

Alsip Park Dist Regular

GASB Statement No. 68 Employer Reporting
Accounting Schedules
December 31, 2018



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March 27, 2019

Alsip Park Dist
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 Nos. 67 and 68 may produce significantly different results. This report may be provided to parties other than the Alsip Park Dist only in its entirety and only with the permission of Alsip Park Dist. 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, 2018 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 68 information related to Alsip Park Dist. 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.

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 herein. The signing actuaries are independent of the plan sponsor.

Respectfully submitted,



Mark Buis, FSA, EA, FCA, MAAA



Francois Pieterse, ASA, FCA, MAAA

MB/FP:dj

SECTION A

EXECUTIVE SUMMARY

Executive Summary as of December 31, 2018

| | |
|---|-------------------|
| Actuarial Valuation Date | December 31, 2018 |
| Measurement Date of the Net Pension Liability | December 31, 2018 |
| Fiscal Year End | April 30, 2019 |

Membership

| | |
|--|--------------|
| Number of | |
| - Retirees and Beneficiaries | 25 |
| - Inactive, Non-Retired Members | 30 |
| - Active Members | 29 |
| - Total | 84 |
| Covered Valuation Payroll ⁽¹⁾ | \$ 1,101,487 |

Net Pension Liability

| | |
|---|--------------|
| Total Pension Liability/(Asset) | \$ 6,651,963 |
| Plan Fiduciary Net Position | 5,469,528 |
| Net Pension Liability/(Asset) | \$ 1,182,435 |
| Plan Fiduciary Net Position as a Percentage of Total Pension Liability | 82.22% |
| Net Pension Liability as a Percentage of Covered Valuation Payroll | 107.35% |

Development of the Single Discount Rate as of December 31, 2018

| | |
|---|-------|
| Long-Term Expected Rate of Investment Return | 7.25% |
| Long-Term Municipal Bond Rate ⁽²⁾ | 3.71% |
| Last year ending December 31 in the 2019 to 2118 projection period for which projected benefit payments are fully funded | 2118 |
| Resulting Single Discount Rate based on the above development | 7.25% |
| Single Discount Rate calculated using December 31, 2017 Measurement Date | 7.50% |

Total Pension Expense/(Income) \$ 106,926

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 | \$ 185,752 | \$ 22,682 |
| Changes in assumptions | 147,310 | 69,875 |
| Net difference between projected and actual earnings on pension plan investments | 644,477 | 259,131 |
| Total | \$ 977,539 | \$ 351,688 |

⁽¹⁾ Does not necessarily represent Covered Employee Payroll as defined in GASB Statement Nos. 67-68.

⁽²⁾ 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, 2018. 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, 2018.

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 - B-5 of the December 31, 2018 Annual Actuarial Valuation report dated February 28, 2019);
- 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 10);
- significant assumptions and methods used to calculate the total pension liability (page 15);
- inputs to the single discount rate (page 16);
- certain information about mortality assumptions and the dates of experience studies (page 13 and page 15);
- 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 13 and 15);
- 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, 2018 Annual Actuarial Valuation report dated February 28, 2019, as well as page 13);
- 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 10);
- 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 10); 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 11);
- 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 11); and
- comparison of actual employer contributions to the actuarially determined contributions based on the plan's funding policy (page 12).

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 employer's prior fiscal year-end date. 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, 2018 and a measurement date of December 31, 2018.

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 3.71% (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 2118 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 of transferring the obligations to a 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

FINANCIAL STATEMENTS

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

Calendar Year Ended December 31, 2018

A. Expense/(Income)

| | | |
|---|-----------|----------------|
| 1. Service Cost | \$ | 105,468 |
| 2. Interest on the Total Pension Liability | | 441,523 |
| 3. Current-Period Benefit Changes | | 0 |
| 4. Employee Contributions (made negative for addition here) | | (49,567) |
| 5. Projected Earnings on Plan Investments (made negative for addition here) | | (428,002) |
| 6. Other Changes in Plan Fiduciary Net Position | | (151,102) |
| 7. Recognition of Outflow (Inflow) of Resources due to Liabilities | | 62,438 |
| 8. Recognition of Outflow (Inflow) of Resources due to Assets | | 126,168 |
| 9. Total Pension Expense/(Income) | \$ | 106,926 |

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 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 272.20 years. Additionally, the total plan membership (active employees and inactive employees) was **79**. 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 3.4456 years.

Additionally, differences between projected and actual earnings on pension plan investments should be recognized in 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, 2018

A. Outflows (Inflows) of Resources due to Liabilities

| | |
|--|------------|
| 1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses | \$ 187,495 |
| 2. Assumption Changes (gains) or losses | \$ 207,545 |
| 3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years} | 3.4456 |
| 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 | \$ 54,416 |
| 5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes | \$ 60,235 |
| 6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities | \$ 114,651 |
| 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 | \$ 133,079 |
| 8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes | \$ 147,310 |
| 9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities | \$ 280,389 |

B. Outflows (Inflows) of Resources due to Assets

| | |
|--|------------|
| 1. Net difference between projected and actual earnings on pension plan investments (gains) or losses | \$ 708,876 |
| 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 | \$ 141,775 |
| 4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets | \$ 567,101 |

* 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, 2018

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 | \$ 182,764 | \$ 120,326 | \$ 62,438 |
| 2. Due to Assets | 212,545 | 86,377 | 126,168 |
| 3. Total | \$ 395,309 | \$ 206,703 | \$ 188,606 |

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 | \$ 118,809 | \$ 54,640 | \$ 64,169 |
| 2. Assumption changes | 63,955 | 65,686 | (1,731) |
| 3. Net difference between projected and actual earnings on pension plan investments | 212,545 | 86,377 | 126,168 |
| 4. Total | \$ 395,309 | \$ 206,703 | \$ 188,606 |

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 | \$ 185,752 | \$ 22,682 | \$ 163,070 |
| 2. Assumption changes | 147,310 | 69,875 | 77,435 |
| 3. Net difference between projected and actual earnings on pension plan investments | 644,477 | 259,131 | 385,346 |
| 4. Total | \$ 977,539 | \$ 351,688 | \$ 625,851 |

