all of the other economic assumptions (investment return, salary increase and payroll growth assumption).

The assumed rate of investment return used was 7.50%, net of investment expenses, annually.

The rates of annual salary increase used for individual members are in accordance with the following table. This assumption is used to project a member's current salary to the salaries upon which benefit amounts will be based.

Salary Increases	
Age	Rate
20	8.75%
25	5.75%
30	5.50%
35	4.75%
40	4.25%
45	4.00%
50	3.75%
55	3.75%
60	3.75%
65	3.25%

The mortality table used to measure retirement mortality was RP 2014 Employee Mortality table, sex-distinct, for pre-retirement mortality and the RP 2014 Healthy Annuitant Mortality table, sex-distinct, for post-retirement mortality. This assumption is used to measure the probabilities of members dying before retirement and the probabilities of each benefit payment being made after retirement. Based on the most recent experience study, these tables provide a margin for near-term mortality improvements.

Sample Attained Ages	Single Life Retirement Values - Retired				Single Life Retirement Values - Active			
	Present Value of \$1		Future Life		Present Value of \$1		Future Life	
	Monthly for Life		Expectancy (years)		Monthly for Life		Expectancy (years)	
	Men	Women	Men	Women	Men	Women	Men	Women
50	142.80	147.06	32.51	35.19	147.20	152.73	34.37	38.85
55	136.40	141.23	28.23	30.70	140.57	147.90	29.71	34.08
60	128.43	133.63	24.07	26.29	132.06	141.49	25.18	29.39
65	118.42	124.07	20.05	22.04	121.52	132.94	20.85	24.78
70	106.21	112.46	16.23	18.01	108.95	121.82	16.82	20.30
75	91.99	98.84	12.70	14.28	94.28	107.73	13.09	16.01
80	76.20	83.43	9.54	10.90	77.60	90.04	9.73	11.94

Actuarial Valuation Assumptions (Continued)

Rates of separation from active membership are represented by the following table (rates do not apply to members eligible to retire and do not include separation on account of death or disability). This assumption measures the probabilities of members terminating employment.

Employee Withdrawal Rate (5 or more years of service)			
Age	Rate	Age	Rate
Under 30 ¹	10.00%	38	5.00%
31	7.50%	39	4.75%
32	7.00%	40	4.50%
33	6.50%	41	4.30%
34	6.00%	42	4.10%
35	5.75%	43	3.90%
36	5.50%	44	3.70%
37	5.25%	45+	3.50%

¹ Rate for females younger than age 30 is 8.00%.

The following service-based rates are used instead of the age-based withdrawal rates shown above for the first four years of service:

Years of Service	Male	Female
1	12.0%	10.0%
2	11.0%	9.0%
3	10.0%	8.0%
4	10.0%	8.0%

Members who terminate service with at least 10 years of service are assumed to commence benefits at age 60. Vested terminated members with less than 10 years of service are assumed to commence benefits at age 65.

Rates of disability were as follows:

Employee Disablement Rate		
Age	Males	Females
20	0.015%	0.015%
25	0.019%	0.024%
30	0.024%	0.040%
35	0.035%	0.068%
40	0.059%	0.106%
45	0.101%	0.162%
50	0.179%	0.267%
55	0.361%	0.476%
60	0.628%	0.580%

Actuarial Valuation Assumptions (Continued)

Rates of retirement for members eligible to retire during the next year were as follows:

Reduced Benefit		Unreduced Benefit	
Age	Rates	Age	Rates
55	2.0 %	65	20.0 %
56	2.0	66	20.0
57	2.0	67	20.0
58	2.0	68	20.0
59	2.0	69	30.0
60	10.0	70	30.0
61	10.0	71	30.0
62	10.0	72	30.0
63	5.0	73	30.0
64	5.0	74	30.0
		75+	100.0

For members with 40 or more years of service and younger than age 75, the assumed rate of retirement is 75%.

Marital Status: It is assumed that 75% of males and 50% of females have an eligible spouse. The male spouse is assumed to be three years older than the female spouse.

Dependent Assumptions: The following assumptions are made for the dependent preretirement death benefit:

- 5% of males and 10% of females will have dependent children eligible;
- The youngest child of an eligible employee is 35 years younger than the employee; and
- Members younger than age 25 do not have children.

Form of Payment: 50% of lump sum eligible retirees were assumed to elect the lump sum form of payment.

42.5% of future retirees are assumed to elect a joint and survivor benefit. A load of -1.2% is applied to active member liabilities to account for the difference in assumptions used to calculate optional forms of payment and the assumptions used in the actuarial valuation to calculate liabilities.

Benefit Service: Exact fractional years of service are used to determine the amount of benefit payable.

Decrement Timing: All decrements are assumed to occur mid-year.

Decrement Operation: Turnover decrements do not operate after the member reaches retirement eligibility.

Actuarial Valuation Assumptions (Continued)

Eligibility Testing: Eligibility for benefits is determined based upon the age nearest birthday and service on the date the decrement is assumed to occur.

Pay Increase Timing: End of (fiscal) year.

Expenses: Expenses added to the Normal Cost were assumed to be 105 percent of the average actual administrative expenses over the past three years.

	Administrative	Investment	Total Actual	Assumed
Fiscal Year End	Expense	Advisor Expenses	Expenses	Expenses in Following Fiscal Year
2018	\$ 472,675	\$ 95,000	\$ 567,675	\$ 630,749
2017	470,446	120,000	590,446	
2016	466,519	177,500	644,019	

**Service for Continuing
Actives:**

All members active last year and this year who worked more than 1,000 hours earned a full year of service.

