

# St. Paul Teachers' Retirement Fund Association

GASB Statement Nos. 67 and 68 Accounting and  
Financial Reporting for Pensions  
June 30, 2020





December 16, 2020

St. Paul Teachers' Retirement Fund Association  
1619 Dayton Avenue, Room 309  
St. Paul, Minnesota 55104-6206

Dear Trustees:

This report provides accounting and financial reporting information that is intended to comply with the Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 for the St. Paul Teachers' Retirement Fund Association ("SPTRFA" or "Fund"). These calculations have been made on a basis that is consistent with our understanding of these Statements.

GASB Statement No. 67 is the accounting standard that applies to the stand-alone financial reports issued by retirement systems. GASB Statement No. 68 establishes accounting and financial reporting for state and local government employers who provide their employees (including former employees) pension benefits through a trust. GASB Statement No. 82 is an amendment to Statements No. 67, No. 68, and No. 73, intended to improve consistency in the application of accounting statements.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of providing reporting and disclosure information that satisfies the requirements of GASB Statement Nos. 67 and 68. *The Net Pension Liability is not an appropriate measure for measuring the sufficiency of plan assets to cover the estimated cost of settling the employer's benefit obligation. The Net Pension Liability is not an appropriate measure for assessing the need for or amount of future employer contributions. The calculation of the plan's liability for this report is not applicable for purposes of funding the plan.* A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement No. 67 may produce significantly different results. The information in this report is calculated on a total plan basis. The Fund is responsible for preparing the Schedule of Employer Allocations and the Schedule of Pension Amounts by Employer. This report may be provided to parties other than the St. Paul Teachers' Retirement Fund Association only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by the Fund, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. If your understanding of this information is different, please let us know. This information was checked for internal consistency, but it was not audited.

This report complements the actuarial valuation report for funding purposes that was or will be provided to the Fund and should be considered in conjunction with that report. Please see the actuarial funding valuation report as of June 30, 2020 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

This report does not fully reflect the recent and still developing impact of COVID-19, which is likely to influence demographic and investment experience, at least in the short term. We will continue to monitor these developments and their impact on the plan.

This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

To the best of our knowledge, the information contained within this report is accurate and represents the actuarial position of the St. Paul Teachers' Retirement Fund Association according to the disclosed assumptions. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

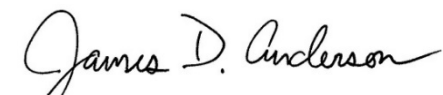
The signing actuaries are independent of the plan sponsor.

Bonita J. Wurst, James D. Anderson and Sheryl L. Christensen are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,



Bonita J. Wurst, ASA, EA, FCA, MAAA



James D. Anderson, FSA, EA, FCA, MAAA



Sheryl L. Christensen, ASA, EA, FCA, MAAA

BJW/JDA/SLC:bd



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# SECTION A



## EXECUTIVE SUMMARY

# Executive Summary

## as of June 30, 2020 (Dollars in Thousands)

	<b>2020</b>	
Actuarial Valuation Date	June 30, 2020	
Measurement Date of the Net Pension Liability	June 30, 2020	
<b>Membership</b>		
Number of		
- Service Retirements	3,721	
- Survivors	360	
- Disability Retirements	21	
- Deferred Retirements	2,491	
- Terminated other non-vested	2,834	
- Active Members	3,445	
- Total	12,872	
Covered Payroll	\$ 274,667	
<b>Net Pension Liability</b>		
Total Pension Liability	\$ 1,691,236	
Plan Fiduciary Net Position	1,037,613	
Net Pension Liability	\$ 653,623	
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	61.35%	
Net Pension Liability as a Percentage of Covered Payroll	237.97%	
<b>Development of the Single Discount Rate</b>		
Single Discount Rate	7.50%	
Long-Term Expected Rate of Investment Return	7.50%	
Long-Term Municipal Bond Rate*	2.45%	
Last year ending June 30 in the 2021 to 2120 projection period within which projected benefit payments are fully funded	2120	
<b>Total Pension Expense</b>	<b>\$ 75,629</b>	
<b>Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses</b>		
	<b>Deferred Outflows of Resources</b>	<b>Deferred Inflows of Resources</b>
Difference between expected and actual experience	\$ -	\$ 21,800
Changes in assumptions	29,641	4,747
Net difference between projected and actual earnings on pension plan investments	69,712	17,082
Total	\$ 99,353	\$ 43,629

\* Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's '20-Year Municipal GO AA Index' as of June 30, 2020.



# Discussion

## Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability. Similarly, GASB Statement No. 68 establishes standards for state and local government employers (as well as non-employer contributing entities) to account for and disclose the net pension liability, pension expense, and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements.

The following discussion provides a summary of the information that is required to be disclosed under these accounting standards. A number of these disclosure items are provided in this report. However, certain information, such as notes regarding accounting policies and investments, is not included in this report and the retirement system and/or plan sponsor will be responsible for preparing and disclosing that information to comply with these accounting standards.

## Financial Statements

GASB Statement No. 68 requires state or local governments to recognize the net pension liability and the pension expense on their financial statements. The net pension liability is the difference between the total pension liability and the plan's fiduciary net position. In traditional actuarial terms, this is analogous to the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

Paragraph 57 of GASB Statement No. 68 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." There were no contributions made to SPTRFA subsequent to the measurement date of June 30, 2020.

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the liability and investment experience.

Pension plans that prepare their own, stand-alone financial statements are required to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position in accordance with GASB Statement No. 67. The statement of fiduciary net position presents the assets and liabilities of the pension plan at the end of the pension plan's reporting period. The statement of changes in fiduciary net position presents the additions, such as contributions and investment income, and deductions, such as benefit payments and expenses, and net increase or decrease in the fiduciary net position.

## Notes to Financial Statements

GASB Statement No. 68 requires the notes of the employer's financial statements to disclose the total pension expense, the pension plan's liabilities and assets, and deferred outflows and inflows of resources related to pensions.

GASB Statement Nos. 67 and 68 require the notes of the financial statements for the employers and pension plans to include certain additional information. The list of disclosure items should include:

- A description of benefits provided by the plan;
- The type of employees and number of members covered by the pension plan;
- A description of the plan's funding policy, which includes member and employer contribution requirements;
- The pension plan's investment policies;
- The pension plan's fiduciary net position, net pension liability, and the pension plan's fiduciary net position as a percentage of the total pension liability;
- The net pension liability using a discount rate that is 1% higher and 1% lower than used to calculate the total pension liability and net pension liability for financial reporting purposes;
- Significant assumptions and methods used to calculate the total pension liability;
- Inputs to the discount rates; and
- Certain information about mortality assumptions and the dates of experience studies.

Retirement systems that issue stand-alone financial statements are required to disclose additional information in accordance with GASB Statement No. 67. This information includes:

- The composition of the pension plan's Board and the authority under which benefit terms may be amended;
- A description of how fair value is determined;
- Information regarding certain reserves and investments, which include concentrations of investments greater than or equal to 5%, receivables, and insurance contracts excluded from plan assets; and
- Annual money-weighted rate of return.

## Required Supplementary Information

GASB Statement No. 67 requires a 10-year fiscal history of:

- Sources of changes in the net pension liability;
- Information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll; and
- A comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy.

## Measurement of the Net Pension Liability

The net pension liability is to be measured as the total pension liability, less the amount of the pension plan's fiduciary net position. In actuarial terms, this will be the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).



## 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%), then the following outcomes are expected:

- (1) The normal cost of the plan is expected to remain approximately level as a percent of pay;
- (2) The funded status of the plan is expected to gradually improve and is expected to be 100% funded within the next 28 years; and
- (3) The unfunded liability will grow initially as a dollar amount before beginning to decline.

The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

### Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. For employer reporting, the net pension liability and pension expense should be measured as of a date (measurement date) no earlier than the end of the employer's prior fiscal year, consistently applied from period to period. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2020 and a measurement date of June 30, 2020.

### Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a single discount rate. This rate differs depending on whether or not the Fund has a projected sufficiency of assets to pay benefits.

Due to the projected sufficiency of assets to pay benefits, the single discount rate is equal to the 7.50% long-term expected rate of return on pension plan investments, for the purposes of this valuation.

Had the Fund been projected to have insufficient assets to pay all projected benefits, the single discount rate would instead reflect a combination of (1) the 7.50% long-term expected rate of return on pension plan investments (for all years where a projected asset sufficiency exists), then (2) a lower tax-exempt municipal bond rate\* (for all remaining years where projected asset insufficiencies exist).

\* Source: Based on the 20-Year Municipal GO Index of mixed maturity general obligation municipal bonds as of the weekly rate closest to but not later than the Measurement Date.

## **SECTION B**

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### **FINANCIAL STATEMENTS**

Note – Section B is intended to assist in preparation of the financial statements of the St. Paul Teachers' Retirement Fund Association. Financial statements are the responsibility of management, subject to the auditor's review.

# Statement of Pension Expense Under GASB Statement No. 68

## Fiscal Year Ended June 30, 2020 (Dollars in Thousands)

### A. Expense/(Income)

1. Service Cost, Beginning of Year	\$ 23,120
2. Interest on the Total Pension Liability	123,300
3. Current-Period Benefit Changes	-
4. Employee Contributions (made negative for addition here)	(20,889)
5. Projected Earnings on Plan Investments (made negative for addition here)	(79,216)
6. Pension Plan Administrative Expense	788
7. Other Changes in Plan Fiduciary Net Position	-
8. Recognition of Outflow (Inflow) of Resources due to Liabilities	8,657
9. Recognition of Outflow (Inflow) of Resources due to Assets	19,869
10. <b>Total Pension Expense / (Income)</b>	<b><u>\$ 75,629</u></b>

### Recognition of Deferred Outflows and Inflows of Resources

Differences between expected and actual experience and changes in assumptions are recognized in pension expense using a systematic and rational method over a closed period equal to the average of the expected remaining service lives of all employees that are provided with pension through the pension plan (active employees and inactive employees) determined as of the beginning of the measurement period.

At the beginning of the current measurement period, the expected remaining service lives of all active employees in the plan was approximately 40,921 years. Additionally, the total plan membership (active employees and inactive employees) was 12,702. As a result, the average of the expected remaining service lives for purposes of recognizing the applicable deferred outflows and inflows of resources established in the current measurement period is 3.0000 years (rounded).

Additionally, differences between projected and actual earnings on plan investments should be recognized in pension expense using a systematic and rational method over a closed 5-year period. For this purpose, the deferred outflows and inflows of resources are recognized in the pension expense as a level dollar amount over the closed period identified above.