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 |
|----------------------------|---------------------------------------|
| 2019 | \$ 202,695 |
| 2020 | 174,895 |
| 2021 | 106,485 |
| 2022 | 141,776 |
| 2023 | 0 |
| Thereafter | 0 |
| Total | \$ 625,851 |

Schedule of Changes in Net Pension Liability and Related Ratios Current Period Calendar Year Ended December 31, 2018

| | | |
|--|-----------|------------------|
| A. Total pension liability | | |
| 1. Service Cost | \$ | 105,468 |
| 2. Interest on the Total Pension Liability | | 441,523 |
| 3. Changes of benefit terms | | 0 |
| 4. Difference between expected and actual experience of the Total Pension Liability | | 187,495 |
| 5. Changes of assumptions | | 207,545 |
| 6. Benefit payments, including refunds of employee contributions | | (248,612) |
| 7. Net change in total pension liability | \$ | 693,419 |
| 8. Total pension liability – beginning | | 5,958,544 |
| 9. Total pension liability – ending | <u>\$</u> | <u>6,651,963</u> |
| B. Plan fiduciary net position | | |
| 1. Contributions – employer | \$ | 135,372 |
| 2. Contributions – employee | | 49,567 |
| 3. Net investment income | | (280,874) |
| 4. Benefit payments, including refunds of employee contributions | | (248,612) |
| 5. Other (Net Transfer) | | 151,102 |
| 6. Net change in plan fiduciary net position | \$ | (193,445) |
| 7. Plan fiduciary net position – beginning | | 5,662,973 |
| 8. Plan fiduciary net position – ending | <u>\$</u> | <u>5,469,528</u> |
| C. Net pension liability/(asset) | <u>\$</u> | <u>1,182,435</u> |
| D. Plan fiduciary net position as a percentage of the total pension liability | | 82.22% |
| E. Covered Valuation payroll | \$ | 1,101,487 |
| F. Net pension liability as a percentage of covered valuation payroll | | 107.35% |

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

| | 1% Decrease <u>6.25%</u> | Current Single Discount Rate Assumption <u>7.25%</u> | 1% Increase <u>8.25%</u> |
|-------------------------------|-----------------------------|--|-----------------------------|
| Total Pension Liability | \$ 7,597,205 | \$ 6,651,963 | \$ 5,885,568 |
| Plan Fiduciary Net Position | 5,469,528 | 5,469,528 | 5,469,528 |
| Net Pension Liability/(Asset) | \$ 2,127,677 | \$ 1,182,435 | \$ 416,040 |

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, | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 |
|---|--------------|--------------|--------------|--------------|------|------|------|------|------|------|
| Total Pension Liability | | | | | | | | | | |
| Service Cost | \$ 105,468 | \$ 96,242 | \$ 109,139 | \$ 113,280 | | | | | | |
| Interest on the Total Pension Liability | 441,523 | 422,508 | 411,317 | 378,708 | | | | | | |
| Benefit Changes | 0 | 0 | 0 | 0 | | | | | | |
| Difference between Expected and Actual Experience | 187,495 | 145,089 | (186,602) | 74,069 | | | | | | |
| Assumption Changes | 207,545 | (184,589) | (23,556) | 15,147 | | | | | | |
| Benefit Payments and Refunds | (248,612) | (212,057) | (141,258) | (116,864) | | | | | | |
| Net Change in Total Pension Liability | 693,419 | 267,193 | 169,040 | 464,340 | | | | | | |
| Total Pension Liability - Beginning | 5,958,544 | 5,691,351 | 5,522,311 | 5,057,971 | | | | | | |
| Total Pension Liability - Ending (a) | \$ 6,651,963 | \$ 5,958,544 | \$ 5,691,351 | \$ 5,522,311 | | | | | | |
| Plan Fiduciary Net Position | | | | | | | | | | |
| Employer Contributions | \$ 135,372 | \$ 126,481 | \$ 111,845 | \$ 113,877 | | | | | | |
| Employee Contributions | 49,567 | 47,402 | 42,870 | 46,927 | | | | | | |
| Pension Plan Net Investment Income | (280,874) | 799,888 | 312,759 | 23,176 | | | | | | |
| Benefit Payments and Refunds | (248,612) | (212,057) | (141,258) | (116,864) | | | | | | |
| Other | 151,102 | (49,068) | 40,740 | (96,914) | | | | | | |
| Net Change in Plan Fiduciary Net Position | (193,445) | 712,646 | 366,956 | (29,798) | | | | | | |
| Plan Fiduciary Net Position - Beginning | 5,662,973 | 4,950,327 | 4,583,371 | 4,613,169 | | | | | | |
| Plan Fiduciary Net Position - Ending (b) | \$ 5,469,528 | \$ 5,662,973 | \$ 4,950,327 | \$ 4,583,371 | | | | | | |
| Net Pension Liability/(Asset) - Ending (a) - (b) | 1,182,435 | 295,571 | 741,024 | 938,940 | | | | | | |
| Plan Fiduciary Net Position as a Percentage of Total Pension Liability | 82.22% | 95.04 % | 86.98 % | 83.00% | | | | | | |
| Covered Valuation Payroll | \$ 1,101,487 | \$ 999,847 | \$ 952,673 | \$ 1,042,824 | | | | | | |
| Net Pension Liability as a Percentage of Covered Valuation Payroll | 107.35% | 29.56 % | 77.78 % | 90.04% | | | | | | |

Multiyear Schedule of Contributions

Last 10 Calendar Years

| <u>Calendar Year Ending December 31,</u> | <u>Actuarially Determined Contribution</u> | <u>Actual Contribution</u> | <u>Contribution Deficiency (Excess)</u> | <u>Covered Valuation Payroll</u> | <u>Actual Contribution as a % of Covered Valuation Payroll</u> |
|--|--|--------------------------------|---|--|--|
| 2015 | \$ 113,876 | \$ 113,877 | \$ (1) | \$ 1,042,824 | 10.92% |
| 2016 | 111,844 | 111,845 | (1) | 952,673 | 11.74% |
| 2017 | 126,481 | 126,481 | 0 | 999,847 | 12.65% |
| 2018 | 135,373 * | 135,372 | 1 | 1,101,487 | 12.29% |

* Estimated based on contribution rate of 12.29% and covered valuation payroll of \$1,101,487.
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 2018 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 fiscal year in which contributions are reported.