For members hired during 2018, service was credited as follows:

Hired before 8/14/2018 – 12 months

Hired on or after 8/14/2018 and before 9/18/2018 – 4 months

Hired on or after 9/18/2018 and before 10/18/2018 – 3 months

Hired on or after 10/18/2018 and before 11/18/2018 – 2 months

Hired on or after 11/18/2018 and before 12/18/2018 – 1 month

Hired on or after 12/18/2018 – 0 months

Data Adjustments:

Pay Adjustments

For disabled members whose pay rate as of January 1, 2019, was zero or was not provided, we used the most recent pay rate available in the pension administration data.

Benefit Adjustments

Based on information from the administrator, the monthly benefit provided in the census data is the amount payable to the member at actual benefit commencement (for members receiving benefits) and normal retirement age for deferred vested members and transfers.

Beneficiary benefits are calculated by multiplying the monthly benefit in the data by the joint and survivor benefit percentage (if applicable).

Deferred vested member benefits are calculated by multiplying the monthly benefit in the data by the applicable early retirement reduction factor if the benefit is assumed to commence prior to the normal retirement age of 65.

Actuarial Valuation Assumptions (Continued)

Status Changes

One member who was reported in the pension administration data as terminated as of January 1, 2019, and was later indicated as receiving benefits retroactive to a date prior to January 1, 2019, was included as a retiree.

Lump Sum Conversion

Factors:

The annual lump sum conversion factors are based on the November segment rates and the applicable mortality table under the Pension Protection Act.

For actuarial valuation purposes only, the lump sum conversion factors used are based on:

1. The segment rates from the November preceding the actuarial valuation for projected lump sum retirements within five years of the actuarial valuation date (and are updated annually in the actuarial valuation)
2. Assumed segment rates for projected lump sum retirements more than five years after the actuarial valuation date (rates are only updated periodically after experience studies)
3. The current applicable mortality assumption under the Pension Protection Act is used.

	Assumed Retirements within 5 Years	Assumed Retirements after 5 Years
Assumed Rates		
First Segment	3.43%	2.75%
Second Segment	4.46%	5.35%
Third Segment	4.88%	6.30%

SECTION D

HISTORICAL PLAN TRENDS

Funded Ratio History

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded AAL (UAAL) (b – a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Payroll [(b – a)/c]
1/1/2014	\$ 180,317,254	\$233,751,698	\$ 53,434,444	77.1 %	\$ 74,809,822	71.4 %
1/1/2015	196,142,829	270,324,403	74,181,574	72.6	83,485,618	88.9
1/1/2016	265,692,481	286,457,946	20,765,465	92.8	88,663,051	23.4
1/1/2017	275,792,027	302,074,097	26,282,070	91.3	93,950,500	28.0
1/1/2018	289,367,890	320,195,599	30,827,709	90.4	100,053,769	30.8
1/1/2019	292,178,756	330,781,816	38,603,060	88.3	103,276,538	37.4

The market value of assets used to develop the actuarial value of assets is based on accrual accounting and consistent with the asset value shown in the Plan's financial statement.

Employer Contribution History

Fiscal Year Ended	Recommended Annual Contribution (a)	Total Employer Contribution (b)	Excess/ (Deficit) (c)	Percentage Contributed (b / a)
12/31/2014	\$ 13,689,196	\$ 13,689,196	\$ -	100.0 %
12/31/2015	13,598,896	77,095,000	63,496,104	566.9
12/31/2016	9,534,166	10,834,166	1,300,000	113.6
12/31/2017	10,581,706	11,881,706	1,300,000	112.3
12/31/2018	11,592,096	12,892,096	1,300,000	111.2
12/31/2019	12,584,605	TBD	TBD	TBD

SECTION E

GLOSSARY OF TERMS

Glossary of Terms

Actuarial Accrued Liability (AAL). The difference between (i) the actuarial present value of future Plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as “accrued liability” or “past service liability.”

Actuarial Assumptions. Estimates of future Plan experience such as investment return, expected lifetimes and the likelihood of receiving a pension from the Pension Plan. Demographic, or “people” assumptions, include rates of mortality, retirement and separation. Economic, or “money” assumptions, include expected investment return, inflation and salary increases.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future Plan benefits” between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”

Actuarial Present Value of Future Plan Benefits. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Actuarial Value of Assets (AVA). Smoothed value of assets that recognizes the difference between the expected investment return using the actuarial valuation assumption of 7.50 percent and the actual investment return over a five-year period. Dampens volatility of asset value over time.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Annual Required Contribution. The sum of the normal cost and amortization of the unfunded actuarial accrued liability.

Asset Return. The net investment return for the asset divided by the mean asset value. Example: if \$1.00 is invested and yields \$1.075 after a year, the asset return is 7.50 percent.

Funded Ratio. The actuarial value of assets divided by the actuarial accrued liability. Measures the portion of the actuarial accrued liability that is currently funded.

Market Value of Assets (MVA). The value of assets currently held in the trust available to pay for benefits of the Pension Plan. Each of the investments in the trust is valued at market price which is the price at which buyers and sellers trade similar items in the open market.

Normal Cost (NC). The annual cost assigned, under the actuarial funding method, to current and subsequent Plan years. Sometimes referred to as “current service cost.” Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Unfunded Actuarial Accrued Liability (UAAL). The difference between the actuarial accrued liability and actuarial valuation assets. Sometimes referred to as “unfunded accrued liability.”