# Statement of Outflows and Inflows Arising from Current Reporting Period Fiscal Year Ended June 30, 2020 (Dollars in Thousands)

## A. Outflows (Inflows) of Resources due to Liabilities

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$ (22,742)
2. Assumption Changes (gains) or losses	\$ (5,601)
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	3
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability	\$ (7,581)
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$ (1,867)
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	<u>\$ (9,448)</u>
7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the difference between expected and actual experience of the Total Pension Liability	\$ (15,161)
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$ (3,734)
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	<u>\$ (18,895)</u>

## B. Outflows (Inflows) of Resources due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ 73,490
2. Recognition period for Assets {in years}	5
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	\$ 14,698
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$ 58,792

# Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended June 30, 2020 (Dollars in Thousands)

## A. Outflows and Inflows of Resources due to Liabilities and Assets to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows/(Inflows) of Resources
1. Due to Liabilities	\$ 31,415	\$ 22,758	\$ 8,657
2. Due to Assets	33,829	13,960	19,869
<b>3. Total</b>	<b>\$ 65,244</b>	<b>\$ 36,718</b>	<b>\$ 28,526</b>

## B. Outflows and Inflows of Resources by Source to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows/(Inflows) of Resources
1. Differences between expected and actual experience	\$ 1,775	\$ 14,219	\$ (12,444)
2. Assumption Changes	29,640	8,539	21,101
3. Net Difference between projected and actual earnings on pension plan investments	33,829	13,960	19,869
<b>4. Total</b>	<b>\$ 65,244</b>	<b>\$ 36,718</b>	<b>\$ 28,526</b>

## C. Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows/ (Inflows) of Resources
1. Differences between expected and actual experience	\$ -	\$ 21,800	\$ (21,800)
2. Assumption Changes	29,641	4,747	24,894
3. Net Difference between projected and actual earnings on pension plan investments	69,712	17,082	52,630
<b>4. Total</b>	<b>\$ 99,353</b>	<b>\$ 43,629</b>	<b>\$ 55,724</b>

## D. Deferred Outflows and Deferred Inflows of Resources by Year to be Recognized in Future Pension Expenses

Year Ending June 30	Net Deferred Outflows/ (Inflows) of Resources
2021	\$ 16,918
2022	5,770
2023	18,338
2024	14,698
2025	-
Thereafter	-
<b>Total</b>	<b>\$ 55,724</b>



## Recognition of Deferred Outflows and Inflows of Resources Fiscal Year Ended June 30, 2020 (Dollars in Thousands)

Year Established	Initial Amount	Initial Recognition Period	Current Year Recognition	Remaining Recognition	Remaining Recognition Period
<b>Deferred Outflow (Inflow) due to Differences Between Expected and Actual Experience on Liabilities</b>					
2017	\$ 7,106	4.0000	\$ 1,775	\$ -	0.0000
2018	(13,445)	4.0000	(3,361)	(3,362)	1.0000
2019	(9,831)	3.0000	(3,277)	(3,277)	1.0000
2020	(22,742)	3.0000	(7,581)	(15,161)	2.0000
<b>Total</b>			<b>\$ (12,444)</b>	<b>\$ (21,800)</b>	
<b>Deferred Outflow (Inflow) due to Assumption Changes</b>					
2017	\$ (22,643)	4.0000	\$ (5,660)	\$ -	0.0000
2018	118,561	4.0000	29,640	29,641	1.0000
2019	(3,037)	3.0000	(1,012)	(1,013)	1.0000
2020	(5,601)	3.0000	(1,867)	(3,734)	2.0000
<b>Total</b>			<b>\$ 21,101</b>	<b>\$ 24,894</b>	
<b>Deferred Outflow (Inflow) due to Differences Between Projected and Actual Earnings on Plan Investments</b>					
2016	\$ 77,451	5.0000	\$ 15,491	\$ -	0.0000
2017	(54,191)	5.0000	(10,838)	(10,839)	1.0000
2018	(15,609)	5.0000	(3,122)	(6,243)	2.0000
2019	18,200	5.0000	3,640	10,920	3.0000
2020	73,490	5.0000	14,698	58,792	4.0000
<b>Total</b>			<b>\$ 19,869</b>	<b>\$ 52,630</b>	
<b>Deferred Outflow (Inflow) due to All Sources</b>					
<b>Total</b>			<b>\$ 28,526</b>	<b>\$ 55,724</b>	

## Statement of Fiduciary Net Position as of June 30, 2020 (Dollars in Thousands)

	<b>2020</b>
<b>Assets</b>	
Cash and Deposits	\$ 20,081
Receivables	
Accounts Receivable - Sale of Investments	\$ -
Accrued Interest and Other Dividends	-
Contributions	-
Accounts Receivable - Other	-
Total Receivables	\$ -
Investments	
Fixed Income	\$ 149,635
Equity	635,049
Real Assets	68,430
Cash and Cash Equivalents	36,413
Other	131,580
Total Investments	\$ 1,021,107
<b>Total Assets</b>	<b>\$ 1,041,188</b>
 <b>Liabilities</b>	
Payables	
Accounts Payable - Purchase of Investments	\$ 3,575
Accrued Expenses	-
Accounts Payable - Other	-
Total Liabilities	\$ 3,575
 <b>Net Position Restricted for Pensions</b>	 <b>\$ 1,037,613</b>

## Statement of Changes in Fiduciary Net Position for Year Ended June 30, 2020 (Dollars in Thousands)

### Additions

#### Contributions

Employer	\$ 33,861
Employer (for Reemployed Annuitants)	278
Employee	20,889
Other	15,665
<b>Total Contributions</b>	<b>\$ 70,693</b>

#### Investment Income

Net Appreciation in Fair Value of Investments	\$ (3,261)
Interest and Dividends	12,650
Less Investment Expense	(3,663)
<b>Net Investment Income</b>	<b>\$ 5,726</b>

#### Other

<b>Total Additions</b>	<b>\$ 76,419</b>
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### Deductions

Benefit payments, including refunds of employee contributions	\$ 118,562
Pension Plan Administrative Expense	788
Other	-
<b>Total Deductions</b>	<b>\$ 119,350</b>

<b>Net Increase in Net Position</b>	<b>\$ (42,931)</b>
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### Net Position Restricted for Pensions

Beginning of Year	\$ 1,080,544
End of Year	<b>\$ 1,037,613</b>



## SECTION C

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### **REQUIRED SUPPLEMENTARY INFORMATION**

Note – Section C is intended to assist in preparation of the financial statements of the St. Paul Teachers' Retirement Fund Association. Financial statements are the responsibility of management, subject to the auditor's review.

# Schedule of Changes in Net Pension Liability and Related Ratios

## Current Period

### Fiscal Year Ended June 30, 2020 (Dollars in Thousands)

<b>A. Total Pension Liability</b>	
1. Service Cost	\$ 23,120
2. Interest on the Total Pension Liability	123,300
3. Changes of benefit terms	-
4. Difference between expected and actual experience of the Total Pension Liability	(22,742)
5. Changes of assumptions	(5,601)
6. Benefit payments, including refunds of employee contributions	(118,562)
7. Net change in Total Pension Liability	\$ (485)
8. Total Pension Liability – Beginning	1,691,721
9. Total Pension Liability – Ending	<u><u>\$ 1,691,236</u></u>
<b>B. Plan Fiduciary Net Position</b>	
1. Contributions – Employer <sup>^</sup>	\$ 49,804
2. Contributions – Employee	20,889
3. Net investment income	5,726
4. Benefit payments, including refunds of employee contributions	(118,562)
5. Pension Plan Administrative Expense	(788)
6. Other	-
7. Net change in Plan Fiduciary Net Position	\$ (42,931)
8. Plan Fiduciary Net Position – Beginning	1,080,544
9. Plan Fiduciary Net Position – Ending	<u><u>\$ 1,037,613</u></u>
<b>C. Net Pension Liability</b>	<u><u>\$ 653,623</u></u>
<b>D. Plan Fiduciary Net Position as a Percentage of the Total Pension Liability</b>	<b>61.35%</b>
<b>E. Covered-Employee payroll</b>	<b>\$ 274,667</b>
<b>F. Net pension liability as a percentage of Covered-Employee payroll</b>	<b>237.97%</b>

<sup>^</sup> Includes employer contributions, supplemental contributions, and reemployed annuitant employer contributions.

## Schedules of Required Supplementary Information

### Schedule of Changes in Net Pension Liability and Related Ratios Multiyear (Dollars in Thousands)

Last 10 Fiscal Years (which may be built prospectively)

Fiscal year ending June 30,	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
<b>Total Pension Liability</b>										
Service Cost	\$ 23,120	\$ 23,279	\$ 25,087	\$ 24,098	\$ 25,596	\$ 24,998	\$ 22,954			
Interest on the Total Pension Liability	123,300	122,197	125,256	123,820	124,294	123,108	118,503			
Benefit Changes	-	-	(74,376)	-	-	(5,677)	-			
Difference between Expected and Actual Experience	(22,742)	(9,831)	(13,445)	7,106	(42,295)	(17,133)	(16,257)			
Assumption Changes	(5,601)	(3,037)	118,561	(22,643)			39,642			
Benefit Payments	(117,306)	(116,379)	(115,298)	(112,771)	(111,167)	(108,878)	(105,742)			
Refunds	(1,256)	(701)	(800)	(972)	(628)	(875)	(1,103)			
<b>Net Change in Total Pension Liability</b>	(485)	15,528	64,985	18,638	(4,200)	15,543	57,997			
<b>Total Pension Liability - Beginning</b>	1,691,721	1,676,193	1,611,208	1,592,570	1,596,770	1,581,227	1,523,230			
<b>Total Pension Liability - Ending (a)</b>	<u>\$ 1,691,236</u>	<u>\$ 1,691,721</u>	<u>\$ 1,676,193</u>	<u>\$ 1,611,208</u>	<u>\$ 1,592,570</u>	<u>\$ 1,596,770</u>	<u>\$ 1,581,227</u>			
<b>Plan Fiduciary Net Position</b>										
Employer Contributions*	\$ 49,804	\$ 46,981	\$ 39,209	\$ 38,350	\$ 37,228	\$ 36,711	\$ 35,197			
Employee Contributions	20,889	20,626	20,112	20,146	18,538	17,567	16,564			
Pension Plan Net Investment Income	5,726	60,209	95,886	128,719	1,475	25,757	168,176			
Benefit Payments	(117,306)	(116,379)	(115,298)	(112,771)	(111,167)	(108,878)	(105,742)			
Refunds	(1,256)	(701)	(800)	(972)	(628)	(875)	(1,103)			
Pension Plan Administrative Expense	(788)	(764)	(786)	(889)	(749)	(748)	(739)			
Other	-	-	-	-	-	-	-			
<b>Net Change in Plan Fiduciary Net Position</b>	(42,931)	9,972	38,323	72,583	(55,303)	(30,466)	112,353			
<b>Plan Fiduciary Net Position - Beginning</b>	1,080,544	1,070,572	1,032,249	959,666	1,014,969	1,045,435	933,082			
<b>Plan Fiduciary Net Position - Ending (b)</b>	<u>\$ 1,037,613</u>	<u>\$ 1,080,544</u>	<u>\$ 1,070,572</u>	<u>\$ 1,032,249</u>	<u>\$ 959,666</u>	<u>\$ 1,014,969</u>	<u>\$ 1,045,435</u>			
<b>Net Pension Liability - Ending (a) - (b)</b>	653,623	611,177	605,621	578,959	632,904	581,801	535,792			
<b>Plan Fiduciary Net Position as a Percentage</b>										
<b>of Total Pension Liability</b>	61.35 %	63.87 %	63.87 %	64.07 %	60.26 %	63.56 %	66.12 %			
<b>Covered Employee Payroll</b>	\$ 274,667	\$ 268,614	\$ 263,122	\$ 264,342	\$ 258,787	\$ 263,844	\$ 259,740			
<b>Net Pension Liability as a Percentage</b>										
<b>of Covered Employee Payroll</b>	237.97 %	227.53 %	230.17 %	219.02 %	244.57 %	220.51 %	206.28 %			
<b>Notes to Schedule:</b>										
N/A										

\* Includes employer contributions, supplemental contributions, and reemployed annuitant employer contributions.



