

# Village of Arlington Heights Regular

GASB Statement No. 68 Employer Reporting

Accounting Schedules

December 31, 2021



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March 24, 2022

Village of Arlington Heights  
Illinois Municipal Retirement Fund

Ladies and Gentlemen:

The accounting schedules submitted in this report are required under the Governmental Accounting Standards Board (GASB) Statement No. 68 "Accounting and Financial Reporting for Pensions."

Our calculations for this report were prepared for the purpose of complying with the requirements of GASB Statement No. 68. These calculations have been made on a basis that is consistent with our understanding of these accounting standards. These results are subject to review by the fund's auditor and may be revised.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of satisfying the requirements of GASB Statement No. 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. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement No. 68 may produce significantly different results. This report may be provided to parties other than Village of Arlington Heights only in its entirety and only with the permission of Village of Arlington Heights. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by the Illinois Municipal Retirement Fund (IMRF), concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. If your understanding of this information is different than ours, please let us know and do not use or distribute this report until those differences have been resolved to your satisfaction. This information was checked for internal consistency, but it was not audited.

This report complements the actuarial valuation report that was provided to the IMRF and should be considered in conjunction with that report. Please see the actuarial valuation report as of December 31, 2021 for additional discussions of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

To the best of our knowledge, the information contained in this report is accurate, and fairly represents the GASB Statement No. 68 information related to Village of Arlington Heights. 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. If you have reason to believe that the information provided in this report is inaccurate, or is in any way incomplete, or if you need further information in order to make an informed decision on the subject matter of this report, please contact IMRF.

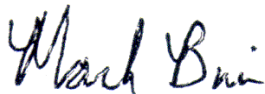
This report was prepared during the recent and still-developing COVID-19 pandemic, which is likely to influence demographic, economic, and health care experience, at least in the short term. Results in this report are developed based on available data without adjustment. We will continue to monitor these developments and their impact on the Plan. Actual experience will be reflected in each subsequent report, as experience emerges.

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 and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

Mark Buis and Francois Pieterse are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the Academy of Actuaries to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

Respectfully submitted,  
Gabriel, Roeder, Smith & Company



Mark Buis, FSA, EA, FCA, MAAA



Francois Pieterse, ASA, FCA, MAAA

MB/FP:bd



## **SECTION A**

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### **EXECUTIVE SUMMARY**

# Executive Summary as of December 31, 2021

Actuarial Valuation Date	December 31, 2021
Measurement Date of the Net Pension Liability	December 31, 2021
Fiscal Year End	April 30, 2022

## Membership

Number of	
- Retirees and Beneficiaries	503
- Inactive, Non-Retired Members	229
- Active Members	379
- Total	1,111
Covered Valuation Payroll <sup>(1)</sup>	\$ 27,336,705

## Net Pension Liability

Total Pension Liability/(Asset)	\$ 207,181,158
Plan Fiduciary Net Position	227,694,492
Net Pension Liability/(Asset)	\$ (20,513,334)
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	109.90%
Net Pension Liability as a Percentage of Covered Valuation Payroll	(75.04)%

## Development of the Single Discount Rate as of December 31, 2021

Long-Term Expected Rate of Investment Return	7.25%
Long-Term Municipal Bond Rate <sup>(2)</sup>	1.84%
Last year ending December 31 in the 2022 to 2121 projection period for which projected benefit payments are fully funded	2121
Resulting Single Discount Rate based on the above development	7.25%
Single Discount Rate calculated using December 31, 2020 Measurement Date	7.25%

**Total Pension Expense/(Income)** \$ (4,168,830)

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

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	\$ 1,369,723	\$ 236,768
Changes in assumptions	0	757,117
Net difference between projected and actual earnings on pension plan investments	4,428,568	31,219,195
Total	\$ 5,798,291	\$ 32,213,080

<sup>(1)</sup> Does not necessarily represent Covered Employee Payroll as defined in GASB Statement No. 68.

<sup>(2)</sup> Source: 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 December 31, 2021. In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax exempt securities.

# Discussion

## Accounting Standard

For state and local government employers (as well as certain non-employers) that contribute to a Defined Benefit (DB) pension plan administered through a trust or equivalent arrangement, Governmental Accounting Standards Board (GASB) Statement No. 68 establishes standards for pension accounting and financial reporting. Under GASB Statement No. 68, the employer must 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 is not included in this report if it is not actuarial in nature, such as the notes to the financial statements regarding accounting policies and investments. As a result, the retirement fund and/or plan sponsor is responsible for preparing and disclosing the non-actuarial information needed to comply with these accounting standards.

## Financial Statements

GASB Statement No. 68 requires state and local government employers that contribute to DB pension plans to recognize the net pension liability and the pension expense on their financial statements, along with the related deferred outflows of resources and deferred inflows of resources. 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 says, "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." The information contained in this report does not incorporate any contributions made to IMRF subsequent to the measurement date of December 31, 2021.

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 certain changes in the liability and investment experience.

## 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 of resources and inflows of resources related to pensions.

In addition, GASB Statement No. 68 requires the notes of the financial statements for the employers to include certain additional information, including (page numbers refer to page numbers from this report unless specified otherwise):

- A description of the types of benefits provided by the plan, as well as automatic or ad hoc COLAs (please see pages B-1 to B-5 of the December 31, 2021 Annual Actuarial Valuation report dated March 11, 2022);
- The number and classes of employees covered by the benefit terms (page 1);
- For the current year, sources of changes in the net pension liability (page 11);
- Significant assumptions and methods used to calculate the total pension liability (page 16);
- Inputs to the single discount rate (page 17);
- Certain information about mortality assumptions and the dates of experience studies (pages 14 and 16);
- The date of the valuation used to determine the total pension liability (page 1);
- Information about changes of assumptions or other inputs and benefit terms (pages 14 and 16);
- The basis for determining contributions to the plan, including a description of the plan's funding policy, as well as member and employer contribution requirements (please see page A-3, B-5 and Section D of the December 31, 2021 Annual Actuarial Valuation report dated March 11, 2022, as well as page 14);
- The total pension liability, fiduciary net position, net pension liability, and the pension plan's fiduciary net position as a percentage of the total pension liability (page 11);
- 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 (page 11); and
- A description of the fund that administers the pension plan (to be provided by IMRF).

## Required Supplementary Information

The financial statements of employers also include required supplementary information showing the 10-year fiscal history of:

- Sources of changes in the net pension liability (page 12);
- 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 (page 12); and
- Comparison of actual employer contributions to the actuarially determined contributions based on the plan's funding policy (page 13).

These tables may be built prospectively as the information becomes available.



## Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. For the employer's financial reporting purposes, the net pension liability and pension expense should be measured as of the employer's "measurement date" which may not be earlier than the fiscal year-end date, 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 December 31, 2021 and a measurement date of December 31, 2021.

## Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a single discount rate that reflects: (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's 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 plan's projected fiduciary net position is not sufficient to pay benefits).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.25%, the municipal bond rate is 1.84% (based on the daily rate closest to but not later than the measurement date of the "20-Year Municipal GO AA Index" described on page 1), and the resulting Single Discount Rate is 7.25%.

