

The General Retirement System of the City of Detroit

GASB Statement No. 68 Employer Reporting and
Accounting Schedules of Component II

June 30, 2016





September 20, 2017

Board of Trustees
The General Retirement System of the City of Detroit

Dear Board Members:

This report provides information required for the General Retirement System of the City of Detroit in connection with the Governmental Accounting Standards Board (GASB) Statement No. 68 "Employer Reporting for Pension Plans." These calculations have been made on a basis that is consistent with our understanding of this Statement. This information is subject to the System's Auditor's review. Please let us know if the System's Auditor recommends any changes. This report covers the General Retirement System Plan known as Component II (also known as the Legacy Plan). Since Component I is a separate plan (as described by GASB Statement No. 68), it is covered in a separate report.

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 calculation of the plan's liability for this report is not applicable for funding purposes of the plan. 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 the System only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by System staff, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. This report is based on the valuation date of June 30, 2015. The total pension liability was rolled-forward from the valuation date to the plan year ending June 30, 2016 using generally accepted actuarial principles. The asset information as of June 30, 2016 was provided by the System. This information was checked for internal consistency, but it was not audited by Gabriel, Roeder, Smith & Company. A description of the adjustments made to the data is incorporated in this report. GRS is not responsible for the accuracy of the data provided by the Retirement System. This report is based upon estimates of frozen accrued benefits. Final calculations of frozen accrued benefits for active members are not available. Future measurements based on final calculation of benefit amounts will differ.

At the direction of the System and approval of the System's Auditor, the long-term expected return on assets used to determine the discount rate is 7.23%, net of investment expenses, as of June 30, 2016, down from 7.61%, net of investment expenses, as of June 30, 2015. We have reviewed this assumption based on the System's asset allocation and have determined it to be reasonable for the purpose of the measurement being taken.

The benefit provisions reflected in this valuation for the development of the end of year Total Pension Liability (TPL) are those in effect for Component II as of the end of the plan year on June 30, 2016.

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the System on the measurement date for purposes of GASB Statement No. 68 reporting. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

The signing individuals are independent of the plan sponsor.

David T. Kausch and Judith A. Kermans are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

This report is provided to the Board, at the Board's request, for the purpose of assisting the plan sponsor with the plan sponsor's reporting requirements. Additional calculations and schedules were added to the previously published GASB Statement No. 67 valuation report to create this report. The June 30, 2016 GASB Statement No. 67 report was published on November 18, 2016. Subsequent to that publication, we received revised June 30, 2015 asset information which was used for the purpose of completing the June 30, 2015 GASB Statement No. 68 report (published on December 22, 2016). That revised information resulted in a change to the June 30, 2015 TPL. The June 30, 2016 GASB Statement No. 67 report was not revised to reflect the change in the beginning TPL. The calculations in this report start with the revised June 30, 2015 TPL. Therefore, many of the results and schedules differ from our June 30, 2016 GASB Statement No. 67 report.

Respectfully submitted,

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SECTION A

EXECUTIVE SUMMARY

Executive Summary as of June 30, 2016

Actuarial Valuation Date	June 30, 2015
Measurement Date of the Net Pension Liability	June 30, 2016
Employer's Fiscal Year Ending Date (Reporting Date)	June 30, 2017

Membership

Number of	
- Retirees and Beneficiaries	11,884
- Inactive, Nonretired Members	2,732
- Active Members	4,688
- Total	19,304
Covered Payroll	\$ 200,722,197

Net Pension Liability

Total Pension Liability	\$ 2,926,421,952
Plan Fiduciary Net Position	1,933,541,307
Net Pension Liability	\$ 992,880,645
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	66.07%
Net Pension Liability as a Percentage of Covered Payroll	494.65%

Development of the Single Discount Rate

Single Discount Rate	7.23%
Long-Term Expected Rate of Investment Return	7.23%
Long-Term Municipal Bond Rate*	2.85%
Last year ending June 30 in the 2017 to 2116 projection period for which projected benefit payments are fully funded	2116

Total Pension Expense \$ 94,799,602

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	\$ -	\$ -
Changes in assumptions	-	2,279,308
Net difference between projected and actual earnings on pension plan investments	161,985,719	55,489,688
Total	\$ 161,985,719	\$ 57,768,996

**Source: "20-Bond GO Index" is the Bond Buyer Index, general obligation, 20 years to maturity, mixed quality. In describing this index, the Bond Buyer notes that the bonds' average credit quality is roughly equivalent to Moody's Investors Service's Aa2 rating and Standard & Poor's Corp.'s AA. The rate shown is as of June 30, 2016, the most recent date available on or before the measurement date.*

Discussion

Changes to the Actuarial Assumptions

For purposes of determining the total pension liability as of June 30, 2016, the following actuarial assumptions were changed/modified from those used in the June 30, 2015 funding valuation:

- At the direction of the System and approval of the Systems' Auditor, the long-term expected return on assets was 7.23% net of investment expenses, as of June 30, 2016 (it was 6.75% net of investment and administrative expenses, in the June 30, 2015 funding valuation, as required by the Plan of Adjustment). The Single Discount Rate (SDR) changed to 7.23% from 7.61% when compared to the June 30, 2015 GASB 68 valuation.