# Schedules of Required Supplementary Information

## Schedule of the Net Pension Liability Multiyear (Dollars in Thousands)

Last 10 Fiscal Years (to be completed prospectively, commencing with 2014)

FY Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll	Net Pension Liability as a % of Covered Payroll
2011						
2012						
2013						
2014	\$ 1,581,227	\$ 1,045,435	\$ 535,792	66.12%	\$ 259,740	206.28%
2015	1,596,770	1,014,969	581,801	63.56%	263,844	220.51%
2016	1,592,570	959,666	632,904	60.26%	258,787	244.57%
2017	1,611,208	1,032,249	578,959	64.07%	264,342	219.02%
2018	1,676,193	1,070,572	605,621	63.87%	263,122	230.17%
2019	1,691,721	1,080,544	611,177	63.87%	268,614	227.53%
2020	1,691,236	1,037,613	653,623	61.35%	274,667	237.97%

# Schedule of Contributions Multiyear (Dollars in Thousands)

## Last 10 Fiscal Years

<b>FY Ending June 30,</b>	<b>Actuarially Determined Contribution</b>	<b>Actual Contribution*</b>	<b>Contribution Deficiency (Excess)</b>	<b>Covered Payroll</b>	<b>Actual Contribution as a % of Covered Payroll</b>
2011	\$ 33,819	\$ 25,090	\$ 8,729	\$ 239,738	10.47%
2012	29,797	25,109	4,688	239,053	10.50
2013	41,424	26,445	14,979	247,432	10.69
2014	40,916	35,197	5,719	259,740	13.55
2015	40,320	36,711	3,609	263,844	13.91
2016	39,068	37,228	1,840	258,787	14.39
2017	39,172	38,350	822	264,342	14.51
2018	38,196	39,209	(1,013)	263,122	14.90
2019	37,233	46,981	(9,748)	268,614	17.49
2020	39,181	49,804	(10,623)	274,667	18.13

\* Includes employer contributions, supplemental contributions, and reemployed annuitant employer contributions.

## Notes to Schedule of Contributions

### Methods and Assumptions Used to Determine Fiscal Year Ending June 30, 2020 Contribution Rates Reported in this Schedule:

Notes	Actuarially determined contribution rates are calculated as of each June 30 and apply to the fiscal year beginning on the day after the measurement date.
Valuation Date	June 30, 2019
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	29 years
Asset Valuation Method	5-Year smoothed market; no corridor
Inflation	2.5%
Salary Increases	3.00% to 9.00%; service based
Investment Rate of Return	7.5%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2018 valuation pursuant to an experience study of the period 2011 - 2016.
Mortality	RP-2014 annuitant generational mortality table, projected with scale MP-2018 from a base year of 2006, white collar adjustment, set back two years for females.

### Other Information:

Notes See separate funding report as of July 1, 2019 for additional detail.



# Schedule of Investment Returns Multiyear

Last 10 Fiscal Years (to be completed prospectively, commencing with 2014)

<u>FY Ending June 30,</u>	<u>Annual Return<sup>1</sup></u>
2011	
2012	
2013	
2014	18.50 %
2015	2.65 %
2016	0.34 %
2017	13.93 %
2018	9.75 %
2019	5.73 %
2020	0.10 %

<sup>1</sup> Annual money-weighted rate of return, net of investment expenses.

The St. Paul Teachers' Retirement Fund Association compiled this data and the related investment notes and furnished this information for inclusion within this report. We did not audit this information. We are not responsible for its accuracy or completeness.

## Rate of Return

The Association's money-weighted rate of return for the year ending June 30, 2020 was 0.10% (net of fees). The money-weighted rate of return expresses investment performance, net of fees, adjusted for the actual cash flows that took place during the performance period.

## 10-Year Schedule of Money-Weighted Investment Return

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, SPTRFA will present information for those years for which information is available.

## SECTION D

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### **NOTES TO FINANCIAL STATEMENTS**

Note – Section D is intended to assist in preparation of the financial statements of the St. Paul Teachers' Retirement Fund Association. Financial statements are the responsibility of management, subject to the auditor's review.

## Long-Term Expected Return on Plan Assets

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These real rates of return are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. For each major asset class that is included in the pension plan's target asset allocation as of June 30, 2020, these best estimates are summarized in the following table:

### Long-Term Expected Real Rate of Return\*

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return (Arithmetic)
Domestic Equity	35%	6.55%
International Equity	20%	6.98%
Fixed Income	20%	3.45%
Real Assets	11%	3.90%
Private Equity & Alternatives	9%	7.47%
Opportunistic	5%	6.08%
<b>Total</b>	<b>100%</b>	

\* For purposes of these calculations, SPTRFA's assumed inflation rate is 2.50%.

The St. Paul Teachers' Retirement Fund Association compiled this data and the related investment notes and furnished this information for inclusion within this report. We did not audit this information. We are not responsible for its accuracy or completeness.



## Single Discount Rate

A Single Discount Rate of 7.50% was used to measure the total pension liability. This Single Discount Rate was based on the expected rate of return on pension plan investments of 7.50%. The projection of cash flows used to determine this Single Discount Rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the net pension liability to changes in the Single Discount Rate, the following presents the plan's net pension liability, calculated using a Single Discount Rate of 7.50%, as well as what the plan's net pension liability would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher:

### Sensitivity of Net Pension Liability to the Single Discount Rate Assumption *(Dollars in Thousands)*

	1% Decrease 6.50%	Current Single Discount Rate Assumption 7.50%	1% Increase 8.50%
Total Pension Liability	\$1,891,716	\$1,691,236	\$1,525,137
Net Position Restricted for Pensions	1,037,613	1,037,613	1,037,613
Net Pension Liability	<b>\$ 854,103</b>	<b>\$ 653,623</b>	<b>\$ 487,524</b>

Note that we believe the 8.5% interest rate assumption would not comply with Actuarial Standards of Practice.

## Reconciliation of Members

### Summary of Changes in Participant Status During Fiscal Year Ending June 30, 2020

	Active Participants	Leave of Absence	Vested Terminated	Other Non-Vested	Retired Participants	Disabled	Survivors and Beneficiaries	Alternate Payees <sup>2</sup>	Total
A. Number as of June 30, 2019	3,347	120	2,489	2,742	3,591	24	338	51	12,702
B. Additions	314	4	123	246	171	4	35	1	898
C. Deletions									
1. Retirements	(86)	(3)	(80)						(169)
2. Disability	(1)		(3)						(4)
3. Died with Beneficiary	(1)	(2)	(3)	(7)	(30)	(2)			(45)
4. Died without Beneficiary				(6)	(59)		(22)		(87)
5. Terminated - Deferred	(107)	(14)							(121)
6. Terminated - Not Vested	(158)	(1)							(159)
7. Refunds	(9)	(1)	(27)	(109)					(146)
8. Rehired as Active	99	(56)	(24)	(19)					-
9. Leave of Absence	(45)	45							-
10. Repayment of Refund									-
11. Expired Benefits									-
12. Disability to Retirement					6	(6)			-
D. Data Adjustments <sup>1</sup>			16	(13)					3
E. Total on June 30, 2020	3,353	92	2,491	2,834	3,679	20	351	52	12,872

<sup>1</sup> Includes members not valued in prior valuation who repaid refunds or otherwise restored prior service.

<sup>2</sup> Includes alternate payees of retired participants (42), disabled participants (1), and survivors (9).



## GASB Reconciliation (Dollars in Thousands)

### Fiscal Year Ended June 30, 2020

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)	Deferred Outflows	Deferred Inflows	Outflows Prior Year	Total Pension Expense
<b>Balance Beginning of Year</b>	\$ 1,691,721	\$ 1,080,544	\$ 611,177				
<b>Changes for the Year:</b>							
Service Cost	\$ 23,120		\$ 23,120				\$ 23,120
Interest on Total Pension Liability	123,300		123,300				123,300
Interest on Fiduciary Net Position <sup>(1)</sup>		\$ 79,216	(79,216)				(79,216)
Changes in Benefit Terms							
Liability Experience Gains and Losses	(22,742)		(22,742)		\$ 21,800	\$ (11,502)	(12,444)
Changes in Assumptions	(5,601)		(5,601)	\$ 29,641	4,747	51,596	21,101
Contributions - Employer		49,804	(49,804)				
Contributions - Employees		20,889	(20,889)				(20,889)
Asset Gain/(Loss) <sup>(1)</sup>		(73,490)	73,490	69,712	17,082	(991)	19,869
Benefit Payouts	(118,562)	(118,562)					
Administrative Expenses		(788)	788				788
Other changes							
<b>Net Changes</b>	<u>\$ (485)</u>	<u>\$ (42,931)</u>	<u>\$ 42,446</u>				<u>\$ 75,629</u>
<b>Balance End of Year</b>	<u>\$ 1,691,236</u>	<u>\$ 1,037,613</u>	<u>\$ 653,623</u>	<u>\$ 99,353</u>	<u>\$ 43,629</u>	<u>\$ 39,103</u>	

<sup>(1)</sup> The sum of these items equals the net investment income of \$5,726.



## SECTION E

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### SUMMARY OF BENEFITS

# Summary of Benefit Provisions for Basic Members as of June 30, 2020

## **PARTICIPANTS**

Professional Educators first employed prior to July 1, 1978 by schools in the City of St. Paul or St. Paul College whose position requires a license from the Minnesota Professional Educator Licensing and Standards Board, who are not covered under the Social Security Act.