## Other Observations

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

Given the plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the plan earning 7.25% on the actuarial value of assets), it is expected that:

- (1) The employer normal cost as a percentage of pay will decrease to the level of Tier 2 normal cost as time passes, as the majority of the active population will consist of Tier 2 members.
- (2) The unfunded liability will increase in dollar amount for several years before it begins to decrease.
- (3) The funded status of the plan will increase gradually towards a 100% funded ratio.

This funding policy results in a crossover date in 2121 and a discount rate of 7.25%. The projections in this report are strictly for the purposes of determining the GASB discount rate and are different from a funding projection for the ongoing plan.

### Limitations of Assets as a Percent of Total Pension Liability Measurements

This report includes a measure of the plan fiduciary net position as a percent of total pension liability. Unless otherwise indicated, with regard to any such measurements presented in this report:

- (1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.
- (2) The measurement is inappropriate for assessing the need for or amount of future employer contributions.

### Limitations of Funded Status Measurements

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

- (1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations; in other words, if transferring the obligations to an unrelated third party in an arm's length market value type transaction.
- (2) The measurement is dependent upon the actuarial cost method which, in combination with the plan's amortization policy, affects the timing and amounts of future contributions. The amount of future contributions will most certainly differ from those assumed in this report due to future actual experience differing from assumed experience based upon actuarial assumptions. A funded ratio measurement in this report of 100% is not synonymous with no required future contributions. If the funded ratio were 100%, the plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).

## Limitation of Project Scope

Actuarial standards do not require the actuary to evaluate the ability of the plan sponsor or other contributing entity to make required contributions to the plan when due. Such an evaluation was not within the scope of this project and is not within the actuary's domain of expertise. Consequently, the actuary performed no such evaluation.

**SECTION B**

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**FINANCIAL STATEMENTS**

# Pension Expense/(Income) Under GASB Statement No. 68

## Calendar Year Ended December 31, 2021

### A. Expense/(Income)

1. Service Cost	\$ 2,598,026
2. Interest on the Total Pension Liability	14,331,584
3. Current-Period Benefit Changes	0
4. Employee Contributions (made negative for addition here)	(1,230,154)
5. Projected Earnings on Plan Investments (made negative for addition here)	(14,334,207)
6. Other Changes in Plan Fiduciary Net Position	1,866,986
7. Recognition of Outflow (Inflow) of Resources due to Liabilities	1,646,998
8. Recognition of Outflow (Inflow) of Resources due to Assets	(9,048,063)
<b>9. Total Pension Expense/(Income)</b>	<b>\$ (4,168,830)</b>

### Recognition of Deferred Outflows and Inflows of Resources

Differences between expected and actual experience and changes in assumptions are recognized in the 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 a retirement benefit 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 3,665 years. Additionally, the total plan membership (active employees and inactive employees) was 1,092. 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 3.3566 years.

Additionally, differences between projected and actual earnings on pension plan investments should be recognized in the pension expense using a systematic and rational method over a closed five-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 Calendar Year Ended December 31, 2021

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

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$	(337,238)
2. Assumption Changes (gains) or losses	\$	0
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		3.3566
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	\$	(100,470)
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$	0
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	\$	(100,470)
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	\$	(236,768)
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$	0
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	\$	(236,768)

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

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$	(20,040,717)
2. Recognition period for Assets {in years}		5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	\$	(4,008,143)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$	(16,032,574)

*Please note that employer contributions made after the measurement date have not been reported as deferred outflows of resources. These employer contributions must be separately accounted for by the employer.*

# Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Calendar Year Ended December 31, 2021

## 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 of Resources
1. Due to Liabilities	\$ 2,256,831	\$ 609,833	\$ 1,646,998
2. Due to Assets	4,428,568	13,476,631	(9,048,063)
<b>3. Total</b>	<b>\$ 6,685,399</b>	<b>\$ 14,086,464</b>	<b>\$ (7,401,065)</b>

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

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ 1,558,465	\$ 100,470	\$ 1,457,995
2. Assumption changes	698,366	509,363	189,003
3. Net difference between projected and actual earnings on pension plan investments	4,428,568	13,476,631	(9,048,063)
<b>4. Total</b>	<b>\$ 6,685,399</b>	<b>\$ 14,086,464</b>	<b>\$ (7,401,065)</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 of Resources
1. Differences between expected and actual experience	\$ 1,369,723	\$ 236,768	\$ 1,132,955
2. Assumption changes	0	757,117	\$ (757,117)
3. Net difference between projected and actual earnings on pension plan investments	4,428,568	31,219,195	(26,790,627)
<b>4. Total</b>	<b>\$ 5,798,291</b>	<b>\$ 32,213,080</b>	<b>\$ (26,414,789)</b>

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

Year Ending December 31	Net Deferred Outflows of Resources
2022	\$ (5,455,882)
2023	(10,319,505)
2024	(6,631,257)
2025	(4,008,145)
2026	0
Thereafter	0
<b>Total</b>	<b>\$ (26,414,789)</b>

# Recognition of Deferred Outflows and Inflows of Resources

## Reporting Date - December 31, 2021

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>					
2014	\$ 0	1.0000	\$ 0	\$ 0	0.0000
2015	(648,919)	3.7204	0	0	0.0000
2016	1,640,544	3.6877	0	0	0.0000
2017	(92,058)	3.7101	0	0	0.0000
2018	1,256,791	3.4816	173,848	0	0.0000
2019	2,419,520	3.4927	692,736	341,312	0.4927
2020	2,412,173	3.4864	691,881	1,028,411	1.4864
2021	(337,238)	3.3566	(100,470)	(236,768)	2.3566
<b>Total</b>			<b>\$ 1,457,995</b>	<b>\$ 1,132,955</b>	
<b>Deferred Outflow (Inflow) due to Assumption Changes</b>					
2014	\$ 0	1.0000	\$ 0	\$ 0	0.0000
2015	395,156	3.7204	0	0	0.0000
2016	(611,951)	3.6877	0	0	0.0000
2017	(5,760,640)	3.7101	0	0	0.0000
2018	5,048,651	3.4816	698,366	0	0.0000
2019	0	3.4927	0	0	0.4927
2020	(1,775,843)	3.4864	(509,363)	(757,117)	1.4864
2021	0	3.3566	0	0	2.3566
<b>Total</b>			<b>\$ 189,003</b>	<b>\$ (757,117)</b>	
<b>Deferred Outflow (Inflow) due to Differences Between Projected and Actual Earnings on Plan Investments</b>					
2017	\$ (15,844,113)	5.0000	\$ (3,168,821)	\$ 0	0.0000
2018	22,142,840	5.0000	4,428,568	4,428,568	1.0000
2019	(18,561,896)	5.0000	(3,712,379)	(7,424,759)	2.0000
2020	(12,936,438)	5.0000	(2,587,288)	(7,761,862)	3.0000
2021	(20,040,717)	5.0000	(4,008,143)	(16,032,574)	4.0000
<b>Total</b>			<b>\$ (9,048,063)</b>	<b>\$ (26,790,627)</b>	