Methods and Assumptions Used to Determine 2018 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): 25-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 20 years for most employers (three employers were financed over 29 years). |
| Asset Valuation Method | 5-Year smoothed market; 20% corridor |
| Wage growth | 3.50% |
| Price Inflation | 2.75% |
| Salary Increases | 3.75% to 14.50% including inflation |
| Investment Rate of Return | 7.50% |
| Retirement Age | Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2014 valuation pursuant to an experience study of the period 2011-2013. |
| Mortality | For non-disabled retirees, an IMRF specific mortality table was used with fully generational projection scale MP-2014 (base year 2012). The IMRF specific rates were developed from the RP-2014 Blue Collar Health Annuitant Mortality Table with adjustments to match current IMRF experience. For disabled retirees, an IMRF specific mortality table was used with fully generational projection scale MP-2014 (base year 2012). The IMRF specific rates were developed from the RP-2014 Disabled Retirees Mortality Table applying the same adjustment that were applied for non-disabled lives. For active members, an IMRF specific mortality table was used with fully generational projection scale MP-2014 (base year 2012). 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, 2016 actuarial valuation.

Development of Market Value of Assets

Market Value of Assets as of December 31, 2018

| | | |
|---|-----------|------------------|
| 1. Employee Contribution Reserve (MDF Assets from IMRF) | \$ | 1,088,054 |
| 2. Employer Contribution Reserve (EAF assets from IMRF) | \$ | 1,031,913 |
| 3. Annuitant Reserve | \$ | 3,334,449 |
| 4. Miscellaneous Adjustment* | \$ | 15,112 |
| 5. Net Market Value | \$ | 5,469,528 |

* Includes an adjustment factor of 0.0027705476 on Items 1 through 3 to ensure that Market Value of Assets for all employers balances 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 | \$ | 135,372 |
| b.) Accelerated payments and Reserve Payments | | - |
| | \$ | 135,372 |

2. Member

| | | |
|---|-----------|---------------|
| a.) Wage Reporting | \$ | 49,567 |
| b.) Member Payments (i.e. ERI, Pension Payments) | | - |
| Sub-total (Amount used for valuation on Schedule of Changes Page 10) | \$ | 49,567 |

| | | |
|---|-----------|---------------|
| c.) Voluntary Additional Plan | \$ | 12,651 |
| Total Member Contributions (a+b+c) | \$ | 62,218 |

| | | |
|--|-----------|----------------|
| Total Employer and Member Contributions (1+2) | \$ | 197,590 |
|--|-----------|----------------|

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 | 2.50% |
| Salary Increases | 3.39% to 14.25% |
| 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, an IMRF specific mortality table was used with fully generational projection scale MP-2017 (base year 2015). The IMRF specific rates were developed from the RP-2014 Blue Collar Health Annuitant Mortality Table with adjustments to match current IMRF experience. For disabled retirees, an IMRF specific mortality table was 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 adjustment that were applied for non-disabled lives. For active members, an IMRF specific mortality table was 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. |
|-------|--|

A detailed description of the actuarial assumptions and methods can be found in the December 31, 2018 Illinois Municipal Retirement Fund annual actuarial valuation report.

SECTION C

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 3.71%; 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 and future 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 Single Discount Rate (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 |
|------|-------------------------------|--------------------------------------|---------------------------|-------------------|---------------------|
| 2018 | \$ 1,101,487 | | | | |
| 2019 | 1,041,745 | \$ 46,879 | \$ 62,888 | \$ 59,837 | \$ 169,604 |
| 2020 | 993,048 | 44,687 | 62,233 | 66,727 | 173,648 |
| 2021 | 951,981 | 42,839 | 59,565 | 74,330 | 176,734 |
| 2022 | 901,243 | 40,556 | 56,751 | 82,731 | 180,038 |
| 2023 | 845,497 | 38,047 | 53,240 | 92,027 | 183,315 |
| 2024 | 800,710 | 36,032 | 50,340 | 94,327 | 180,699 |
| 2025 | 763,375 | 34,352 | 47,916 | 96,686 | 178,954 |
| 2026 | 734,480 | 33,052 | 46,029 | 99,103 | 178,184 |
| 2027 | 709,416 | 31,924 | 44,388 | 101,580 | 177,891 |
| 2028 | 685,460 | 30,846 | 42,751 | 104,120 | 177,717 |
| 2029 | 659,938 | 29,697 | 41,094 | 106,723 | 177,514 |
| 2030 | 630,528 | 28,374 | 39,136 | 109,391 | 176,901 |
| 2031 | 600,692 | 27,031 | 37,164 | 112,126 | 176,321 |
| 2032 | 571,388 | 25,712 | 35,294 | 114,929 | 175,935 |
| 2033 | 536,554 | 24,145 | 33,035 | 117,802 | 174,982 |
| 2034 | 495,858 | 22,314 | 30,380 | 120,747 | 173,441 |
| 2035 | 452,746 | 20,374 | 27,512 | 123,766 | 171,652 |
| 2036 | 413,374 | 18,602 | 24,872 | 126,860 | 170,334 |
| 2037 | 380,483 | 17,122 | 22,664 | 130,031 | 169,817 |
| 2038 | 346,153 | 15,577 | 20,412 | 133,282 | 169,270 |
| 2039 | 312,280 | 14,053 | 18,133 | 136,614 | 168,800 |
| 2040 | 280,842 | 12,638 | 16,054 | 140,030 | 168,722 |
| 2041 | 250,766 | 11,284 | 14,084 | 143,530 | 168,899 |
| 2042 | 224,419 | 10,099 | 12,313 | 147,119 | 169,530 |
| 2043 | 204,641 | 9,209 | 10,982 | 0 | 20,191 |
| 2044 | 189,229 | 8,515 | 9,927 | 0 | 18,443 |
| 2045 | 175,277 | 7,888 | 9,038 | 0 | 16,925 |
| 2046 | 163,408 | 7,353 | 8,278 | 0 | 15,632 |
| 2047 | 151,782 | 6,830 | 7,538 | 0 | 14,368 |
| 2048 | 140,440 | 6,320 | 6,834 | 0 | 13,154 |
| 2049 | 132,769 | 5,975 | 6,314 | 0 | 12,289 |
| 2050 | 127,232 | 5,725 | 5,924 | 0 | 11,649 |
| 2051 | 112,763 | 5,074 | 5,149 | 0 | 10,223 |
| 2052 | 96,150 | 4,327 | 4,323 | 0 | 8,649 |
| 2053 | 90,346 | 4,066 | 4,026 | 0 | 8,091 |
| 2054 | 87,808 | 3,951 | 3,851 | 0 | 7,802 |
| 2055 | 78,550 | 3,535 | 3,390 | 0 | 6,925 |
| 2056 | 58,313 | 2,624 | 2,493 | 0 | 5,117 |
| 2057 | 40,776 | 1,835 | 1,731 | 0 | 3,566 |
| 2058 | 33,473 | 1,506 | 1,418 | 0 | 2,924 |
| 2059 | 20,770 | 935 | 880 | 0 | 1,814 |
| 2060 | 5,905 | 266 | 252 | 0 | 518 |
| 2061 | 2,021 | 91 | 93 | 0 | 184 |
| 2062 | 932 | 42 | 48 | 0 | 90 |
| 2063 | 521 | 23 | 31 | 0 | 55 |
| 2064 | 317 | 14 | 20 | 0 | 35 |
| 2065 | 140 | 6 | 10 | 0 | 16 |
| 2066 | 1 | 0 | 0 | 0 | 0 |
| 2067 | 0 | 0 | 0 | 0 | 0 |
| 2068 | 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 |
|------|-------------------------------|--------------------------------------|---------------------------|-------------------|---------------------|
| 2069 | \$ 0 | \$ 0 | \$ 0 | \$ 0 | 0 |
| 2070 | 0 | 0 | 0 | 0 | 0 |
| 2071 | 0 | 0 | 0 | 0 | 0 |
| 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 |