As of July 1, 2020, there are no remaining active Basic Members.

## **ACCREDITED SERVICE**

Service which has been verified and accredited by the Association for the purpose of determining contributions and benefits (may include service earned while working outside of St. Paul Public Schools, previous St. Paul service, military service and governmental service).

## **ALLOWABLE ST. PAUL SERVICE**

Service earned as a licensed educator in the St. Paul Public Schools, in the St. Paul College, or as an employee of the Association. Also includes service credited after receipt of payment as required, for licensed educators on leave.

## **SALARY**

Total compensation earned during a school year (July 1 to June 30) excluding lump sum payments for unused leave at termination and employer-paid insurance coverage.

# Summary of Benefit Provisions for Basic Members as of June 30, 2020

## AVERAGE SALARY

Average of the highest 5 years of salary during the last 10 years of St. Paul service while making contributions.

## NORMAL RETIREMENT BENEFIT

### *Eligibility*

Attainment of age 65 and 5 years of Accredited Service.

### *Benefit*

2.50 percent of Average Salary for each year of Accredited Service.

## EARLY RETIREMENT BENEFIT

### *Eligibility*

Attainment of age 55 and 5 years of Accredited Service.

### *Benefit*

The greater of the following benefits:

- 2.00 percent of Average Salary per year of Accredited Service, subject to a maximum of 40 years with a 0.25 percent reduction for each month the member is under age 65. If the member has 25 years of Accredited Service, the reduction is taken from age 60, therefore no reduction is required if the member is age 60 or older. No reduction is taken if age plus years of Accredited Service totals at least 90.
- 2.50 percent of Average Salary per year of Accredited Service, subject to a maximum of 40 years, reduced for each month the member is under age 65 using linear interpolation of the table listed below. The ultimate factors for retirements on or after July 1, 2024 will be phased in over a 60-month period starting July 1, 2019.

### UNDER AGE 62 OR LESS THAN 30 YEARS OF SERVICE

<u>Age at Retirement</u>	<u>RETIREMENTS PRIOR TO JULY 1, 2019</u>	<u>RETIREMENTS ON OR AFTER JULY 1, 2024</u>	<u>AGE 62 OR OLDER WITH 30 YEARS OF SERVICE</u>
55	0.5376	0.4200	
56	0.5745	0.4600	
57	0.6092	0.5000	
58	0.6419	0.5400	
59	0.6726	0.5800	
60	0.7354	0.6500	
61	0.7947	0.7200	
62	0.8507	0.7900	0.8831
63	0.9035	0.8600	0.9246
64	0.9533	0.9300	0.9635
65	1.0000	1.0000	1.0000



# Summary of Benefit Provisions for Basic Members as of June 30, 2020

## DISABILITY RETIREMENT BENEFIT

### *Eligibility*

Total and permanent disablement before attaining age 65 and 5 years of Accredited Service.

### *Benefit*

If the member is under age 65, 75 percent of the member's annual contract salary less any Social Security and Workers' Compensation benefits payable until age 65. At age 65, a normal retirement benefit is calculated using the projected service and average salary as if the member had continued to teach in their position held at the time of disability. Members age 65 or older at time of disability receive a normal retirement benefit.

## DEFERRED RETIREMENT BENEFIT

### *Eligibility*

5 years of Accredited Service.

### *Benefit*

Benefit computed under law in effect at termination and payable as a normal or early retirement benefit. For members hired on or before June 30, 2006, the benefit is augmented at 3.00 percent compounded annually from the 1<sup>st</sup> of the month following termination until the January 1<sup>st</sup> after turning age 55 and then augmented at 5.00 percent compounded annually from that date to July 1, 2012. For members hired after June 30, 2006, the benefit is augmented at 2.50 percent compounded annually from the 1<sup>st</sup> of the month following termination to July 1, 2012. Augmentation for all members, regardless of hire date, changed to 2.00 percent as of July 1, 2012 for the portion of benefit deferral which occurs after June 30, 2012 to June 30, 2019. After June 30, 2019, benefits are not augmented.

## PRE-RETIREMENT SURVIVOR BENEFIT (Family Benefit)

### *Eligibility*

Active member with five years of Accredited Service.

### *Benefit*

- Children's Benefit: 25 percent of the maximum Bachelor of Arts salary for the year in which the member died for each eligible child up to a maximum of two. Benefits are paid until the child attains age 18, or 22 for full-time students.
- Spousal Benefit: 15 percent of the maximum Bachelor of Arts salary for an eligible spouse who has legal custody of an eligible child. Spousal benefits cease when the spouse remarries, dies, or elects the regular survivor benefit. Electing the regular survivor benefit does not disqualify the child from receiving the family benefit.

# Summary of Benefit Provisions for Basic Members as of June 30, 2020

## **SURVIVOR BENEFIT (Active or Retired Member)**

### ***Eligibility***

Active member or retired member with five years of Accredited Service. A surviving spouse must have been married to the member for three years at the earlier of death or retirement.

### ***Benefit***

Retirement benefit earned at the time of death or retirement, whichever is earlier, reduced by the use of 100 percent joint survivorship tables, based on the ages of the member and survivor at the time of retirement.

## **REFUND OF CONTRIBUTIONS**

### ***Eligibility***

Termination or death where no annuity is payable.

### ***Benefit***

Member contributions with 6.00 percent interest accrued through June 30, 2011, 4.00 percent interest accrued through June 30, 2018, and 3.00 percent interest thereafter.

## **REEMPLOYED ANNUITANTS**

The School District shall make the regular employer contribution and additional employer contribution, plus a supplemental contribution equal to 2.5 percent of salary, on behalf of any retired member who is reemployed by the School District. Reemployed annuitants do not accrue additional benefits.

## **NORMAL FORM OF RETIREMENT BENEFITS**

Unreduced annuity payments made until the death of the member, with a 100 percent Joint & Survivor adjusted pension payable to the surviving beneficiary.

## **BENEFIT INCREASES**

2020: 0.00 percent  
2021 and thereafter: 1.00 percent

For retirements on and after July 1, 2024, the first benefit increase is delayed until the retiree reaches Normal Retirement Age (not applicable to Rule of 90 retirees, Rule of 62/30 retirees, disability benefit recipients, or survivors).



# Summary of Benefit Provisions for Basic Members as of June 30, 2020

## CHANGES IN PLAN PROVISIONS

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

# Summary of Benefit Provisions for Coordinated Members as of June 30, 2020

## STATUTORY CONTRIBUTIONS

Statutory contribution rates for members and their employers are shown as a percent-of-pay below.

<u>Contribution after June 30,</u>	<u>Member</u>	<u>Employer Regular</u>	<u>Employer Additional</u>
2019	7.50%	8.170%	3.84%
2020	7.50%	8.380%	3.84%
2021	7.50%	8.590%	3.84%
2022	7.75%	8.800%	3.84%
2023	7.75%	9.000%	3.84%

## SUPPLEMENTAL CONTRIBUTIONS

1996 legislation provides for a variable amortization aid contribution paid annually on July 15. The actual contribution during the past fiscal year was \$838,000.

Annual supplemental contributions of \$14,827,000 will be contributed by the State of Minnesota each October 1. The contributions will continue until the plan is 100% funded or until June 30, 2048, whichever occurs earlier.

## PARTICIPANTS

Professional educators in the public schools of the City of St. Paul, excluding charter schools, whose position requires a license from the Minnesota Professional Educator Licensing and Standards Board, and who are covered under the Social Security Act and make contributions to the St. Paul Teachers' Retirement Fund Association, are covered under the Coordinated Plan.

## ALLOWABLE SERVICE

Service earned as a licensed educator in the St. Paul Public Schools, in the St. Paul College, or in certain charter schools, or as an employee of the Association. Also includes service credited after receipt of payment as required, for licensed educators on leave. Service is granted on a proportional basis for part-time teachers.



# Summary of Benefit Provisions for Coordinated Members as of June 30, 2020

## **SALARY**

Total compensation excluding lump sum payments for unused leave at termination and employer-paid insurance coverage.

## **AVERAGE SALARY**

Average of the highest five successive years of salary while making contributions. In cases where the Allowable Service is less than five years, Average Salary is based on the Allowable Service years.

## **NORMAL RETIREMENT BENEFIT**

### ***Eligibility***

Three years of Allowable Service. The eligibility age is 65 for those hired before July 1, 1989 and the earlier of eligibility for full Social Security retirement benefits to a maximum of age 66 for those hired on or after July 1, 1989. A Proportionate Retirement Annuity is available at Normal Retirement Age with one year of Allowable Service.

### ***Benefit***

1.70 percent of Average Salary for each year of Allowable Service rendered before July 1, 2015 and 1.90 percent of Average Salary for each year of Allowable Service rendered after June 30, 2015.

# Summary of Benefit Provisions for Coordinated Members as of June 30, 2020

## EARLY RETIREMENT BENEFIT

### *Eligibility*

Attainment of age 55 and 3 years of Allowable Service.

### *Benefit*

Members hired before July 1, 1989 are eligible for the greater of the following benefits. Members hired after July 1, 1989 are eligible for the benefits shown in item (b):

- a) For the first 10 years of Allowable Service, 1.20 percent of Average Salary for each year of Allowable Service rendered prior to July 1, 2015, plus 1.40 percent of Average Salary for each year of Allowable Service rendered after June 30, 2015. Additionally, for each subsequent year of Allowable Service in excess of 10 years, 1.70 percent of Average Salary for each year rendered prior to July 1, 2015, plus 1.90 percent of Average Salary for each year rendered after June 30, 2015. There is a reduction of 0.25 percent for each month the member is under age 65, or under age 62 with 30 years of Allowable Service. No reduction applies if the age plus years of service totals at least 90.
- b) 1.70 percent of Average Salary per year of Allowable Service rendered before July 1, 2015 and 1.90 percent of Average Salary for each year of service rendered after June 30, 2015 reduced for each month the member is under the Normal Retirement Age using linear interpolation of the factors in the tables listed below. The ultimate factors for retirements on or after July 1, 2024 will be phased in over a sixty-month period starting July 1, 2019.