## Schedule of Changes in Net Pension Liability and Related Ratios Current Period Calendar Year Ended December 31, 2021

<b>A. Total pension liability</b>		
1. Service Cost	\$	2,598,026
2. Interest on the Total Pension Liability		14,331,584
3. Changes of benefit terms		0
4. Difference between expected and actual experience of the Total Pension Liability		(337,238)
5. Changes of assumptions		0
6. Benefit payments, including refunds of employee contributions		(11,578,443)
7. Net change in total pension liability	\$	5,013,929
8. Total pension liability – beginning		202,167,229
9. Total pension liability – ending	<u>\$</u>	<u>207,181,158</u>
<b>B. Plan fiduciary net position</b>		
1. Contributions – employer	\$	3,428,023
2. Contributions – employee		1,230,154
3. Net investment income		34,374,924
4. Benefit payments, including refunds of employee contributions		(11,578,443)
5. Other (Net Transfer)		(1,866,986)
6. Net change in plan fiduciary net position	\$	25,587,672
7. Plan fiduciary net position – beginning		202,106,820
8. Plan fiduciary net position – ending	<u>\$</u>	<u>227,694,492</u>
<b>C. Net pension liability/(asset)</b>	<u>\$</u>	<u>(20,513,334)</u>
<b>D. Plan fiduciary net position as a percentage of the total pension liability</b>		<b>109.90%</b>
<b>E. Covered Valuation payroll<sup>(1)</sup></b>	\$	27,336,705
<b>F. Net pension liability as a percentage of covered valuation payroll</b>		<b>(75.04)%</b>

<sup>(1)</sup> Does not necessarily represent Covered Employee Payroll as defined in GASB Statement No. 68.

### Sensitivity of Net Pension Liability/(Asset) to the Single Discount Rate Assumption

	1% Decrease 6.25%	Current Single Discount Rate Assumption 7.25%	1% Increase 8.25%
Total Pension Liability	\$ 230,564,411	\$ 207,181,158	\$ 188,363,023
Plan Fiduciary Net Position	227,694,492	227,694,492	227,694,492
Net Pension Liability/(Asset)	\$ 2,869,919	\$ (20,513,334)	\$ (39,331,469)



# Schedules of Required Supplementary Information

## Multiyear Schedule of Changes in Net Pension Liability and Related Ratios

**Last 10 Calendar Years**  
(schedule to be built prospectively from 2014)

Calendar year ending December 31,	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>Total Pension Liability</b>										
Service Cost	\$ 2,598,026	\$ 2,768,600	\$ 2,695,223	\$ 2,526,777	\$ 2,700,511	\$ 2,639,543	\$ 2,640,660			
Interest on the Total Pension Liability	14,331,584	13,898,960	13,316,051	12,874,610	12,858,220	12,281,628	11,869,028			
Benefit Changes	0	0	0	0	0	0	0			
Difference between Expected and Actual Experience	(337,238)	2,412,173	2,419,520	1,256,791	(92,058)	1,640,544	(648,919)			
Assumption Changes	0	(1,775,843)	0	5,048,651	(5,760,640)	(611,951)	395,156			
Benefit Payments and Refunds	(11,578,443)	(10,924,301)	(9,930,417)	(9,635,282)	(9,165,978)	(8,734,040)	(7,881,295)			
<b>Net Change in Total Pension Liability</b>	<b>5,013,929</b>	<b>6,379,589</b>	<b>8,500,377</b>	<b>12,071,547</b>	<b>540,055</b>	<b>7,215,724</b>	<b>6,374,630</b>			
<b>Total Pension Liability - Beginning</b>	<b>202,167,229</b>	<b>195,787,640</b>	<b>187,287,263</b>	<b>175,215,716</b>	<b>174,675,661</b>	<b>167,459,937</b>	<b>161,085,307</b>			
<b>Total Pension Liability - Ending (a)</b>	<b>\$ 207,181,158</b>	<b>\$ 202,167,229</b>	<b>\$ 195,787,640</b>	<b>\$ 187,287,263</b>	<b>\$ 175,215,716</b>	<b>\$ 174,675,661</b>	<b>\$ 167,459,937</b>			
<b>Plan Fiduciary Net Position</b>										
Employer Contributions	\$ 3,428,023	\$ 3,502,858	\$ 2,718,454	\$ 3,355,360	\$ 3,170,250	\$ 3,257,572	\$ 3,168,474			
Employee Contributions	1,230,154	1,314,647	1,290,982	1,222,046	1,158,454	1,145,096	1,182,657			
Pension Plan Net Investment Income	34,374,924	25,886,710	29,736,794	(9,519,120)	26,872,858	9,933,011	723,795			
Benefit Payments and Refunds	(11,578,443)	(10,924,301)	(9,930,417)	(9,635,282)	(9,165,978)	(8,734,040)	(7,881,295)			
Other	(1,866,986)	1,298,122	231,905	1,425,713	(2,743,611)	555,713	965,300			
<b>Net Change in Plan Fiduciary Net Position</b>	<b>25,587,672</b>	<b>21,078,036</b>	<b>24,047,718</b>	<b>(13,151,283)</b>	<b>19,291,973</b>	<b>6,157,352</b>	<b>(1,841,069)</b>			
<b>Plan Fiduciary Net Position - Beginning</b>	<b>202,106,820</b>	<b>181,028,784</b>	<b>156,981,066</b>	<b>170,132,349</b>	<b>150,840,376</b>	<b>144,683,024</b>	<b>146,524,093</b>			
<b>Plan Fiduciary Net Position - Ending (b)</b>	<b>\$ 227,694,492</b>	<b>\$ 202,106,820</b>	<b>\$ 181,028,784</b>	<b>\$ 156,981,066</b>	<b>\$ 170,132,349</b>	<b>\$ 150,840,376</b>	<b>\$ 144,683,024</b>			
<b>Net Pension Liability/(Asset) - Ending (a) - (b)</b>	<b>(20,513,334)</b>	<b>60,409</b>	<b>14,758,856</b>	<b>30,306,197</b>	<b>5,083,367</b>	<b>23,835,285</b>	<b>22,776,913</b>			
<b>Plan Fiduciary Net Position as a Percentage</b>										
<b>of Total Pension Liability</b>	109.90%	99.97 %	92.46 %	83.82 %	97.10 %	86.35%	86.40 %			
<b>Covered Valuation Payroll<sup>(1)</sup></b>	<b>\$ 27,336,705</b>	<b>\$ 27,713,351</b>	<b>\$ 27,157,382</b>	<b>\$ 26,335,298</b>	<b>\$ 25,690,842</b>	<b>\$ 24,924,034</b>	<b>\$ 24,380,386</b>			
<b>Net Pension Liability as a Percentage</b>										
<b>of Covered Valuation Payroll</b>	(75.04)%	0.22 %	54.35 %	115.08 %	19.79 %	95.63%	93.42 %			

<sup>(1)</sup> Does not necessarily represent Covered Employee Payroll as defined in GASB Statement No. 68.