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) | | | | | |
| 2019 | \$ 5,469,528 | \$ 169,604 | \$ 286,501 | \$ 392,377 | \$ 5,745,008 | | | | | |
| 2020 | 5,745,008 | 173,648 | 299,401 | 412,034 | 6,031,288 | | | | | |
| 2021 | 6,031,288 | 176,734 | 314,009 | 432,379 | 6,326,393 | | | | | |
| 2022 | 6,326,393 | 180,038 | 343,587 | 452,839 | 6,615,682 | | | | | |
| 2023 | 6,615,682 | 183,314 | 374,406 | 472,831 | 6,897,421 | | | | | |
| 2024 | 6,897,421 | 180,699 | 398,951 | 492,290 | 7,171,459 | | | | | |
| 2025 | 7,171,459 | 178,954 | 426,362 | 511,119 | 7,435,170 | | | | | |
| 2026 | 7,435,170 | 178,184 | 452,565 | 529,278 | 7,690,067 | | | | | |
| 2027 | 7,690,067 | 177,892 | 472,256 | 547,046 | 7,942,748 | | | | | |
| 2028 | 7,942,748 | 177,717 | 496,641 | 564,491 | 8,188,315 | | | | | |
| 2029 | 8,188,315 | 177,514 | 525,659 | 581,253 | 8,421,422 | | | | | |
| 2030 | 8,421,422 | 176,901 | 552,691 | 597,169 | 8,642,801 | | | | | |
| 2031 | 8,642,801 | 176,321 | 586,350 | 612,000 | 8,844,771 | | | | | |
| 2032 | 8,844,771 | 175,935 | 615,859 | 625,578 | 9,030,425 | | | | | |
| 2033 | 9,030,425 | 174,982 | 641,812 | 638,079 | 9,201,673 | | | | | |
| 2034 | 9,201,673 | 173,441 | 671,209 | 649,393 | 9,353,298 | | | | | |
| 2035 | 9,353,298 | 171,652 | 702,034 | 659,224 | 9,482,141 | | | | | |
| 2036 | 9,482,141 | 170,333 | 726,072 | 667,662 | 9,594,064 | | | | | |
| 2037 | 9,594,064 | 169,817 | 749,284 | 674,931 | 9,689,529 | | | | | |
| 2038 | 9,689,529 | 169,271 | 773,944 | 680,955 | 9,765,810 | | | | | |
| 2039 | 9,765,810 | 168,800 | 796,661 | 685,659 | 9,823,608 | | | | | |
| 2040 | 9,823,608 | 168,722 | 818,178 | 689,081 | 9,863,233 | | | | | |
| 2041 | 9,863,233 | 168,899 | 837,658 | 691,266 | 9,885,740 | | | | | |
| 2042 | 9,885,740 | 169,530 | 850,736 | 692,454 | 9,896,988 | | | | | |
| 2043 | 9,896,988 | 20,191 | 857,744 | 687,702 | 9,747,136 | | | | | |
| 2044 | 9,747,136 | 18,443 | 860,919 | 676,662 | 9,581,322 | | | | | |
| 2045 | 9,581,322 | 16,925 | 861,828 | 664,554 | 9,400,972 | | | | | |
| 2046 | 9,400,972 | 15,632 | 859,780 | 651,505 | 9,208,329 | | | | | |
| 2047 | 9,208,329 | 14,368 | 857,272 | 637,583 | 9,003,008 | | | | | |
| 2048 | 9,003,008 | 13,154 | 851,614 | 622,856 | 8,787,403 | | | | | |
| 2049 | 8,787,403 | 12,289 | 842,069 | 607,533 | 8,565,157 | | | | | |
| 2050 | 8,565,157 | 11,649 | 830,066 | 591,825 | 8,338,565 | | | | | |
| 2051 | 8,338,565 | 10,223 | 829,358 | 575,372 | 8,094,802 | | | | | |
| 2052 | 8,094,802 | 8,649 | 823,521 | 557,851 | 7,837,782 | | | | | |
| 2053 | 7,837,782 | 8,091 | 809,520 | 539,696 | 7,576,048 | | | | | |
| 2054 | 7,576,048 | 7,802 | 791,957 | 521,335 | 7,313,229 | | | | | |
| 2055 | 7,313,229 | 6,925 | 783,813 | 502,540 | 7,038,880 | | | | | |
| 2056 | 7,038,880 | 5,117 | 783,452 | 482,598 | 6,743,144 | | | | | |
| 2057 | 6,743,144 | 3,566 | 774,662 | 461,415 | 6,433,463 | | | | | |
| 2058 | 6,433,463 | 2,924 | 754,306 | 439,665 | 6,121,746 | | | | | |
| 2059 | 6,121,746 | 1,814 | 744,829 | 417,364 | 5,796,095 | | | | | |
| 2060 | 5,796,095 | 518 | 729,816 | 394,242 | 5,461,039 | | | | | |
| 2061 | 5,461,039 | 184 | 702,436 | 370,914 | 5,129,701 | | | | | |
| 2062 | 5,129,701 | 90 | 673,159 | 347,931 | 4,804,564 | | | | | |
| 2063 | 4,804,564 | 55 | 642,933 | 325,434 | 4,487,120 | | | | | |
| 2064 | 4,487,120 | 35 | 612,249 | 303,512 | 4,178,417 | | | | | |
| 2065 | 4,178,417 | 16 | 581,372 | 282,230 | 3,879,291 | | | | | |
| 2066 | 3,879,291 | 0 | 549,848 | 261,665 | 3,591,108 | | | | | |
| 2067 | 3,591,108 | 0 | 518,033 | 241,905 | 3,314,980 | | | | | |
| 2068 | 3,314,980 | 0 | 486,226 | 223,019 | 3,051,773 | | | | | |