All other actuarial assumptions were the same as those used in the June 30, 2015 actuarial valuation (the funding valuation).

Changes to the Benefit Provisions

There were no changes in benefit provisions during the year.

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 System and/or plan sponsor is responsible for preparing and disclosing the non-actuarial information needed to comply with these accounting standards.

Consistency with GASB Statement No. 67

The actuarial assumptions and methods used in this GASB Statement No. 68 report are the same as those used in the System's GASB Statement No. 67 report as of June 30, 2016. The June 30, 2016 GASB Statement No. 67 report was published on November 18, 2016. Subsequent to that publication, we received revised asset information as of June 30, 2015 which was used for the purposes of completing the June 30, 2015 GASB Statement No. 68 report (published on December 22, 2016). That revised information resulted in a change to the June 30, 2015 TPL that occurred after this publication of the June 30, 2016 GASB Statement No. 67 report. The calculations in this report start with the revised June 30, 2015 TPL. Therefore, many of the results and schedules differ from our June 30, 2016 GASB Statement No. 67 report.

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 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to the General Retirement System of the City of Detroit subsequent to the measurement date of June 30, 2016.

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.

Development of Employer Proportionate Shares

As instructed, we have developed the proportionate employer shares as follows:

- General, DOT, DWSD, and Library have contribution rates assessed on separate relationships and are therefore accounted for separately under Paragraph 49 of GASB No. 68.
- The component units in the General Division were 1) General City; 2) Parking; 3) Airport.
- Proportionate shares in the General Division were determined by prorating based on the Total Pension Liability.

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:

- a description of the types of benefits provided by the plan, as well as automatic or ad hoc COLAs;
- the number and classes of employees covered by the benefit terms;
- for the current year, sources of changes in the net pension liability;
- significant assumptions and methods used to calculate the total pension liability;
- inputs to the Single Discount Rate;
- certain information about mortality assumptions and the dates of experience studies;
- the date of the valuation used to determine the total pension liability;
- information about changes of assumptions or other inputs and benefit terms;
- 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;
- 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;
- 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;
- a description of the system that administers the pension plan; and
- a description of the terms of the plan's deferred retirement option program (DROP) and the total DROP balance for those members currently participating in the DROP. (The General Retirement System of the City of Detroit does not have a DROP program.)

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

While the first two tables may be built prospectively as the information becomes available, sufficient information may currently be available for the third table from prior financial statements.

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 June 30, 2015, rolled to the plan year end of June 30, 2016.

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 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 7.23%; the municipal bond rate is 2.85% (based on the weekly rate closest to but not later than the plan year end of the "20-Bond GO Index" rate from the Bond Buyer Index); and the resulting Single Discount Rate is 7.23%, as of June 30, 2016.

The expected rate of return was provided by the Retirement System and approved by the System's auditor.

Limitation 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 (66.07% as of June 30, 2016). Unless otherwise indicated, with regard to any such measurements presented in this report:

- (1) This measurement is not intended to be a funded ratio or a measure of funded progress.
- (2) This measurement is inappropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations.
- (3) The measurement is inappropriate for assessing the need for or amount of future employer contributions.

Limitations of Project Scope

Actuarial Standards do not require the actuary to evaluate the ability of the plan sponsor or other contributing entities to make required contributions when due. Such an evaluation was not within the scope of this project and is not within our area of expertise. Consequently, we have not made such an evaluation.

Benefits as of June 30, 2015

As of the June 30, 2015 census date:

- 1) Frozen Accrued Benefit amounts were not available for active members.

Data provided was used to estimate the impact of the above information. As this data becomes available in the future, the results of our liability calculations may differ.

The reported June 30, 2016 Annuity Savings Fund (ASF) balance included a receivable, computed by the System's auditors, that accounts for future ASF recoupments. We understand this amount was originally determined as of June 30, 2015 and updated to June 30, 2016 in accordance with GAAP accounting.

SECTION B

FINANCIAL STATEMENTS

This information is subject to the System's Auditor's review. Please let us know if the System's Auditor recommends any changes.