# Multiyear Schedule of Contributions

## Last 10 Calendar Years

Calendar Year Ending December 31,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Valuation Payroll	Actual Contribution as a % of Covered Valuation Payroll
2015	\$ 3,159,698	\$ 3,168,474	\$ (8,776)	\$ 24,380,386	13.00%
2016	3,257,571	3,257,572	(1)	24,924,034	13.07%
2017	3,170,250	3,170,250	(0)	25,690,842	12.34%
2018	3,349,850	3,355,360	(5,510)	26,335,298	12.74%
2019	2,718,454	2,718,454	0	27,157,382	10.01%
2020	3,502,968	3,502,858	110	27,713,351	12.64%
2021	3,428,023 *	3,428,023	0	27,336,705	12.54%

\* Estimated based on contribution rate of 12.54% and covered valuation payroll of \$27,336,705.  
This number should be verified by the auditor.

# Notes to Schedule of Contributions

## Summary of Actuarial Methods and Assumptions Used in the Calculation of the 2021 Contribution Rate\*

### Valuation Date:

Notes Actuarially determined contribution rates are calculated as of December 31 each year, which is 12 months prior to the beginning of the calendar year in which contributions are reported.

### Methods and Assumptions Used to Determine 2021 Contribution Rates:

Actuarial Cost Method	Aggregate Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	Non-Taxing bodies: 10-year rolling period. Taxing bodies (Regular, SLEP and ECO groups): 22-year closed period. Early Retirement Incentive Plan liabilities: a period up to 10 years selected by the Employer upon adoption of ERI. SLEP supplemental liabilities attributable to Public Act 94-712 were financed over 17 years for most employers (five employers were financed over 18 years; one employer was financed over 19 years; two employers were financed over 20 years; three employers were financed over 26 years; four employers were financed over 27 years and one employer was financed over 28 years).
Asset Valuation Method	5-Year smoothed market; 20% corridor
Wage growth	3.25%
Price Inflation	2.50%
Salary Increases	3.35% to 14.25% including inflation
Investment Rate of Return	7.25%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2017 valuation pursuant to an experience study of the period 2014-2016.
Mortality	For non-disabled retirees, IMRF specific mortality rates were used with fully generational projection scale MP-2017 (base year 2015). The IMRF specific rates were developed from the RP-2014 Blue Collar Healthy Annuitant Mortality Table with adjustments to match current IMRF experience. For disabled retirees, IMRF specific mortality rates were used with fully generational projection scale MP-2017 (base year 2015). The IMRF specific rates were developed from the RP-2014 Disabled Retirees Mortality Table applying the same adjustments that were applied for non-disabled lives. For active members, IMRF specific mortality rates were used with fully generational projection scale MP-2017 (base year 2015). The IMRF specific rates were developed from the RP-2014 Employee Mortality Table with adjustments to match current IMRF experience.

### Other Information:

Notes There were no benefit changes during the year.

\* Based on Valuation Assumptions used in the December 31, 2019 actuarial valuation.



# Development of Market Value of Assets

## Market Value of Assets as of December 31, 2021

1. Employee Contribution Reserve (MDF Assets from IMRF)	\$	30,903,598
2. Employer Contribution Reserve (EAF assets from IMRF)		79,779,575
3. Annuitant Reserve		117,300,246
4. Miscellaneous Adjustment*		<u>(288,927)</u>
<b>5. Net Market Value</b>	\$	<b>227,694,492</b>

\* Includes an adjustment factor of (0.0012673150) on Items 1 through 3 to ensure that Market Value of Assets for all employers balance to the total Market Value of IMRF. Miscellaneous adjustments are due to various items such as suspended annuity reserve, disability benefit reserve, death benefit reserve, supplemental benefit reserve, employers with no assets, etc.

## Schedule of Contributions

### Total Contributions

#### 1. Employer

a.) Wage Reporting	\$	3,428,023
b.) Accelerated payments and Reserve Payments		<u>-</u>
<b>Total Employer Contributions (a+b)</b>	\$	<b>3,428,023</b>

#### 2. Member

a.) Wage Reporting	\$	1,230,154
b.) Member Payments (i.e., ERI, Pension Payments)		<u>-</u>
<b>Sub-total (Amount used for valuation on Schedule of Changes Page 11)</b>	\$	<b>1,230,154</b>

c.) Voluntary Additional Plan	\$	<u>298,673</u>
<b>Total Member Contributions (a+b+c)</b>	\$	<b>1,528,827</b>

<b>Total Employer and Member Contributions (1+2)</b>	\$	<b>4,956,850</b>
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# Summary of Actuarial Methods and Assumptions Used in the Calculation of the Total Pension Liability

## Methods and Assumptions Used to Determine Total Pension Liability:

Actuarial Cost Method	Entry Age Normal
Asset Valuation Method	Market Value of Assets
Price Inflation	2.25%
Salary Increases	2.85% to 13.75%
Investment Rate of Return <sup>1</sup>	7.25%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2020 valuation pursuant to an experience study of the period 2017-2019.
Mortality	For non-disabled retirees, the Pub-2010, Amount-Weighted, below-median income, General, Retiree, Male (adjusted 106%) and Female (adjusted 105%) tables, and future mortality improvements projected using scale MP-2020. For disabled retirees, the Pub-2010, Amount-Weighted, below-median income, General, Disabled Retiree, Male and Female (both unadjusted) tables, and future mortality improvements projected using scale MP-2020. For active members, the Pub-2010, Amount-Weighted, below-median income, General, Employee, Male and Female (both unadjusted) tables, and future mortality improvements projected using scale MP-2020.

## Other Information:

Notes   There were no benefit changes during the year.

<sup>1</sup> *There were no changes in the investment rate of return since the December 31, 2020 valuation. There were no other changes to the methods and assumptions used to determine the Total Pension Liability.*

A detailed description of the actuarial assumptions and methods can be found in the December 31, 2021 IMRF annual actuarial valuation report.

## **SECTION C**

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### **CALCULATION OF THE SINGLE DISCOUNT RATE**

## Calculation of the Single Discount Rate

GASB Statement No. 68 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 “risk-free” rate is required, as described in the following paragraph.

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 7.25%; the municipal bond rate is 1.84%; and the resulting single discount rate is 7.25%.

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).

Expected Contributions are developed based on the following:

- Member Contributions for current members
- Normal Cost contributions for current members
- Unfunded Liability contributions for current members

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 at the SDR.