Normal Retirement Age: Age at Retirement	<u>UNDER AGE 62 OR LESS THAN 30 YEARS OF SERVICE</u>				<u>AGE 62 OR OLDER WITH 30 YEARS OF SERVICE</u>	
	<u>RETIREMENTS PRIOR TO JULY 1, 2019</u>		<u>RETIREMENTS ON OR AFTER JULY 1, 2024</u>			
	<u>65</u>	<u>66</u>	<u>65</u>	<u>66</u>	<u>65</u>	<u>66</u>
55	0.5376	0.4592	0.4200	0.3500		
56	0.5745	0.4992	0.4600	0.3900		
57	0.6092	0.5370	0.5000	0.4300		
58	0.6419	0.5726	0.5400	0.4700		
59	0.6726	0.6062	0.5800	0.5100		
60	0.7354	0.6726	0.6500	0.5800		
61	0.7947	0.7354	0.7200	0.6500		
62	0.8507	0.7947	0.7900	0.7200	0.8831	0.8389
63	0.9035	0.8507	0.8600	0.7900	0.9246	0.8831
64	0.9533	0.9035	0.9300	0.8600	0.9635	0.9246
65	1.0000	0.9533	1.0000	0.9300	1.0000	0.9635
66		1.0000		1.0000		1.0000

# Summary of Benefit Provisions for Coordinated Members as of June 30, 2020

## DISABILITY RETIREMENT BENEFIT

### *Eligibility*

Total and permanent disablement and three years of Allowable Service with service earned within the current fiscal year and at least two years of Allowable Service since the last interruption in service.

### *Benefit*

Calculated as a normal retirement benefit payable for life without reduction for early commencement. At normal retirement age, the benefit converts from a disability benefit to a retirement benefit. The disability benefit is reduced by any Workers' Compensation benefits payable.

## DEFERRED RETIREMENT BENEFIT

### *Eligibility*

Three years of Allowable Service.

### *Benefit*

Benefit computed under law in effect at termination and payable as a normal or early retirement benefit. For members hired on or before June 30, 2006, the benefit is augmented at 3.00 percent compounded annually from the 1<sup>st</sup> of the month following termination until the January 1<sup>st</sup> after turning age 55 and then augmented at 5.00 percent compounded annually from that date to July 1, 2012. For members hired after June 30, 2006, the benefit is augmented at 2.50 percent compounded annually from the 1<sup>st</sup> of the month following termination to July 1, 2012. Augmentation for all members, regardless of hire date, changed to 2.00 percent as of July 1, 2012 for the portion of benefit deferral which occurs after June 30, 2012 to June 30, 2019. After June 30, 2019, benefits are not augmented.

## SURVIVOR BENEFIT (Active Members)

### *Eligibility*

Active member with three years of Allowable service. A surviving spouse is defined as the person legally married to the member at the time of death. If none, a dependent child who is the legal child of the member, who is less than 20 years of age and unmarried.

### *Benefit*

Retirement benefit earned at the time of death with choices for either a reduced for 100 percent joint survivorship, or 5-, 10-, 15-, or 20-year term certain. The benefit is available immediately upon application. Actuarial reductions assuming 2.5 percent augmentation for the calculation of the survivorship portion of a 100 percent joint and survivor benefit are actuarially determined based on the member's and survivor's ages at the death of the member.

Early retirement reductions apply to the survivor benefit based on the member's age when deceased. If the deceased member had not yet attained age 55 at time of death, the additional early retirement reduction from age 55 to the age of the member at death applies at only one-half of the actuarial rate.



# Summary of Benefit Provisions for Coordinated Members as of June 30, 2020

## REFUND OF CONTRIBUTIONS

### *Eligibility*

Termination or death where no annuity is payable or a refund of contributions is chosen in lieu of an annuity.

### *Benefit*

Member contributions with 6.00 percent interest accrued through June 30, 2011, 4.00 percent interest accrued through June 30, 2018, and 3.00 percent interest thereafter.

## REEMPLOYED ANNUITANTS

The School District shall make the regular employer contribution and additional employer contribution, plus a supplemental contribution equal to 2.5 percent of salary, on behalf of any retired member who is reemployed by the School District. Reemployed annuitants do not accrue additional benefits.

## NORMAL FORM OF RETIREMENT BENEFITS

Straight life annuity. Actuarially equivalent options are available to provide post-retirement beneficiary or survivor benefits.

## BENEFIT INCREASES

2020: 0.00 percent  
2021 and thereafter: 1.00 percent

For retirements on and after July 1, 2024, the first benefit increase is delayed until the retiree reaches Normal Retirement Age (not applicable to Rule of 90 retirees, Rule of 62/30 retirees, disability benefit recipients, or survivors).

## CHANGES IN PLAN PROVISIONS

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



## SECTION F

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### ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

# Actuarial Cost Method and Actuarial Assumptions

## I. Actuarial Cost Method

Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using an Individual Entry-Age Actuarial Cost Method having the following characteristics:

- 1) The annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement; and
- 2) Each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Actuarial gains/(losses), as they occur, reduce (increase) the Unfunded Actuarial Accrued Liability.

## II. Current Actuarial Assumptions

The assumptions were last updated for the July 1, 2018 valuation. Assumptions are based on an experience study for the five-year period of July 1, 2011 to June 30, 2016, as well as a legislated change to the investment return assumption effective July 1, 2018. Note that the significant plan changes effective July 1, 2018 may ultimately result in behavior changes not anticipated in the actuarial assumptions.

### A. Demographic Assumptions

Mortality:

1. Healthy and Disabled Annuitant Mortality:
  - a. Male: RP-2014 Healthy Annuitant Mortality Table for males adjusted for white collar and projected with Scale MP-2019 from 2006
  - b. Female: RP-2014 Healthy Annuitant Mortality Table for females adjusted for white collar and projected with Scale MP-2019 from 2006, set back 2 years
2. Employee Mortality:
  - a. Male: RP-2014 Employee Mortality Table for males adjusted for white collar and projected with Scale MP-2019 from 2006
  - b. Female: RP-2014 Employee Mortality Table for females adjusted for white collar and projected with Scale MP-2019 from 2006



# Actuarial Cost Method and Actuarial Assumptions

*Deaths Expressed as the Number of Occurrences per 10,000:*

<u>Age in 2020</u>	<u>Post-Retirement Mortality</u>	
	<u>Male</u>	<u>Female</u>
55	40	26
56	42	27
57	45	29
58	48	32
59	52	34
60	56	37
61	60	39
62	65	43
63	70	47
64	76	52
65	82	57
66	89	62
67	97	68
68	106	74
69	116	81
70	128	88
71	142	97
72	158	107
73	176	119
74	196	132
75	219	147
76	245	164
77	274	183
78	308	204
79	346	229
80	390	257
81	440	289
82	497	325
83	563	367
84	638	414
85	724	468
86	821	529
87	930	599
88	1053	678
89	1190	768
90	1342	869
91	1503	981
92	1672	1107
93	1843	1245
94	2016	1392

# Actuarial Cost Method and Actuarial Assumptions

Deaths Expressed as the Number of Occurrences per 10,000:

Age in <u>2020</u>	Pre-Retirement Mortality	
	<u>Male</u>	<u>Female</u>
25	4	2
26	4	2
27	4	2
28	4	2
29	4	2
30	5	2
31	5	3
32	5	3
33	5	3
34	5	3
35	5	3
36	5	3
37	6	4
38	6	4
39	6	4
40	6	4
41	6	5
42	6	5
43	7	5
44	7	6
45	8	6
46	8	6
47	9	7
48	10	8
49	11	8
50	12	9
51	14	10
52	15	11
53	16	12
54	18	14
55	20	15
56	22	17
57	25	18
58	28	20
59	31	22
60	35	24
61	40	25
62	45	27
63	50	29
64	56	31

# Actuarial Cost Method and Actuarial Assumptions

Rates of Disability:

*Disability Expressed as the Number of Occurrences per 10,000:*

<u>Age</u>	<u>Disability</u>	<u>Age</u>	<u>Disability</u>
20	1	45	4
21	1	46	4
22	1	47	4
23	1	48	4
24	1	49	4
25	1	50	9
26	1	51	9
27	1	52	9
28	1	53	9
29	1	54	9
30	2	55	17
31	2	56	17
32	2	57	17
33	2	58	17
34	2	59	17
35	2	60	35
36	2	61	35
37	2	62	35
38	2	63	35
39	2	64	35
40	3		
41	3		
42	3		
43	3		
44	3		

# Actuarial Cost Method and Actuarial Assumptions

## Rates of Termination:

Year	Number of Terminations per 1,000 Active Members	
	Male	Female
1	400	400
2	260	220
3	160	150
4	110	120
5	80	100
6	50	85
7	48	70
8	45	55
9	43	45
10	40	40
11	38	38
12	35	35
13	33	30
14	30	25
15 & Over	25	20

## Rates of Retirement:

*Retirements Expressed as the Number of Occurrences per 10,000:*

Age	Male Coordinated Members Eligible for Rule of 90 Provision	Female Coordinated Members Eligible for Rule of 90 Provision	Male Coordinated Members Not Eligible for Rule of 90 Provision	Female Coordinated Members Not Eligible for Rule of 90 Provision
<55	2,500	2,500	0	0
55	2,500	2,500	900	500
56	2,500	2,500	700	500
57	2,500	2,500	700	500
58	2,500	2,500	700	600
59	2,500	3,000	700	600
60	2,500	3,000	1,200	900
61	2,500	3,000	1,200	1,100
62	4,500	3,000	2,500	2,000
63	3,500	3,000	2,800	2,300
64	2,500	3,000	2,800	2,600
65	10,000	10,000	3,000*	4,500*
66	10,000	10,000	3,000	4,300
67	10,000	10,000	3,500	3,800
68	10,000	10,000	4,000	3,800
69	10,000	10,000	4,500	3,000
70 & Over	10,000	10,000	10,000	10,000

*\*2,800 for male members and 3,000 for female members hired after June 30, 1989 with a Normal Retirement Age equal to 66.*

# Actuarial Cost Method and Actuarial Assumptions

## B. Economic Assumptions

Investment Return Rate:	7.50%
Single Discount Rate:	7.50%
Price Inflation:	2.50% per year
Wage Inflation:	3.00% per year
Future Salary Increases:	Service-based rates shown below:

### Annual Salary Increases

Ultimate Rate of Annual Salary Increases		Ultimate Rate of Annual Salary Increases	
Year	Increases	Year	Increases
1	9.00%	21	3.40%
2	8.00%	22	3.20%
3	7.00%	23 & Over	3.00%
4	6.80%		
5	6.60%		
6	6.40%		
7	6.20%		
8	6.00%		
9	5.75%		
10	5.50%		
11	5.25%		
12	5.00%		
13	4.75%		
14	4.50%		
15	4.25%		
16	4.00%		
17	3.90%		
18	3.80%		
19	3.70%		
20	3.60%		

Asset Value: The actuarial value of assets is smoothed by using a five-year average market value.