Statement of Fiduciary Net Position as of June 30, 2016

Assets

Cash and Deposits	N/A
Receivables	
Accounts Receivable - Sale of Investments	N/A
Accrued Interest and Other Dividends	N/A
Contributions	N/A
Accounts Receivable - Other	N/A
Total Receivables	N/A
Investments	
Fixed Income	N/A
Domestic Equities	N/A
International Equities	N/A
Real Estate	N/A
Other	N/A
Total Investments	N/A
Total Assets	N/A

Liabilities

Payables	
Accounts Payable - Purchase of Investments	N/A
Accrued Expenses	N/A
Accounts Payable - Other	N/A
Total Liabilities	N/A

Net Position Restricted for Pensions	\$ 1,933,541,307
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Note: Asset detail of receivables, investments and payables was not provided.

Statement of Changes in Fiduciary Net Position for Year Ended June 30, 2016

Additions

Contributions		
Employer	\$	104,792,657
Employee		-
Other		-
Total Contributions	<u>\$</u>	<u>104,792,657</u>
Investment Income		
Net Appreciation in Fair Value of Investments	\$	(32,840,696)
Interest and Dividends (including ASF interest)		34,204,886
Other Income		-
Less Investment Expense		<u>(9,229,284)</u>
Net Investment Income	<u>\$</u>	<u>(7,865,094)</u>
Other	\$	1,360,330
Total Additions	<u>\$</u>	<u>98,287,893</u>

Deductions

Benefit Payments, including Refunds of Employee Contributions	\$	292,282,179
Pension Plan Administrative Expense		3,742,618
Other		-
Total Deductions	<u>\$</u>	<u>296,024,797</u>
Net Increase in Net Position	\$	(197,736,904)

Net Position Restricted for Pensions

Beginning of Year	\$	2,131,278,211
End of Year	<u>\$</u>	<u>1,933,541,307</u>

Statement of Pension Expense Under GASB Statement No. 68 Fiscal Year Ended June 30, 2016*

A. Expense	General	DOT	DWSD	Library	Total
1. Service Cost	\$ -	\$ -	\$ -	\$ -	-
2. Interest on the Total Pension Liability	118,449,052	30,752,293	57,441,857	7,367,961	214,011,164
3. Current-Period Benefit Changes	-	-	-	-	-
4. Employee Contributions (made negative for addition here)	-	-	-	-	-
5. Projected Earnings on Plan Investments (made negative for addition here)	(88,672,504)	(19,348,976)	(40,660,459)	(6,283,710)	(154,965,649)
6. Pension Plan Administrative Expense	3,122,097	470,627	0	149,894	3,742,618
7. Other Changes in Plan Fiduciary Net Position	(775,951)	(171,059)	(358,838)	(54,482)	(1,360,330)
8. Recognition of Outflow (Inflow) of Resources due to Liabilities	19,740,104	6,531,528	(4,700,826)	(3,594,021)	17,976,785
9. Recognition of Outflow (Inflow) of Resources due to Assets	17,145,833	1,150,006	(1,734,528)	(1,166,297)	15,395,014
10. Total Pension Expense	\$ 69,008,631	\$ 19,384,419	\$ 9,987,206	\$ (3,580,655)	\$ 94,799,602

*Totals may not add due to rounding.

Statement of Outflows and Inflows Arising from Current Reporting Period Fiscal Year Ended June 30, 2016*

A. Outflows (Inflows) of Resources due to Liabilities	General	DOT	DWSD	Library	Total
1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$ (29,429,615)	\$ (3,435,546)	\$ (7,203,304)	\$ (3,650,647)	\$ (43,719,112)
2. Assumption Changes (gains) or losses	\$ 49,169,719	\$ 12,849,218	\$ 25,074,531	\$ 2,941,459	\$ 90,034,927
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	1.0000	1.0000	1.0000	1.0000	1.0000
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	\$ (29,429,615)	\$ (3,435,546)	\$ (7,203,304)	\$ (3,650,647)	\$ (43,719,112)
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$ 49,169,719	\$ 12,849,218	\$ 25,074,531	\$ 2,941,459	\$ 90,034,927
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	\$ 19,740,104	\$ 9,413,672	\$ 17,871,227	\$ (709,188)	\$ 46,315,815
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	\$ -	\$ -	\$ -	\$ -	\$ -
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$ -	\$ -	\$ -	\$ -	\$ -
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	\$ -	\$ -	\$ -	\$ -	\$ -
B. Outflows (Inflows) of Resources due to Assets					
1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ 94,564,921	\$ 19,165,833	\$ 42,526,710	\$ 6,573,279	\$ 162,830,743
2. Recognition period for Assets {in years}	5.0000	5.0000	5.0000	5.0000	5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	\$ 18,912,984	\$ 3,833,167	\$ 8,505,342	\$ 1,314,656	\$ 32,566,149
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$ 75,651,937	\$ 15,332,666	\$ 34,021,368	\$ 5,258,623	\$ 130,264,594

*Totals may not add due to rounding.