# Single Discount Rate Development Projection of Contributions

Year	Payroll for Current Employees	Contributions from Current Employees	Normal Cost Contributions	UAL Contributions	Total Contributions
2021	\$ 27,336,705				
2022	27,053,761	\$ 1,217,419	\$ 1,517,564	\$ 487,290	\$ 3,222,273
2023	25,372,867	1,141,779	1,408,142	(228,372)	2,321,549
2024	23,859,547	1,073,680	1,298,067	(1,040,026)	1,331,721
2025	22,532,820	1,013,977	1,221,407	(1,221,407)	1,013,977
2026	21,291,482	958,117	1,149,887	(1,149,887)	958,117
2027	20,119,207	905,364	1,080,576	(1,080,576)	905,364
2028	19,057,200	857,574	1,019,748	(1,019,748)	857,574
2029	18,008,704	810,392	958,273	(958,273)	810,392
2030	17,005,409	765,243	899,815	(899,815)	765,243
2031	16,062,482	722,812	843,535	(843,535)	722,811
2032	15,147,379	681,632	790,960	(790,960)	681,632
2033	14,293,953	643,228	740,713	(740,713)	643,227
2034	13,450,367	605,267	692,987	(692,987)	605,267
2035	12,585,257	566,337	643,411	(643,411)	566,336
2036	11,717,788	527,301	593,238	(593,238)	527,301
2037	10,879,769	489,590	544,323	(544,323)	489,589
2038	10,116,937	455,262	501,129	(501,129)	455,262
2039	9,415,389	423,693	460,763	(460,763)	423,693
2040	8,747,453	393,635	422,859	(422,859)	393,636
2041	8,102,514	364,613	386,850	(386,850)	364,613
2042	7,474,721	336,363	351,675	(351,675)	336,363
2043	6,839,934	307,797	317,730	0	625,527
2044	6,206,140	279,276	284,587	0	563,863
2045	5,637,119	253,670	254,011	0	507,682
2046	5,095,784	229,310	226,073	0	455,383
2047	4,519,913	203,396	197,379	0	400,775
2048	3,929,317	176,819	169,245	0	346,064
2049	3,366,314	151,484	143,322	0	294,806
2050	2,870,192	129,159	121,058	0	250,217
2051	2,409,891	108,445	100,686	0	209,131
2052	1,922,693	86,521	79,757	0	166,278
2053	1,490,540	67,074	61,534	0	128,608
2054	1,121,962	50,488	46,207	0	96,695
2055	801,938	36,087	33,107	0	69,194
2056	564,459	25,401	23,415	0	48,816
2057	395,876	17,814	16,540	0	34,354
2058	296,673	13,350	12,543	0	25,893
2059	225,874	10,164	9,572	0	19,736
2060	152,198	6,849	6,435	0	13,283
2061	101,715	4,577	4,341	0	8,918
2062	72,323	3,254	3,122	0	6,377
2063	38,534	1,734	1,656	0	3,390
2064	15,521	698	699	0	1,398
2065	7,616	343	391	0	734
2066	4,043	182	227	0	409
2067	2,434	110	144	0	253
2068	1,280	58	76	0	134
2069	312	14	19	0	33
2070	1	0	0	0	0
2071	0	0	0	0	0

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.



# Single Discount Rate Development Projection of Contributions (Concluded)

Year	Payroll for Current Employees	Contributions from Current Employees	Normal Cost Contributions	UAL Contributions	Total Contributions
2072	\$ 0	\$ 0	\$ 0	\$ 0	0
2073	0	0	0	0	0
2074	0	0	0	0	0
2075	0	0	0	0	0
2076	0	0	0	0	0
2077	0	0	0	0	0
2078	0	0	0	0	0
2079	0	0	0	0	0
2080	0	0	0	0	0
2081	0	0	0	0	0
2082	0	0	0	0	0
2083	0	0	0	0	0
2084	0	0	0	0	0
2085	0	0	0	0	0
2086	0	0	0	0	0
2087	0	0	0	0	0
2088	0	0	0	0	0
2089	0	0	0	0	0
2090	0	0	0	0	0
2091	0	0	0	0	0
2092	0	0	0	0	0
2093	0	0	0	0	0
2094	0	0	0	0	0
2095	0	0	0	0	0
2096	0	0	0	0	0
2097	0	0	0	0	0
2098	0	0	0	0	0
2099	0	0	0	0	0
2100	0	0	0	0	0
2101	0	0	0	0	0
2102	0	0	0	0	0
2103	0	0	0	0	0
2104	0	0	0	0	0
2105	0	0	0	0	0
2106	0	0	0	0	0
2107	0	0	0	0	0
2108	0	0	0	0	0
2109	0	0	0	0	0
2110	0	0	0	0	0
2111	0	0	0	0	0
2112	0	0	0	0	0
2113	0	0	0	0	0
2114	0	0	0	0	0
2115	0	0	0	0	0
2116	0	0	0	0	0
2117	0	0	0	0	0
2118	0	0	0	0	0
2119	0	0	0	0	0
2120	0	0	0	0	0
2121	0	0	0	0	0

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.



# Single Discount Rate Development Projection of Plan Fiduciary Net Position

Year	Projected Beginning		Projected Total		Projected Benefit		Projected Investment		Projected Ending Plan	
	Plan	Net Position	Contributions	Payments	Earnings at 7.25%	Net Position				
	(a)	(b)	(c)	(d)	(e)=(a)+(b)-(c)+(d)					
2022	\$	227,694,492	\$	3,222,273	\$	11,853,901	\$	16,200,429	\$	235,263,293
2023		235,263,293		2,321,549		12,414,756		16,697,111		241,867,197
2024		241,867,197		1,331,721		13,020,609		17,119,063		247,297,372
2025		247,297,372		1,013,977		13,591,432		17,481,104		252,201,021
2026		252,201,021		958,117		14,194,817		17,813,139		256,777,460
2027		256,777,460		905,364		14,790,483		18,121,837		261,014,179
2028		261,014,179		857,574		15,353,242		18,407,254		264,925,764
2029		264,925,764		810,392		15,952,551		18,667,818		268,451,423
2030		268,451,423		765,243		16,526,443		18,901,381		271,591,604
2031		271,591,604		722,812		17,019,255		19,109,981		274,405,142
2032		274,405,142		681,632		17,457,166		19,296,899		276,926,508
2033		276,926,508		643,228		17,846,627		19,464,460		279,187,568
2034		279,187,568		605,267		18,266,682		19,612,074		281,138,227
2035		281,138,227		566,337		18,720,374		19,735,952		282,720,141
2036		282,720,141		527,301		19,117,508		19,835,106		283,965,040
2037		283,965,040		489,590		19,477,460		19,911,198		284,888,368
2038		284,888,368		455,262		19,699,386		19,969,013		285,613,256
2039		285,613,256		423,693		19,880,729		20,013,984		286,170,204
2040		286,170,204		393,635		20,047,617		20,047,348		286,563,572
2041		286,563,572		364,613		20,142,335		20,071,460		286,857,310
2042		286,857,310		336,363		20,182,615		20,090,316		287,101,373
2043		287,101,373		625,527		20,205,100		20,117,508		287,639,308
2044		287,639,308		563,863		20,180,666		20,155,183		288,177,688
2045		288,177,688		507,682		20,077,374		20,195,893		288,803,889
2046		288,803,889		455,383		19,958,582		20,243,661		289,544,352
2047		289,544,352		400,775		19,852,557		20,299,176		290,391,746
2048		290,391,746		346,064		19,692,338		20,364,369		291,409,842
2049		291,409,842		294,806		19,507,575		20,442,936		292,640,009
2050		292,640,009		250,217		19,303,896		20,537,789		294,124,120
2051		294,124,120		209,131		19,116,444		20,650,600		295,867,406
2052		295,867,406		166,278		18,953,340		20,781,271		297,861,616
2053		297,861,616		128,608		18,669,861		20,934,606		300,254,970
2054		300,254,970		96,695		18,362,870		21,117,922		303,106,716
2055		303,106,716		69,194		18,000,307		21,336,607		306,512,209
2056		306,512,209		48,816		17,573,910		21,597,966		310,585,080
2057		310,585,080		34,354		17,061,590		21,910,980		315,468,824
2058		315,468,824		25,893		16,468,827		22,285,862		321,311,752
2059		321,311,752		19,736		15,878,570		22,730,278		328,183,195
2060		328,183,195		13,283		15,308,320		23,248,537		336,136,696
2061		336,136,696		8,918		14,689,879		23,847,037		345,302,772
2062		345,302,772		6,377		14,063,153		24,533,808		355,779,804
2063		355,779,804		3,390		13,462,090		25,314,694		367,635,798
2064		367,635,798		1,398		12,836,632		26,196,459		380,997,023
2065		380,997,023		734		12,193,255		27,188,038		395,992,540
2066		395,992,540		409		11,554,075		28,297,967		412,736,841
2067		412,736,841		253		10,920,931		29,534,473		431,350,636
2068		431,350,636		134		10,297,169		30,906,184		451,959,786
2069		451,959,786		33		9,682,151		32,422,248		474,699,916
2070		474,699,916		0		9,075,868		34,092,500		499,716,549
2071		499,716,549		0		8,480,190		35,927,421		527,163,780