# Actuarial Cost Method and Actuarial Assumptions

## C. Other Assumptions

Marital Status:	It is assumed that 75% of male members and 60% of female members have an eligible spouse. The male spouse is assumed to be two years older than the female spouse. Married members are assumed to have two dependent children.
Deferred Benefit Commencement:	Basic Plan members who terminate vested are assumed to commence benefits at age 61. Coordinated Plan members are assumed to commence benefits at age 62. If the member is already past the assumed deferral age, the member is assumed to commence benefits one year from the valuation date.
Administrative Expenses:	Prior year administrative expenses (excluding investment expenses) are expressed as a percentage-of-payroll and then applied to projected payroll.
Refund of Contributions:	All employees withdrawing after becoming eligible for a deferred benefit take the larger of their contributions accumulated with interest or the value of their deferred benefit. Account balances for deferred members accumulate interest until the assumed benefit commencement date and are discounted back to the valuation date.
Allowance for Combined Service Annuity:	20.0% load on liabilities for former, vested members. 9.0% load on liabilities for former, non-vested members.
Missing Salary and Salary Minimums:	Active members with reported salaries of \$100 or less were assumed to have the average non-zero active salary. Active members with salaries less than those reported at the prior valuation date are valued using their prior salary amount. Active members who have been hired within one year of the valuation date have had their pay annualized by dividing by months of service credited, not to exceed the average non-zero active salary. For members on leave of absence at valuation date who were not on leave at the prior valuation date, the prior year's valuation pay was used.
Missing Data for Deferred Vested Members:	Deferred vested members without a reported benefit and without salary information were assumed to have a final average salary of \$40,000.
Decrement Timing:	Retirement and Termination: end of valuation year – consistent with retirements and terminations occurring at the end of the school year.  Death and Disability: middle of valuation year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

## Actuarial Cost Method and Actuarial Assumptions

Service Credit Accruals:	It is assumed that members accrue one year of service credit per year. Exact fractional service is used to determine the amount of benefit payable.
Supplemental Contributions:	<p>1996 legislation provides for a variable amortization aid contribution paid annually on July 15. We assumed the annual amortization aid contribution will equal \$838,000, which was the actual contribution for the most recent fiscal year. Additionally, annual supplemental contributions equal to \$14,827,000 are scheduled to be paid each October 1.</p> <p>The contributions described herein will continue until the plan is 100% funded or until June 30, 2048, whichever occurs earlier.</p>
Projected Annual Payroll Calculation:	The census data as of July 1, 2020 reflects retirements and terminations occurring during the months of May and June; however, it does not necessarily reflect the replacements hired to fill their positions who may have hire dates in August and September. We assumed that May and June retirements are replaced by members coming in at the B.A. entry salary level of \$47,271; the Projected Annual Payroll for the fiscal year ending June 30, 2021 includes this replacement salary amount.
Changes in Actuarial Assumptions Since the Prior Valuation:	The mortality improvement scale was updated from MP-2018 to MP-2019.

## SECTION G

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### CALCULATION OF THE SINGLE DISCOUNT RATE



## Calculation of the Single Discount Rate

GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a municipal bond rate is required, as described in the following paragraph. The plan is projected to have sufficient assets to pay all benefits.

The Single Discount Rate (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.50%; the municipal bond rate is 2.45%; and the resulting Single Discount Rate is 7.50%.

The tables in this section provide background for the development of the Single Discount Rate.

The **Projection of Contributions** table shows the development of expected contributions in future years. Normal Cost contributions for future hires are not included (nor are their liabilities).

The **Projection of Plan Fiduciary Net Position** table shows the development of expected asset levels in future years.

The **Present Values of Projected Benefit Payments** table shows the development of the SDR. It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total using the SDR.

# Single Discount Rate Development Projection of Contributions (Dollars in Thousands)

Year	Payroll			Projected Contributions				
	Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Employer Contributions on Future Payroll toward Current UAL*	Supplemental Contributions	Total Contributions
0	\$ 274,667	\$ -	\$ 274,667					
1	283,128	-	283,128	\$ 21,235	\$ 34,598	\$ -	\$ 15,665	\$ 71,498
2	272,700	18,922	291,622	20,453	33,897	2,153	15,665	72,168
3	262,717	37,654	300,371	20,361	33,207	4,458	15,665	73,691
4	254,430	54,952	309,382	19,718	32,669	6,616	15,665	74,668
5	247,052	71,611	318,663	19,147	31,721	8,622	15,665	75,155
6	240,155	88,068	328,223	18,612	30,836	10,603	15,665	75,716
7	233,572	104,498	338,070	18,102	29,991	12,582	15,665	76,340
8	227,130	121,082	348,212	17,603	29,164	14,578	15,665	77,010
9	220,605	138,053	358,658	17,097	28,326	16,622	15,665	77,710
10	213,739	155,679	369,418	16,565	27,444	18,744	15,665	78,418
11	206,337	174,163	380,500	15,991	26,494	20,969	15,665	79,119
12	198,429	193,486	391,915	15,378	25,478	23,296	15,665	79,817
13	190,136	213,537	403,673	14,736	24,414	25,710	15,665	80,525
14	181,457	234,326	415,783	14,063	23,299	28,213	15,665	81,240
15	172,547	255,710	428,257	13,372	22,155	30,787	15,665	81,979
16	163,316	277,788	441,104	12,657	20,970	33,446	15,665	82,738
17	153,906	300,431	454,337	11,928	19,761	36,172	15,665	83,526
18	144,412	323,556	467,968	11,192	18,543	38,956	15,665	84,356
19	134,942	347,065	482,007	10,458	17,327	41,787	15,665	85,237
20	125,647	370,820	496,467	9,738	16,133	44,647	15,665	86,183
21	116,405	394,956	511,361	9,021	14,946	47,553	15,665	87,185
22	107,229	419,473	526,702	8,310	13,768	50,505	15,665	88,248
23	98,180	444,323	542,503	7,609	12,606	53,496	15,665	89,376
24	89,209	469,569	558,778	6,914	11,454	56,536	15,665	90,569
25	80,446	495,095	575,541	6,235	10,329	59,609	15,665	91,838
26	71,915	520,892	592,807	5,573	9,234	62,715	15,665	93,187
27	63,765	546,827	610,592	4,942	8,187	65,838	15,665	94,632
28	55,904	573,005	628,909	4,333	7,178	68,990	15,665	96,166
29	48,497	599,280	647,777	3,758	6,227	72,153	-	82,138
30	41,574	625,636	667,210	3,222	5,338	75,327	-	83,887
31	35,190	652,036	687,226	2,727	4,518	78,505	-	85,750
32	29,236	678,607	707,843	2,266	3,754	81,704	-	87,724
33	23,811	705,267	729,078	1,845	3,057	84,914	-	89,816
34	19,003	731,948	750,951	1,473	2,440	88,126	-	92,039
35	14,809	758,670	773,479	1,148	1,901	91,344	-	94,393
36	11,236	785,447	796,683	871	1,443	94,568	-	96,882
37	8,229	812,355	820,584	638	1,057	97,808	-	99,503
38	5,861	839,340	845,201	454	753	101,057	-	102,264
39	4,025	866,533	870,558	312	517	104,331	-	105,160
40	2,630	894,044	896,674	204	338	107,643	-	108,185
41	1,642	921,932	923,574	127	211	111,001	-	111,339
42	977	950,305	951,282	76	125	114,417	-	114,618
43	540	979,280	979,820	42	69	117,905	-	118,016
44	285	1,008,930	1,009,215	22	37	121,475	-	121,534
45	141	1,039,350	1,039,491	11	18	125,138	-	125,167
46	58	1,070,618	1,070,676	5	7	128,902	-	128,914
47	14	1,102,782	1,102,796	1	2	132,775	-	132,778
48	-	1,135,880	1,135,880	-	-	136,760	-	136,760
49	-	1,169,957	1,169,957	-	-	140,863	-	140,863
50	-	1,205,055	1,205,055	-	-	145,089	-	145,089

\* Contributions related to future employees in excess of normal cost and expenses of 8.55% of pay.

For purposes of this projection, based on GASB guidance, we assumed the statutory contribution rates would continue after the plan becomes fully funded. If we reflected a decrease in contribution rates due to full funding, future assets and contributions would be less than what is shown herein.



# Single Discount Rate Development

## Projection of Contributions (Concluded) (Dollars in Thousands)

Year	Payroll			Projected Contributions				
	Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Employer Contributions on Future Payroll toward Current UAL*	Supplemental Contributions	Total Contributions
51	\$ -	\$ 1,241,207	\$ 1,241,207	\$ -	\$ -	\$ 149,441	\$ -	\$ 149,441
52	-	1,278,443	1,278,443	-	-	153,925	-	153,925
53	-	1,316,796	1,316,796	-	-	158,542	-	158,542
54	-	1,356,300	1,356,300	-	-	163,299	-	163,299
55	-	1,396,989	1,396,989	-	-	168,198	-	168,198
56	-	1,438,899	1,438,899	-	-	173,243	-	173,243
57	-	1,482,066	1,482,066	-	-	178,441	-	178,441
58	-	1,526,528	1,526,528	-	-	183,794	-	183,794
59	-	1,572,324	1,572,324	-	-	189,308	-	189,308
60	-	1,619,493	1,619,493	-	-	194,987	-	194,987
61	-	1,668,078	1,668,078	-	-	200,837	-	200,837
62	-	1,718,121	1,718,121	-	-	206,862	-	206,862
63	-	1,769,664	1,769,664	-	-	213,068	-	213,068
64	-	1,822,754	1,822,754	-	-	219,460	-	219,460
65	-	1,877,437	1,877,437	-	-	226,043	-	226,043
66	-	1,933,760	1,933,760	-	-	232,825	-	232,825
67	-	1,991,773	1,991,773	-	-	239,809	-	239,809
68	-	2,051,526	2,051,526	-	-	247,004	-	247,004
69	-	2,113,072	2,113,072	-	-	254,414	-	254,414
70	-	2,176,464	2,176,464	-	-	262,046	-	262,046
71	-	2,241,758	2,241,758	-	-	269,908	-	269,908
72	-	2,309,010	2,309,010	-	-	278,005	-	278,005
73	-	2,378,281	2,378,281	-	-	286,345	-	286,345
74	-	2,449,629	2,449,629	-	-	294,935	-	294,935
75	-	2,523,118	2,523,118	-	-	303,783	-	303,783
76	-	2,598,812	2,598,812	-	-	312,897	-	312,897
77	-	2,676,776	2,676,776	-	-	322,284	-	322,284
78	-	2,757,079	2,757,079	-	-	331,952	-	331,952
79	-	2,839,792	2,839,792	-	-	341,911	-	341,911
80	-	2,924,985	2,924,985	-	-	352,168	-	352,168
81	-	3,012,735	3,012,735	-	-	362,733	-	362,733
82	-	3,103,117	3,103,117	-	-	373,615	-	373,615
83	-	3,196,210	3,196,210	-	-	384,824	-	384,824
84	-	3,292,097	3,292,097	-	-	396,368	-	396,368
85	-	3,390,860	3,390,860	-	-	408,260	-	408,260
86	-	3,492,585	3,492,585	-	-	420,507	-	420,507
87	-	3,597,363	3,597,363	-	-	433,123	-	433,123
88	-	3,705,284	3,705,284	-	-	446,116	-	446,116
89	-	3,816,442	3,816,442	-	-	459,500	-	459,500
90	-	3,930,936	3,930,936	-	-	473,285	-	473,285
91	-	4,048,864	4,048,864	-	-	487,483	-	487,483
92	-	4,170,330	4,170,330	-	-	502,108	-	502,108
93	-	4,295,440	4,295,440	-	-	517,171	-	517,171
94	-	4,424,303	4,424,303	-	-	532,686	-	532,686
95	-	4,557,032	4,557,032	-	-	548,667	-	548,667
96	-	4,693,743	4,693,743	-	-	565,127	-	565,127
97	-	4,834,555	4,834,555	-	-	582,080	-	582,080
98	-	4,979,592	4,979,592	-	-	599,543	-	599,543
99	-	5,128,980	5,128,980	-	-	617,529	-	617,529
100	-	5,282,849	5,282,849	-	-	636,055	-	636,055

\* Contributions related to future employees in excess of normal cost and expenses of 8.55% of pay.