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) |
| 2069 | \$ 3,051,773 | \$ 0 | \$ 454,638 | \$ 205,061 | \$ 2,802,196 |
| 2070 | 2,802,196 | 0 | 423,500 | 188,076 | 2,566,772 |
| 2071 | 2,566,772 | 0 | 393,044 | 172,092 | 2,345,820 |
| 2072 | 2,345,820 | 0 | 363,456 | 157,127 | 2,139,491 |
| 2073 | 2,139,491 | 0 | 334,902 | 143,185 | 1,947,774 |
| 2074 | 1,947,774 | 0 | 307,555 | 130,260 | 1,770,479 |
| 2075 | 1,770,479 | 0 | 281,585 | 118,331 | 1,607,225 |
| 2076 | 1,607,225 | 0 | 257,157 | 107,365 | 1,457,432 |
| 2077 | 1,457,432 | 0 | 234,418 | 97,315 | 1,320,329 |
| 2078 | 1,320,329 | 0 | 213,464 | 88,121 | 1,194,987 |
| 2079 | 1,194,987 | 0 | 194,331 | 79,715 | 1,080,371 |
| 2080 | 1,080,371 | 0 | 176,994 | 72,023 | 975,400 |
| 2081 | 975,400 | 0 | 161,352 | 64,970 | 879,017 |
| 2082 | 879,017 | 0 | 147,240 | 58,485 | 790,262 |
| 2083 | 790,262 | 0 | 134,474 | 52,505 | 708,292 |
| 2084 | 708,292 | 0 | 122,866 | 46,975 | 632,401 |
| 2085 | 632,401 | 0 | 112,218 | 41,852 | 562,036 |
| 2086 | 562,036 | 0 | 102,346 | 37,102 | 496,792 |
| 2087 | 496,792 | 0 | 93,097 | 32,702 | 436,397 |
| 2088 | 436,397 | 0 | 84,360 | 28,634 | 380,670 |
| 2089 | 380,670 | 0 | 76,071 | 24,889 | 329,489 |
| 2090 | 329,489 | 0 | 68,189 | 21,459 | 282,759 |
| 2091 | 282,759 | 0 | 60,694 | 18,338 | 240,404 |
| 2092 | 240,404 | 0 | 53,588 | 15,521 | 202,336 |
| 2093 | 202,336 | 0 | 46,891 | 12,999 | 168,444 |
| 2094 | 168,444 | 0 | 40,622 | 10,765 | 138,587 |
| 2095 | 138,587 | 0 | 34,805 | 8,808 | 112,591 |
| 2096 | 112,591 | 0 | 29,462 | 7,114 | 90,243 |
| 2097 | 90,243 | 0 | 24,617 | 5,666 | 71,291 |
| 2098 | 71,291 | 0 | 20,286 | 4,446 | 55,452 |
| 2099 | 55,452 | 0 | 16,464 | 3,434 | 42,421 |
| 2100 | 42,421 | 0 | 13,142 | 2,607 | 31,887 |
| 2101 | 31,887 | 0 | 10,308 | 1,945 | 23,524 |
| 2102 | 23,524 | 0 | 7,937 | 1,423 | 17,010 |
| 2103 | 17,010 | 0 | 5,990 | 1,020 | 12,040 |
| 2104 | 12,040 | 0 | 4,424 | 715 | 8,331 |
| 2105 | 8,331 | 0 | 3,195 | 490 | 5,626 |
| 2106 | 5,626 | 0 | 2,252 | 328 | 3,702 |
| 2107 | 3,702 | 0 | 1,546 | 213 | 2,369 |
| 2108 | 2,369 | 0 | 1,032 | 135 | 1,472 |
| 2109 | 1,472 | 0 | 668 | 83 | 886 |
| 2110 | 886 | 0 | 420 | 49 | 516 |
| 2111 | 516 | 0 | 255 | 28 | 289 |
| 2112 | 289 | 0 | 149 | 16 | 155 |
| 2113 | 155 | 0 | 84 | 8 | 80 |
| 2114 | 80 | 0 | 45 | 4 | 39 |
| 2115 | 39 | 0 | 23 | 2 | 18 |
| 2116 | 18 | 0 | 11 | 1 | 8 |
| 2117 | 8 | 0 | 5 | 0 | 3 |
| 2118 | 3 | 0 | 3 | 0 | 1 |