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.



# Single Discount Rate Development

## Projection of Plan Fiduciary Net Position (Concluded)

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Investment Earnings at 7.25%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)=(a)+(b)-(c)+(d)
2072	\$ 527,163,780	\$ 0	\$ 7,896,508	\$ 37,938,134	\$ 557,205,406
2073	557,205,406	0	7,326,220	40,136,463	590,015,649
2074	590,015,649	0	6,770,912	42,534,983	625,779,720
2075	625,779,720	0	6,232,164	45,147,066	664,694,622
2076	664,694,622	0	5,711,697	47,986,934	706,969,859
2077	706,969,859	0	5,211,179	51,069,715	752,828,395
2078	752,828,395	0	4,732,085	54,411,522	802,507,832
2079	802,507,832	0	4,275,771	58,029,533	856,261,594
2080	856,261,594	0	3,843,409	61,942,080	914,360,265
2081	914,360,265	0	3,436,032	66,168,742	977,092,976
2082	977,092,976	0	3,054,481	70,730,453	1,044,768,949
2083	1,044,768,949	0	2,699,283	75,649,612	1,117,719,277
2084	1,117,719,277	0	2,370,688	80,950,214	1,196,298,803
2085	1,196,298,803	0	2,068,663	86,657,986	1,280,888,126
2086	1,280,888,126	0	1,792,903	92,800,534	1,371,895,757
2087	1,371,895,757	0	1,542,833	99,407,493	1,469,760,417
2088	1,469,760,417	0	1,317,646	106,510,701	1,574,953,472
2089	1,574,953,472	0	1,116,422	114,144,365	1,687,981,415
2090	1,687,981,415	0	938,088	122,345,242	1,809,388,569
2091	1,809,388,569	0	781,381	131,152,842	1,939,760,030
2092	1,939,760,030	0	644,927	140,609,633	2,079,724,735
2093	2,079,724,735	0	527,236	150,761,265	2,229,958,765
2094	2,229,958,765	0	426,719	161,656,812	2,391,188,858
2095	2,391,188,858	0	341,759	173,349,020	2,564,196,118
2096	2,564,196,118	0	270,704	185,894,577	2,749,819,992
2097	2,749,819,992	0	211,932	199,354,401	2,948,962,461
2098	2,948,962,461	0	163,910	213,793,941	3,162,592,491
2099	3,162,592,491	0	125,164	229,283,498	3,391,750,825
2100	3,391,750,825	0	94,306	245,898,576	3,637,555,094
2101	3,637,555,094	0	70,070	263,720,249	3,901,205,273
2102	3,901,205,273	0	51,303	282,835,555	4,183,989,525
2103	4,183,989,525	0	36,980	303,337,924	4,487,290,469
2104	4,487,290,469	0	26,215	325,327,625	4,812,591,879
2105	4,812,591,879	0	18,256	348,912,261	5,161,485,884
2106	5,161,485,884	0	12,471	374,207,282	5,535,680,695
2107	5,535,680,695	0	8,346	401,336,553	5,937,008,902
2108	5,937,008,902	0	5,463	430,432,951	6,367,436,390
2109	6,367,436,390	0	3,492	461,639,014	6,829,071,912
2110	6,829,071,912	0	2,177	495,107,636	7,324,177,371
2111	7,324,177,371	0	1,321	531,002,812	7,855,178,862
2112	7,855,178,862	0	779	569,500,440	8,424,678,522
2113	8,424,678,522	0	446	610,789,177	9,035,467,253
2114	9,035,467,253	0	247	655,071,367	9,690,538,373
2115	9,690,538,373	0	133	702,564,027	10,393,102,268
2116	10,393,102,268	0	69	753,499,912	11,146,602,112
2117	11,146,602,112	0	34	808,128,652	11,954,730,729
2118	11,954,730,729	0	17	866,717,977	12,821,448,689
2119	12,821,448,689	0	8	929,555,030	13,751,003,711
2120	13,751,003,711	0	4	996,947,769	14,747,951,476
2121	14,747,951,476	0	2	1,069,226,482	15,817,177,956

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.