For purposes of this projection, based on GASB guidance, we assumed the statutory contribution rates would continue after the plan becomes fully funded. If we reflected a decrease in contribution rates due to full funding, future assets and contributions would be less than what is shown herein.



# Single Discount Rate Development

## Projection of Plan Fiduciary Net Position (Dollars in Thousands)

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.50%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
1	\$ 1,037,613	\$ 71,498	\$ 118,532	\$ 793	\$ 76,060	\$ 1,065,846
2	1,065,846	72,168	122,171	764	78,069	1,093,148
3	1,093,148	73,691	124,443	736	80,090	1,121,750
4	1,121,750	74,668	126,448	712	82,198	1,151,456
5	1,151,456	75,155	128,491	692	84,370	1,181,798
6	1,181,798	75,716	130,277	672	86,601	1,213,166
7	1,213,166	76,340	131,838	654	88,920	1,245,934
8	1,245,934	77,010	133,117	636	91,356	1,280,547
9	1,280,547	77,710	134,558	618	93,925	1,317,006
10	1,317,006	78,418	136,047	598	96,631	1,355,410
11	1,355,410	79,119	137,795	578	99,474	1,395,630
12	1,395,630	79,817	139,657	556	102,448	1,437,682
13	1,437,682	80,525	141,815	532	105,549	1,481,409
14	1,481,409	81,240	143,945	508	108,778	1,526,974
15	1,526,974	81,979	145,968	483	112,149	1,574,651
16	1,574,651	82,738	148,087	457	115,675	1,624,520
17	1,624,520	83,526	150,194	431	119,368	1,676,789
18	1,676,789	84,356	152,307	404	123,242	1,731,676
19	1,731,676	85,237	154,251	378	127,320	1,789,604
20	1,789,604	86,183	155,905	352	131,639	1,851,169
21	1,851,169	87,185	157,548	326	136,234	1,916,714
22	1,916,714	88,248	158,936	300	141,139	1,986,865
23	1,986,865	89,376	160,342	275	146,391	2,062,015
24	2,062,015	90,569	161,897	250	152,015	2,142,452
25	2,142,452	91,838	163,215	225	158,047	2,228,897
26	2,228,897	93,187	164,376	201	164,538	2,322,045
27	2,322,045	94,632	165,446	179	171,539	2,422,591
28	2,422,591	96,166	166,506	157	179,098	2,531,192
29	2,531,192	82,138	167,545	136	186,689	2,632,338
30	2,632,338	83,887	168,178	116	194,317	2,742,248
31	2,742,248	85,750	168,555	99	202,615	2,861,959
32	2,861,959	87,724	168,949	82	211,653	2,992,305
33	2,992,305	89,816	169,130	67	221,499	3,134,423
34	3,134,423	92,039	168,757	53	232,255	3,289,907
35	3,289,907	94,393	167,886	41	244,035	3,460,408
36	3,460,408	96,882	166,432	31	256,968	3,647,795
37	3,647,795	99,503	164,526	23	271,189	3,853,938
38	3,853,938	102,264	162,047	16	286,843	4,080,982
39	4,080,982	105,160	159,057	11	304,088	4,331,162
40	4,331,162	108,185	155,552	7	323,092	4,606,880
41	4,606,880	111,339	151,564	5	344,034	4,910,684
42	4,910,684	114,618	147,257	3	367,099	5,245,141
43	5,245,141	118,016	142,693	2	392,476	5,612,938
44	5,612,938	121,534	137,905	1	420,367	6,016,933
45	6,016,933	125,167	132,946	-	450,983	6,460,137
46	6,460,137	128,914	127,860	-	484,548	6,945,739
47	6,945,739	132,778	122,672	-	521,302	7,477,147
48	7,477,147	136,760	117,397	-	561,498	8,058,008
49	8,058,008	140,863	112,057	-	605,411	8,692,225
50	8,692,225	145,089	106,676	-	653,331	9,383,969

For purposes of this projection, based on GASB guidance, we assumed the statutory contribution rates would continue after the plan becomes fully funded. If we reflected a decrease in contribution rates due to full funding, future assets and contributions would be less than what is shown herein.



# Single Discount Rate Development

## Projection of Plan Fiduciary Net Position (Concluded)

### (Dollars in Thousands)

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.50%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
51	\$ 9,383,969	\$ 149,441	\$ 101,267	\$ -	\$ 705,571	\$ 10,137,714
52	10,137,714	153,925	95,844	-	762,467	10,958,262
53	10,958,262	158,542	90,422	-	824,377	11,850,759
54	11,850,759	163,299	85,018	-	891,689	12,820,729
55	12,820,729	168,198	79,650	-	964,814	13,874,091
56	13,874,091	173,243	74,336	-	1,044,198	15,017,196
57	15,017,196	178,441	69,093	-	1,130,316	16,256,860
58	16,256,860	183,794	63,939	-	1,223,677	17,600,392
59	17,600,392	189,308	58,893	-	1,324,831	19,055,638
60	19,055,638	194,987	53,974	-	1,434,365	20,631,016
61	20,631,016	200,837	49,199	-	1,552,909	22,335,563
62	22,335,563	206,862	44,588	-	1,681,142	24,178,979
63	24,178,979	213,068	40,160	-	1,819,789	26,171,676
64	26,171,676	219,460	35,932	-	1,969,633	28,324,837
65	28,324,837	226,043	31,920	-	2,131,510	30,650,470
66	30,650,470	232,825	28,141	-	2,306,321	33,161,475
67	33,161,475	239,809	24,607	-	2,495,034	35,871,711
68	35,871,711	247,004	21,327	-	2,698,687	38,796,075
69	38,796,075	254,414	18,309	-	2,918,399	41,950,579
70	41,950,579	262,046	15,558	-	3,155,369	45,352,436
71	45,352,436	269,908	13,075	-	3,410,889	49,020,158
72	49,020,158	278,005	10,858	-	3,686,348	52,973,653
73	52,973,653	286,345	8,903	-	3,983,239	57,234,334
74	57,234,334	294,935	7,200	-	4,303,169	61,825,238
75	61,825,238	303,783	5,738	-	4,647,867	66,771,150
76	66,771,150	312,897	4,501	-	5,019,191	72,098,737
77	72,098,737	322,284	3,472	-	5,419,144	77,836,693
78	77,836,693	331,952	2,631	-	5,849,877	84,015,891
79	84,015,891	341,911	1,956	-	6,313,709	90,669,555
80	90,669,555	352,168	1,425	-	6,813,131	97,833,429
81	97,833,429	362,733	1,017	-	7,350,825	105,545,970
82	105,545,970	373,615	709	-	7,929,678	113,848,554
83	113,848,554	384,824	483	-	8,552,793	122,785,688
84	122,785,688	396,368	321	-	9,223,509	132,405,244
85	132,405,244	408,260	208	-	9,945,418	142,758,714
86	142,758,714	420,507	131	-	10,722,382	153,901,472
87	153,901,472	433,123	80	-	11,558,555	165,893,070
88	165,893,070	446,116	48	-	12,458,405	178,797,543
89	178,797,543	459,500	28	-	13,426,734	192,683,749
90	192,683,749	473,285	16	-	14,468,707	207,625,725
91	207,625,725	487,483	9	-	15,589,878	223,703,077
92	223,703,077	502,108	5	-	16,796,218	241,001,398
93	241,001,398	517,171	3	-	18,094,147	259,612,713
94	259,612,713	532,686	2	-	19,490,567	279,635,964
95	279,635,964	548,667	1	-	20,992,899	301,177,529
96	301,177,529	565,127	-	-	22,609,123	324,351,779
97	324,351,779	582,080	-	-	24,347,816	349,281,675
98	349,281,675	599,543	-	-	26,218,201	376,099,419
99	376,099,419	617,529	-	-	28,230,194	404,947,142
100	404,947,142	636,055	-	-	30,394,456	435,977,653

For purposes of this projection, based on GASB guidance, we assumed the statutory contribution rates would continue after the plan becomes fully funded. If we reflected a decrease in contribution rates due to full funding, future assets and contributions would be less than what is shown herein.