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 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 ^{((a)-.5)} | (g)=(e)*vf ^{((a)-.5)} | (h)=(c)/(1+sdr) ^{((a)-.5)} |
| 2019 | \$ 5,469,528 | \$ 286,501 | \$ 286,501 | \$ 0 | \$ 276,648 | \$ 0 | \$ 276,648 |
| 2020 | 5,745,008 | 299,401 | 299,401 | 0 | 269,561 | 0 | 269,561 |
| 2021 | 6,031,288 | 314,009 | 314,009 | 0 | 263,602 | 0 | 263,602 |
| 2022 | 6,326,393 | 343,587 | 343,587 | 0 | 268,934 | 0 | 268,934 |
| 2023 | 6,615,682 | 374,406 | 374,406 | 0 | 273,247 | 0 | 273,247 |
| 2024 | 6,897,421 | 398,951 | 398,951 | 0 | 271,478 | 0 | 271,478 |
| 2025 | 7,171,459 | 426,362 | 426,362 | 0 | 270,518 | 0 | 270,518 |
| 2026 | 7,435,170 | 452,565 | 452,565 | 0 | 267,732 | 0 | 267,732 |
| 2027 | 7,690,067 | 472,256 | 472,256 | 0 | 260,495 | 0 | 260,495 |
| 2028 | 7,942,748 | 496,641 | 496,641 | 0 | 255,428 | 0 | 255,428 |
| 2029 | 8,188,315 | 525,659 | 525,659 | 0 | 252,077 | 0 | 252,077 |
| 2030 | 8,421,422 | 552,691 | 552,691 | 0 | 247,123 | 0 | 247,123 |
| 2031 | 8,642,801 | 586,350 | 586,350 | 0 | 244,450 | 0 | 244,450 |
| 2032 | 8,844,771 | 615,859 | 615,859 | 0 | 239,397 | 0 | 239,397 |
| 2033 | 9,030,425 | 641,812 | 641,812 | 0 | 232,620 | 0 | 232,620 |
| 2034 | 9,201,673 | 671,209 | 671,209 | 0 | 226,829 | 0 | 226,829 |
| 2035 | 9,353,298 | 702,034 | 702,034 | 0 | 221,209 | 0 | 221,209 |
| 2036 | 9,482,141 | 726,072 | 726,072 | 0 | 213,318 | 0 | 213,318 |
| 2037 | 9,594,064 | 749,284 | 749,284 | 0 | 205,256 | 0 | 205,256 |
| 2038 | 9,689,529 | 773,944 | 773,944 | 0 | 197,680 | 0 | 197,680 |
| 2039 | 9,765,810 | 796,661 | 796,661 | 0 | 189,727 | 0 | 189,727 |
| 2040 | 9,823,608 | 818,178 | 818,178 | 0 | 181,679 | 0 | 181,679 |
| 2041 | 9,863,233 | 837,658 | 837,658 | 0 | 173,431 | 0 | 173,431 |
| 2042 | 9,885,740 | 850,736 | 850,736 | 0 | 164,232 | 0 | 164,232 |
| 2043 | 9,896,988 | 857,744 | 857,744 | 0 | 154,392 | 0 | 154,392 |
| 2044 | 9,747,136 | 860,919 | 860,919 | 0 | 144,488 | 0 | 144,488 |
| 2045 | 9,581,322 | 861,828 | 861,828 | 0 | 134,863 | 0 | 134,863 |
| 2046 | 9,400,972 | 859,780 | 859,780 | 0 | 125,447 | 0 | 125,447 |
| 2047 | 9,208,329 | 857,272 | 857,272 | 0 | 116,626 | 0 | 116,626 |
| 2048 | 9,003,008 | 851,614 | 851,614 | 0 | 108,025 | 0 | 108,025 |
| 2049 | 8,787,403 | 842,069 | 842,069 | 0 | 99,593 | 0 | 99,593 |
| 2050 | 8,565,157 | 830,066 | 830,066 | 0 | 91,537 | 0 | 91,537 |
| 2051 | 8,338,565 | 829,358 | 829,358 | 0 | 85,277 | 0 | 85,277 |
| 2052 | 8,094,802 | 823,521 | 823,521 | 0 | 78,952 | 0 | 78,952 |
| 2053 | 7,837,782 | 809,520 | 809,520 | 0 | 72,364 | 0 | 72,364 |
| 2054 | 7,576,048 | 791,957 | 791,957 | 0 | 66,008 | 0 | 66,008 |
| 2055 | 7,313,229 | 783,813 | 783,813 | 0 | 60,913 | 0 | 60,913 |
| 2056 | 7,038,880 | 783,452 | 783,452 | 0 | 56,769 | 0 | 56,769 |
| 2057 | 6,743,144 | 774,662 | 774,662 | 0 | 52,338 | 0 | 52,338 |
| 2058 | 6,433,463 | 754,306 | 754,306 | 0 | 47,518 | 0 | 47,518 |
| 2059 | 6,121,746 | 744,829 | 744,829 | 0 | 43,749 | 0 | 43,749 |
| 2060 | 5,796,095 | 729,816 | 729,816 | 0 | 39,969 | 0 | 39,969 |
| 2061 | 5,461,039 | 702,436 | 702,436 | 0 | 35,869 | 0 | 35,869 |
| 2062 | 5,129,701 | 673,159 | 673,159 | 0 | 32,051 | 0 | 32,051 |
| 2063 | 4,804,564 | 642,933 | 642,933 | 0 | 28,542 | 0 | 28,542 |
| 2064 | 4,487,120 | 612,249 | 612,249 | 0 | 25,343 | 0 | 25,343 |
| 2065 | 4,178,417 | 581,372 | 581,372 | 0 | 22,438 | 0 | 22,438 |
| 2066 | 3,879,291 | 549,848 | 549,848 | 0 | 19,787 | 0 | 19,787 |
| 2067 | 3,591,108 | 518,033 | 518,033 | 0 | 17,382 | 0 | 17,382 |
| 2068 | 3,314,980 | 486,226 | 486,226 | 0 | 15,211 | 0 | 15,211 |