# Single Discount Rate Development

## Present Values of Projected Benefits

Year	Projected		Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of	Present Value of	Present Value of
	Beginning Plan Net Position	Projected Benefit Payments			Funded Benefit Payments using Expected Return Rate (v)	Unfunded Benefit Payments using Municipal Bond Rate (vf)	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)
2022	\$ 227,694,492	\$ 11,853,901	\$ 11,853,901	\$ 0	\$ 11,446,235	\$ 0	\$ 11,446,235
2023	235,263,293	12,414,756	12,414,756	0	11,177,438	0	11,177,438
2024	241,867,197	13,020,609	13,020,609	0	10,930,450	0	10,930,450
2025	247,297,372	13,591,432	13,591,432	0	10,638,360	0	10,638,360
2026	252,201,021	14,194,817	14,194,817	0	10,359,575	0	10,359,575
2027	256,777,460	14,790,483	14,790,483	0	10,064,616	0	10,064,616
2028	261,014,179	15,353,242	15,353,242	0	9,741,316	0	9,741,316
2029	264,925,764	15,952,551	15,952,551	0	9,437,357	0	9,437,357
2030	268,451,423	16,526,443	16,526,443	0	9,115,959	0	9,115,959
2031	271,591,604	17,019,255	17,019,255	0	8,753,186	0	8,753,186
2032	274,405,142	17,457,166	17,457,166	0	8,371,477	0	8,371,477
2033	276,926,508	17,846,627	17,846,627	0	7,979,711	0	7,979,711
2034	279,187,568	18,266,682	18,266,682	0	7,615,412	0	7,615,412
2035	281,138,227	18,720,374	18,720,374	0	7,276,976	0	7,276,976
2036	282,720,141	19,117,508	19,117,508	0	6,928,998	0	6,928,998
2037	283,965,040	19,477,460	19,477,460	0	6,582,247	0	6,582,247
2038	284,888,368	19,699,386	19,699,386	0	6,207,221	0	6,207,221
2039	285,613,256	19,880,729	19,880,729	0	5,840,897	0	5,840,897
2040	286,170,204	20,047,617	20,047,617	0	5,491,774	0	5,491,774
2041	286,563,572	20,142,335	20,142,335	0	5,144,728	0	5,144,728
2042	286,857,310	20,182,615	20,182,615	0	4,806,542	0	4,806,542
2043	287,101,373	20,205,100	20,205,100	0	4,486,617	0	4,486,617
2044	287,639,308	20,180,666	20,180,666	0	4,178,267	0	4,178,267
2045	288,177,688	20,077,374	20,077,374	0	3,875,880	0	3,875,880
2046	288,803,889	19,958,582	19,958,582	0	3,592,492	0	3,592,492
2047	289,544,352	19,852,557	19,852,557	0	3,331,849	0	3,331,849
2048	290,391,746	19,692,338	19,692,338	0	3,081,547	0	3,081,547
2049	291,409,842	19,507,575	19,507,575	0	2,846,279	0	2,846,279
2050	292,640,009	19,303,896	19,303,896	0	2,626,164	0	2,626,164
2051	294,124,120	19,116,444	19,116,444	0	2,424,860	0	2,424,860
2052	295,867,406	18,953,340	18,953,340	0	2,241,651	0	2,241,651
2053	297,861,616	18,669,861	18,669,861	0	2,058,857	0	2,058,857
2054	300,254,970	18,362,870	18,362,870	0	1,888,114	0	1,888,114
2055	303,106,716	18,000,307	18,000,307	0	1,725,720	0	1,725,720
2056	306,512,209	17,573,910	17,573,910	0	1,570,947	0	1,570,947
2057	310,585,080	17,061,590	17,061,590	0	1,422,052	0	1,422,052
2058	315,468,824	16,468,827	16,468,827	0	1,279,856	0	1,279,856
2059	321,311,752	15,878,570	15,878,570	0	1,150,569	0	1,150,569
2060	328,183,195	15,308,320	15,308,320	0	1,034,264	0	1,034,264
2061	336,136,696	14,689,879	14,689,879	0	925,390	0	925,390
2062	345,302,772	14,063,153	14,063,153	0	826,023	0	826,023
2063	355,779,804	13,462,090	13,462,090	0	737,267	0	737,267
2064	367,635,798	12,836,632	12,836,632	0	655,490	0	655,490
2065	380,997,023	12,193,255	12,193,255	0	580,547	0	580,547
2066	395,992,540	11,554,075	11,554,075	0	512,927	0	512,927
2067	412,736,841	10,920,931	10,920,931	0	452,046	0	452,046
2068	431,350,636	10,297,169	10,297,169	0	397,414	0	397,414
2069	451,959,786	9,682,151	9,682,151	0	348,418	0	348,418
2070	474,699,916	9,075,868	9,075,868	0	304,522	0	304,522
2071	499,716,549	8,480,190	8,480,190	0	265,301	0	265,301

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.