# Single Discount Rate Development

## Present Values of Projected Benefits (Dollars in Thousands)

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v <sup>a</sup> ((a)-.5)	(g)=(e)*vf <sup>a</sup> ((a)-.5)	(h)=(c)/(1+sdr) <sup>a</sup> ((a)-.5)
1	\$ 1,037,613	\$ 118,532	\$ 118,532	\$ -	\$ 114,323	\$ -	\$ 114,323
2	1,065,846	122,171	122,171	-	109,611	-	109,611
3	1,093,147	124,443	124,443	-	103,860	-	103,860
4	1,121,751	126,448	126,448	-	98,171	-	98,171
5	1,151,457	128,491	128,491	-	92,797	-	92,797
6	1,181,798	130,277	130,277	-	87,523	-	87,523
7	1,213,166	131,838	131,838	-	82,392	-	82,392
8	1,245,932	133,117	133,117	-	77,387	-	77,387
9	1,280,544	134,558	134,558	-	72,768	-	72,768
10	1,317,002	136,047	136,047	-	68,440	-	68,440
11	1,355,405	137,795	137,795	-	64,483	-	64,483
12	1,395,624	139,657	139,657	-	60,795	-	60,795
13	1,437,677	141,815	141,815	-	57,427	-	57,427
14	1,481,403	143,945	143,945	-	54,223	-	54,223
15	1,526,967	145,968	145,968	-	51,149	-	51,149
16	1,574,644	148,087	148,087	-	48,271	-	48,271
17	1,624,513	150,194	150,194	-	45,542	-	45,542
18	1,676,782	152,307	152,307	-	42,961	-	42,961
19	1,731,668	154,251	154,251	-	40,474	-	40,474
20	1,789,595	155,905	155,905	-	38,054	-	38,054
21	1,851,159	157,548	157,548	-	35,772	-	35,772
22	1,916,705	158,936	158,936	-	33,569	-	33,569
23	1,986,855	160,342	160,342	-	31,503	-	31,503
24	2,062,005	161,897	161,897	-	29,590	-	29,590
25	2,142,442	163,215	163,215	-	27,749	-	27,749
26	2,228,887	164,376	164,376	-	25,997	-	25,997
27	2,322,036	165,446	165,446	-	24,341	-	24,341
28	2,422,582	166,506	166,506	-	22,788	-	22,788
29	2,531,183	167,545	167,545	-	21,330	-	21,330
30	2,632,330	168,178	168,178	-	19,917	-	19,917
31	2,742,239	168,555	168,555	-	18,569	-	18,569
32	2,861,952	168,949	168,949	-	17,314	-	17,314
33	2,992,298	169,130	169,130	-	16,123	-	16,123
34	3,134,418	168,757	168,757	-	14,965	-	14,965
35	3,289,902	167,886	167,886	-	13,849	-	13,849
36	3,460,403	166,432	166,432	-	12,771	-	12,771
37	3,647,789	164,526	164,526	-	11,744	-	11,744
38	3,853,932	162,047	162,047	-	10,760	-	10,760
39	4,080,975	159,057	159,057	-	9,825	-	9,825
40	4,331,154	155,552	155,552	-	8,938	-	8,938
41	4,606,872	151,564	151,564	-	8,101	-	8,101
42	4,910,676	147,257	147,257	-	7,322	-	7,322
43	5,245,133	142,693	142,693	-	6,600	-	6,600
44	5,612,931	137,905	137,905	-	5,934	-	5,934
45	6,016,926	132,946	132,946	-	5,321	-	5,321
46	6,460,129	127,860	127,860	-	4,760	-	4,760
47	6,945,731	122,672	122,672	-	4,249	-	4,249
48	7,477,139	117,397	117,397	-	3,782	-	3,782
49	8,058,001	112,057	112,057	-	3,358	-	3,358
50	8,692,217	106,676	106,676	-	2,974	-	2,974

For purposes of this projection, based on GASB guidance, we assumed the statutory contribution rates would continue after the plan becomes fully funded. If we reflected a decrease in contribution rates due to full funding, future assets and contributions would be less than what is shown herein.



# Single Discount Rate Development

## Present Values of Projected Benefits (concluded)

### (Dollars in Thousands)

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v <sup>(a)-.5</sup>	(g)=(e)*vf <sup>^(a)-.5</sup>	(h)=(c)/(1+sdr) <sup>^(a)-.5</sup>
51	\$ 9,383,960	\$ 101,267	\$ 101,267	\$ -	\$ 2,626	\$ -	\$ 2,626
52	10,137,705	95,844	95,844	-	2,312	-	2,312
53	10,958,253	90,422	90,422	-	2,029	-	2,029
54	11,850,751	85,018	85,018	-	1,775	-	1,775
55	12,820,720	79,650	79,650	-	1,547	-	1,547
56	13,874,082	74,336	74,336	-	1,343	-	1,343
57	15,017,188	69,093	69,093	-	1,161	-	1,161
58	16,256,851	63,939	63,939	-	999	-	999
59	17,600,383	58,893	58,893	-	856	-	856
60	19,055,629	53,974	53,974	-	730	-	730
61	20,631,007	49,199	49,199	-	619	-	619
62	22,335,553	44,588	44,588	-	522	-	522
63	24,178,969	40,160	40,160	-	437	-	437
64	26,171,665	35,932	35,932	-	364	-	364
65	28,324,826	31,920	31,920	-	301	-	301
66	30,650,459	28,141	28,141	-	247	-	247
67	33,161,464	24,607	24,607	-	201	-	201
68	35,871,700	21,327	21,327	-	162	-	162
69	38,796,065	18,309	18,309	-	129	-	129
70	41,950,568	15,558	15,558	-	102	-	102
71	45,352,426	13,075	13,075	-	80	-	80
72	49,020,148	10,858	10,858	-	62	-	62
73	52,973,642	8,903	8,903	-	47	-	47
74	57,234,323	7,200	7,200	-	35	-	35
75	61,825,227	5,738	5,738	-	26	-	26
76	66,771,139	4,501	4,501	-	19	-	19
77	72,098,726	3,472	3,472	-	14	-	14
78	77,836,681	2,631	2,631	-	10	-	10
79	84,015,879	1,956	1,956	-	7	-	7
80	90,669,543	1,425	1,425	-	5	-	5
81	97,833,416	1,017	1,017	-	3	-	3
82	105,545,959	709	709	-	2	-	2
83	113,848,543	483	483	-	1	-	1
84	122,785,677	321	321	-	1	-	1
85	132,405,234	208	208	-	-	-	-
86	142,758,703	131	131	-	-	-	-
87	153,901,462	80	80	-	-	-	-
88	165,893,059	48	48	-	-	-	-
89	178,797,532	28	28	-	-	-	-
90	192,683,737	16	16	-	-	-	-
91	207,625,713	9	9	-	-	-	-
92	223,703,065	5	5	-	-	-	-
93	241,001,386	3	3	-	-	-	-
94	259,612,702	2	2	-	-	-	-
95	279,635,953	1	1	-	-	-	-
96	301,177,518	-	-	-	-	-	-
97	324,351,768	-	-	-	-	-	-
98	349,281,664	-	-	-	-	-	-
99	376,099,408	-	-	-	-	-	-
100	404,947,131	-	-	-	-	-	-
<b>Totals</b>					\$ 1,889,239	\$ -	\$ 1,889,239

For purposes of this projection, based on GASB guidance, we assumed the statutory contribution rates would continue after the plan becomes fully funded. If we reflected a decrease in contribution rates due to full funding, future assets and contributions would be less than what is shown herein.



## **SECTION H**

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### **GLOSSARY OF TERMS**



## Glossary of Terms

<b><i>Actuarial Accrued Liability (AAL)</i></b>	The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as “accrued liability” or “actuarial liability.”
<b><i>Actuarial Assumptions</i></b>	These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption for a long-term average rate of inflation.
<b><i>Accrued Service</i></b>	Service credited under the system which was rendered before the date of the actuarial valuation.
<b><i>Actuarial Equivalent</i></b>	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.
<b><i>Actuarial Cost Method</i></b>	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method.
<b><i>Actuarial Gain (Loss)</i></b>	The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.
<b><i>Actuarial Present Value (APV)</i></b>	The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future payments at predetermined rates of interest and probabilities of payment.
<b><i>Actuarial Valuation</i></b>	The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions.
<b><i>Actuarial Valuation Date</i></b>	The date as of which an actuarial valuation is performed.
<b><i>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</i></b>	A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically, the Actuarially Determined Contribution has a normal cost payment and an amortization payment.

# Glossary of Terms

<b><i>Amortization Payment</i></b>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<b><i>Amortization Method</i></b>	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be “open” (meaning, reset each year) or “closed” (the number of years remaining will decline each year).
<b><i>Cost-of-Living Adjustments</i></b>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<b><i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i></b>	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
<b><i>Covered-Employee Payroll</i></b>	The payroll of employees that are provided with pensions through the pension plan.
<b><i>Deferred Retirement Option Program (DROP)</i></b>	A program that permits a plan member to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The plan member continues to provide service to the employer and is paid for the service by the employer after the DROP entry date; however, the pensions that would have been paid to the plan member are credited to an individual member account within the defined benefit pension plan until the end of the DROP period. Other variations for DROP exist and will be more fully detailed in the plan provision section of the valuation report.
<b><i>Deferred Inflows and Outflows</i></b>	The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.
<b><i>Discount Rate</i></b>	For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically: <ol style="list-style-type: none"><li>1. The benefit payments to be made while the pension plans’ fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and</li><li>2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.</li></ol>

## Glossary of Terms

<b><i>Entry Age Actuarial Cost Method (EAN)</i></b>	The EAN is a cost method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit age(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.
<b><i>GASB</i></b>	The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.
<b><i>Fiduciary Net Position</i></b>	The fiduciary net position is the market value of the assets of the trust dedicated to the defined benefit provisions.
<b><i>Long-Term Expected Rate of Return</i></b>	The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.
<b><i>Money-Weighted Rate of Return</i></b>	The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.
<b><i>Multiple-Employer Defined Benefit Pension Plan</i></b>	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
<b><i>Municipal Bond Rate</i></b>	The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.
<b><i>Net Pension Liability (NPL)</i></b>	The NPL is the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit pension plan.
<b><i>Non-Employer Contributing Entities</i></b>	Non-employer contributing entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB accounting statements, plan members are not considered non-employer contributing entities.
<b><i>Normal Cost</i></b>	The portion of the actuarial present value allocated to a valuation year is called the normal cost. For purposes of application to the requirements of this Statement, the term normal cost is the equivalent of service cost.

## Glossary of Terms

<b><i>Other Postemployment Benefits (OPEB)</i></b>	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits.
<b><i>Real Rate of Return</i></b>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<b><i>Service Cost</i></b>	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
<b><i>Total Pension Expense</i></b>	<p>The total pension expense is the sum of the following items that are recognized at the end of the employer’s fiscal year:</p> <ol style="list-style-type: none"><li>1. Service Cost</li><li>2. Interest on the Total Pension Liability</li><li>3. Current-Period Benefit Changes</li><li>4. Employee Contributions (made negative for addition here)</li><li>5. Projected Earnings on Plan Investments (made negative for addition here)</li><li>6. Pension Plan Administrative Expense</li><li>7. Other Changes in Plan Fiduciary Net Position</li><li>8. Recognition of Outflow (Inflow) of Resources due to Liabilities</li><li>9. Recognition of Outflow (Inflow) of Resources due to Assets</li></ol>
<b><i>Total Pension Liability (TPL)</i></b>	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
<b><i>Unfunded Actuarial Accrued Liability (UAAL)</i></b>	The UAAL is the difference between actuarial accrued liability and valuation assets.
<b><i>Valuation Assets</i></b>	The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of GASB Statement Nos. 67 and 68, the valuation assets are equal to the market value of assets.