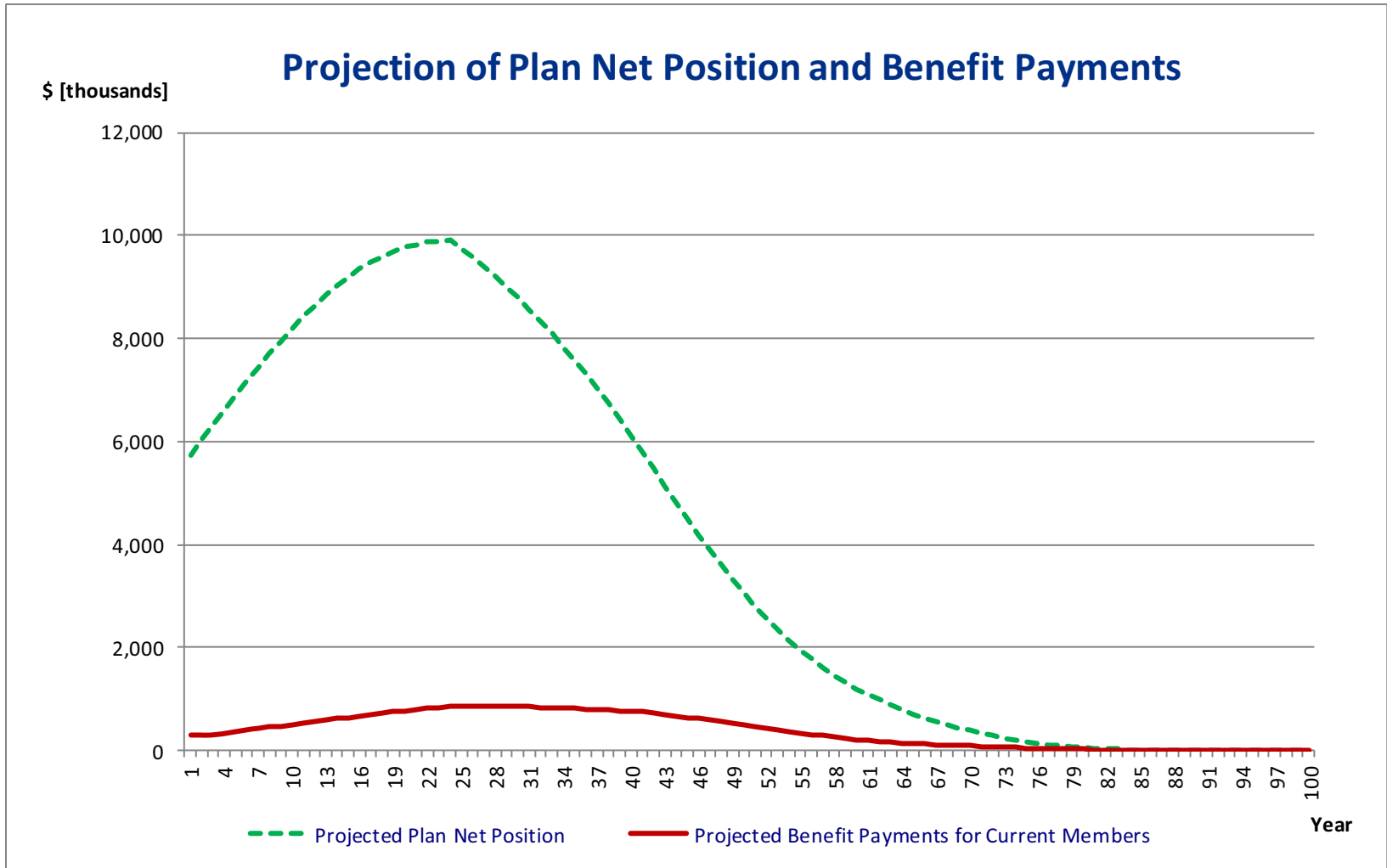
The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