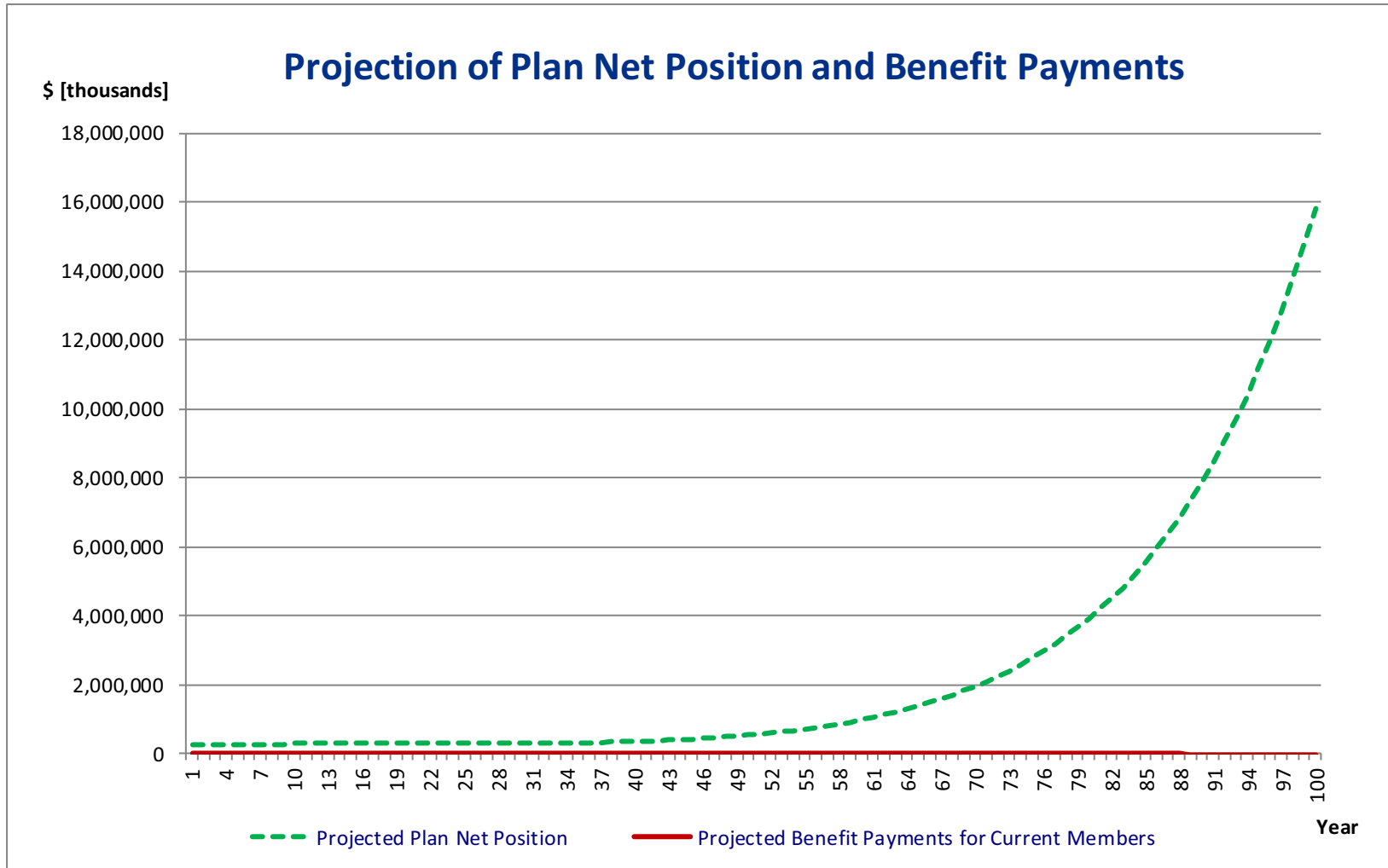
# Single Discount Rate Development

## Present Values of Projected Benefits (Concluded)

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>n</sup> ((a)-.5)	(g)=(e)*vf <sup>n</sup> ((a)-.5)	(h)=(c)/(1+sdr) <sup>n</sup> ((a)-.5)
2072	\$ 527,163,780	\$ 7,896,508	\$ 7,896,508	\$ 0	\$ 230,341	\$ 0	\$ 230,341
2073	557,205,406	7,326,220	7,326,220	0	199,259	0	199,259
2074	590,015,649	6,770,912	6,770,912	0	171,707	0	171,707
2075	625,779,720	6,232,164	6,232,164	0	147,361	0	147,361
2076	664,694,622	5,711,697	5,711,697	0	125,925	0	125,925
2077	706,969,859	5,211,179	5,211,179	0	107,124	0	107,124
2078	752,828,395	4,732,085	4,732,085	0	90,700	0	90,700
2079	802,507,832	4,275,771	4,275,771	0	76,413	0	76,413
2080	856,261,594	3,843,409	3,843,409	0	64,043	0	64,043
2081	914,360,265	3,436,032	3,436,032	0	53,385	0	53,385
2082	977,092,976	3,054,481	3,054,481	0	44,249	0	44,249
2083	1,044,768,949	2,699,283	2,699,283	0	36,460	0	36,460
2084	1,117,719,277	2,370,688	2,370,688	0	29,857	0	29,857
2085	1,196,298,803	2,068,663	2,068,663	0	24,292	0	24,292
2086	1,280,888,126	1,792,903	1,792,903	0	19,630	0	19,630
2087	1,371,895,757	1,542,833	1,542,833	0	15,751	0	15,751
2088	1,469,760,417	1,317,646	1,317,646	0	12,542	0	12,542
2089	1,574,953,472	1,116,422	1,116,422	0	9,909	0	9,909
2090	1,687,981,415	938,088	938,088	0	7,763	0	7,763
2091	1,809,388,569	781,381	781,381	0	6,029	0	6,029
2092	1,939,760,030	644,927	644,927	0	4,640	0	4,640
2093	2,079,724,735	527,236	527,236	0	3,537	0	3,537
2094	2,229,958,765	426,719	426,719	0	2,669	0	2,669
2095	2,391,188,858	341,759	341,759	0	1,993	0	1,993
2096	2,564,196,118	270,704	270,704	0	1,472	0	1,472
2097	2,749,819,992	211,932	211,932	0	1,074	0	1,074
2098	2,948,962,461	163,910	163,910	0	775	0	775
2099	3,162,592,491	125,164	125,164	0	552	0	552
2100	3,391,750,825	94,306	94,306	0	388	0	388
2101	3,637,555,094	70,070	70,070	0	269	0	269
2102	3,901,205,273	51,303	51,303	0	183	0	183
2103	4,183,989,525	36,980	36,980	0	123	0	123
2104	4,487,290,469	26,215	26,215	0	81	0	81
2105	4,812,591,879	18,256	18,256	0	53	0	53
2106	5,161,485,884	12,471	12,471	0	34	0	34
2107	5,535,680,695	8,346	8,346	0	21	0	21
2108	5,937,008,902	5,463	5,463	0	13	0	13
2109	6,367,436,390	3,492	3,492	0	8	0	8
2110	6,829,071,912	2,177	2,177	0	4	0	4
2111	7,324,177,371	1,321	1,321	0	3	0	3
2112	7,855,178,862	779	779	0	1	0	1
2113	8,424,678,522	446	446	0	1	0	1
2114	9,035,467,253	247	247	0	0	0	0
2115	9,690,538,373	133	133	0	0	0	0
2116	10,393,102,268	69	69	0	0	0	0
2117	11,146,602,112	34	34	0	0	0	0
2118	11,954,730,729	17	17	0	0	0	0
2119	12,821,448,689	8	8	0	0	0	0
2120	13,751,003,711	4	4	0	0	0	0
2121	14,747,951,476	2	2	0	0	0	0
<b>Totals</b>					\$ 226,222,438	\$ -	\$ 226,222,438

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.





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## **SECTION D**

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### **GLOSSARY OF TERMS**



# Glossary of Terms

## ***Actuarial Accrued Liability (AAL)***

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."

## ***Actuarial Assumptions***

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.

## ***Accrued Service***

Service credited under the fund which was rendered before the date of the actuarial valuation.

## ***Actuarial Equivalent***

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.

## ***Actuarial Cost Method***

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.

## ***Actuarial Gain (Loss)***

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.

## ***Actuarial Present Value (APV)***

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.

## ***Actuarial Valuation***

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.

## ***Actuarial Valuation Date***

The date as of which an actuarial valuation is performed.

## ***Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)***

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 (Continued)

### ***Amortization Payment***

The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.

### ***Amortization Method***

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).

### ***Cost-of-Living Adjustments***

Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.

### ***Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)***

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.

### ***Covered Valuation Payroll***

The earnings of covered employees for the year ended on the valuation date, which is typically only the pensionable pay and does not include pay above any pay cap. It is not necessarily the same as payroll actually paid because it excludes all pay for people who exited during the year.

### ***Deferred Inflows and Outflows***

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.

### ***Discount Rate***

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:

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
2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.

### ***Entry Age Actuarial Cost Method (EAN)***

The EAN is a funding 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.

## Glossary of Terms (Continued)

<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 value of the assets of the trust.
<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. 68, 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 contribution entities to plan members for benefits provided through a defined benefit pension plan.
<b><i>Non-Employer Contribution Entities</i></b>	Non-employer contribution 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 statement plan members are not considered non-employer contribution entities.
<b><i>Normal Cost</i></b>	The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.
<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 post-employment 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.

## Glossary of Terms (Concluded)

### ***Total Pension Expense***

The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year:

1. Service Cost;
2. Interest on the Total Pension Liability;
3. Current-Period Benefit Changes;
4. Employee Contributions (made negative for addition here);
5. Projected Earnings on Plan Investments (made negative for addition here);
6. Pension Plan Administrative Expense;
7. Other Changes in Plan Fiduciary Net Position;
8. Recognition of Outflow (Inflow) of Resources due to Liabilities;  
and
9. Recognition of Outflow (Inflow) of Resources due to Assets.

### ***Total Pension Liability (TPL)***

The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.

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

The UAAL is the difference between actuarial accrued liability and valuation assets.

### ***Valuation Assets***

The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of the GASB Statement No. 68, the valuation asset is equal to the market value of assets.