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 ⁿ ((a)-.5) | (g)=(e)*vf ⁿ ((a)-.5) | (h)=(c)/(1+sdr) ⁿ ((a)-.5) |
| 2069 | \$ 3,051,773 | \$ 454,638 | \$ 454,638 | \$ 0 | \$ 13,262 | \$ 0 | \$ 13,262 |
| 2070 | 2,802,196 | 423,500 | 423,500 | 0 | 11,518 | 0 | 11,518 |
| 2071 | 2,566,772 | 393,044 | 393,044 | 0 | 9,967 | 0 | 9,967 |
| 2072 | 2,345,820 | 363,456 | 363,456 | 0 | 8,594 | 0 | 8,594 |
| 2073 | 2,139,491 | 334,902 | 334,902 | 0 | 7,384 | 0 | 7,384 |
| 2074 | 1,947,774 | 307,555 | 307,555 | 0 | 6,322 | 0 | 6,322 |
| 2075 | 1,770,479 | 281,585 | 281,585 | 0 | 5,397 | 0 | 5,397 |
| 2076 | 1,607,225 | 257,157 | 257,157 | 0 | 4,596 | 0 | 4,596 |
| 2077 | 1,457,432 | 234,418 | 234,418 | 0 | 3,906 | 0 | 3,906 |
| 2078 | 1,320,329 | 213,464 | 213,464 | 0 | 3,317 | 0 | 3,317 |
| 2079 | 1,194,987 | 194,331 | 194,331 | 0 | 2,815 | 0 | 2,815 |
| 2080 | 1,080,371 | 176,994 | 176,994 | 0 | 2,391 | 0 | 2,391 |
| 2081 | 975,400 | 161,352 | 161,352 | 0 | 2,032 | 0 | 2,032 |
| 2082 | 879,017 | 147,240 | 147,240 | 0 | 1,729 | 0 | 1,729 |
| 2083 | 790,262 | 134,474 | 134,474 | 0 | 1,472 | 0 | 1,472 |
| 2084 | 708,292 | 122,866 | 122,866 | 0 | 1,254 | 0 | 1,254 |
| 2085 | 632,401 | 112,218 | 112,218 | 0 | 1,068 | 0 | 1,068 |
| 2086 | 562,036 | 102,346 | 102,346 | 0 | 908 | 0 | 908 |
| 2087 | 496,792 | 93,097 | 93,097 | 0 | 770 | 0 | 770 |
| 2088 | 436,397 | 84,360 | 84,360 | 0 | 651 | 0 | 651 |
| 2089 | 380,670 | 76,071 | 76,071 | 0 | 547 | 0 | 547 |
| 2090 | 329,489 | 68,189 | 68,189 | 0 | 457 | 0 | 457 |
| 2091 | 282,759 | 60,694 | 60,694 | 0 | 380 | 0 | 380 |
| 2092 | 240,404 | 53,588 | 53,588 | 0 | 313 | 0 | 313 |
| 2093 | 202,336 | 46,891 | 46,891 | 0 | 255 | 0 | 255 |
| 2094 | 168,444 | 40,622 | 40,622 | 0 | 206 | 0 | 206 |
| 2095 | 138,587 | 34,805 | 34,805 | 0 | 165 | 0 | 165 |
| 2096 | 112,591 | 29,462 | 29,462 | 0 | 130 | 0 | 130 |
| 2097 | 90,243 | 24,617 | 24,617 | 0 | 101 | 0 | 101 |
| 2098 | 71,291 | 20,286 | 20,286 | 0 | 78 | 0 | 78 |
| 2099 | 55,452 | 16,464 | 16,464 | 0 | 59 | 0 | 59 |
| 2100 | 42,421 | 13,142 | 13,142 | 0 | 44 | 0 | 44 |
| 2101 | 31,887 | 10,308 | 10,308 | 0 | 32 | 0 | 32 |
| 2102 | 23,524 | 7,937 | 7,937 | 0 | 23 | 0 | 23 |
| 2103 | 17,010 | 5,990 | 5,990 | 0 | 16 | 0 | 16 |
| 2104 | 12,040 | 4,424 | 4,424 | 0 | 11 | 0 | 11 |
| 2105 | 8,331 | 3,195 | 3,195 | 0 | 8 | 0 | 8 |
| 2106 | 5,626 | 2,252 | 2,252 | 0 | 5 | 0 | 5 |
| 2107 | 3,702 | 1,546 | 1,546 | 0 | 3 | 0 | 3 |
| 2108 | 2,369 | 1,032 | 1,032 | 0 | 2 | 0 | 2 |
| 2109 | 1,472 | 668 | 668 | 0 | 1 | 0 | 1 |
| 2110 | 886 | 420 | 420 | 0 | 1 | 0 | 1 |
| 2111 | 516 | 255 | 255 | 0 | 0 | 0 | 0 |
| 2112 | 289 | 149 | 149 | 0 | 0 | 0 | 0 |
| 2113 | 155 | 84 | 84 | 0 | 0 | 0 | 0 |
| 2114 | 80 | 45 | 45 | 0 | 0 | 0 | 0 |
| 2115 | 39 | 23 | 23 | 0 | 0 | 0 | 0 |
| 2116 | 18 | 11 | 11 | 0 | 0 | 0 | 0 |
| 2117 | 8 | 5 | 5 | 0 | 0 | 0 | 0 |
| 2118 | 3 | 3 | 3 | 0 | 0 | 0 | 0 |
| Totals | \$ 7,534,313 | \$ - | \$ - | \$ - | \$ 7,534,313 | \$ - | \$ 7,534,313 |

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

GLOSSARY OF TERMS

Glossary of Terms

| | |
|---|---|
| <i>Actuarial Accrued Liability (AAL)</i> | 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." |
| <i>Actuarial Assumptions</i> | 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. |
| <i>Accrued Service</i> | Service credited under the fund which was rendered before the date of the actuarial valuation. |
| <i>Actuarial Equivalent</i> | 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. |
| <i>Actuarial Cost Method</i> | 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. |
| <i>Actuarial Gain (Loss)</i> | 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. |
| <i>Actuarial Present Value (APV)</i> | 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. |
| <i>Actuarial Valuation</i> | 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. |
| <i>Actuarial Valuation Date</i> | The date as of which an actuarial valuation is performed. |
| <i>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</i> | 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)

| | |
|---|---|
| <i>Amortization Payment</i> | The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal. |
| <i>Amortization Method</i> | 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). |
| <i>Cost-of-Living Adjustments</i> | Postemployment benefit changes intended to adjust benefit payments for the effects of inflation. |
| <i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i> | 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. |
| <i>Covered Valuation Payroll</i> | 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. |
| <i>Deferred Inflows and Outflows</i> | 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. |
| <i>Discount Rate</i> | 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">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; and2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate. |
| <i>Entry Age Actuarial Cost Method (EAN)</i> | 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 ages(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)

| | |
|--|--|
| <i>GASB</i> | The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities. |
| <i>Fiduciary Net Position</i> | The fiduciary net position is the value of the assets of the trust. |
| <i>Long-Term Expected Rate of Return</i> | 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. |
| <i>Money-Weighted Rate of Return</i> | 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. |
| <i>Multiple-Employer Defined Benefit Pension Plan</i> | A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer. |
| <i>Municipal Bond Rate</i> | 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. |
| <i>Net Pension Liability (NPL)</i> | The NPL is the liability of employers and non-employer contribution entities to plan members for benefits provided through a defined benefit pension plan. |
| <i>Non-Employer Contribution Entities</i> | 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. |
| <i>Normal Cost</i> | The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method. |
| <i>Other Postemployment Benefits (OPEB)</i> | 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. |
| <i>Real Rate of Return</i> | The real rate of return is the rate of return on an investment after adjustment to eliminate inflation. |
| <i>Service Cost</i> | 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.