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended June 30 General

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	\$ 49,169,719	\$ 29,429,615	\$ 19,740,104
2. Due to Assets	\$ 24,951,060	7,805,227	17,145,833
3. Total	\$ 74,120,779	\$ 37,234,842	\$ 36,885,937

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	\$ -	\$ 29,429,615	\$ (29,429,615)
2. Assumption Changes	\$ 49,169,719	-	49,169,719
3. Net Difference between projected and actual earnings on pension plan investments	\$ 24,951,060	7,805,227	17,145,833
4. Total	\$ 74,120,779	\$ 37,234,842	\$ 36,885,937

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	\$ -	\$ -	\$ -
2. Assumption Changes	-	-	-
3. Net Difference between projected and actual earnings on pension plan investments	\$ 93,766,167	15,610,453	78,155,714
4. Total	\$ 93,766,167	\$ 15,610,453	\$ 78,155,714

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

Year Ending June 30	Net Deferred Outflows of Resources General Total
2017	\$ 17,145,833
2018	17,145,834
2019	24,951,062
2020	18,912,985
2021	-
Thereafter	-
Total	\$ 78,155,714

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended June 30 DOT

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	\$ 12,849,218	\$ 6,317,690	\$ 6,531,528
2. Due to Assets	\$ 5,162,784	4,012,778	1,150,006
3. Total	\$ 18,012,002	\$ 10,330,468	\$ 7,681,534

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	\$ -	\$ 3,435,546	\$ (3,435,546)
2. Assumption Changes	\$ 12,849,218	2,882,144	9,967,074
3. Net Difference between projected and actual earnings on pension plan investments	\$ 5,162,784	4,012,778	1,150,006
4. Total	\$ 18,012,002	\$ 10,330,468	\$ 7,681,534

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	\$ -	\$ -	\$ -
2. Assumption Changes	-	-	-
3. Net Difference between projected and actual earnings on pension plan investments	\$ 19,321,516	8,025,558	11,295,958
4. Total	\$ 19,321,516	\$ 8,025,558	\$ 11,295,958

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

Year Ending June 30	Net Deferred Outflows of Resources
2017	\$ 1,150,006
2018	1,150,004
2019	5,162,783
2020	3,833,165
2021	-
Thereafter	-
Total	\$ 11,295,958

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended June 30 DWSD

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	\$ 25,074,531	\$ 29,775,357	\$ (4,700,826)
2. Due to Assets	\$ 11,292,804	13,027,332	(1,734,528)
3. Total	\$ 36,367,335	\$ 42,802,689	\$ (6,435,354)

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	\$ -	\$ 7,203,304	\$ (7,203,304)
2. Assumption Changes	\$ 25,074,531	22,572,053	2,502,478
3. Net Difference between projected and actual earnings on pension plan investments	\$ 11,292,804	13,027,332	(1,734,528)
4. Total	\$ 36,367,335	\$ 42,802,689	\$ (6,435,354)

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	\$ -	\$ -	\$ -
2. Assumption Changes	-	-	-
3. Net Difference between projected and actual earnings on pension plan investments	\$ 42,383,754	26,054,665	16,329,089
4. Total	\$ 42,383,754	\$ 26,054,665	\$ 16,329,089

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

Year Ending June 30	Net Deferred Outflows of Resources
2017	\$ (1,734,528)
2018	(1,734,529)
2019	11,292,804
2020	8,505,342
2021	-
Thereafter	-
Total	\$ 16,329,089

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended June 30 Library

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	\$ 2,941,459	\$ 6,535,480	\$ (3,594,021)
2. Due to Assets	\$ 1,733,209	2,899,506	(1,166,297)
3. Total	\$ 4,674,668	\$ 9,434,986	\$ (4,760,318)

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	\$ -	\$ 3,650,647	\$ (3,650,647)
2. Assumption Changes	\$ 2,941,459	2,884,833	56,626
3. Net Difference between projected and actual earnings on pension plan investments	\$ 1,733,209	2,899,506	(1,166,297)
4. Total	\$ 4,674,668	\$ 9,434,986	\$ (4,760,318)

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	\$ -	\$ -	\$ -
2. Assumption Changes	-	2,279,308	(2,279,308)
3. Net Difference between projected and actual earnings on pension plan investments	\$ 6,514,282	5,799,012	715,270
4. Total	\$ 6,514,282	\$ 8,078,320	\$ (1,564,038)

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

Year Ending June 30	Net Deferred Outflows of Resources
2017	\$ (3,445,605)
2018	(1,166,297)
2019	1,733,209
2020	1,314,655
2021	-
Thereafter	-
Total	\$ (1,564,038)

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended June 30 Total

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	\$ 90,034,927	\$ 72,058,142	\$ 17,976,785
2. Due to Assets	\$ 43,139,857	27,744,843	15,395,014
3. Total	\$ 133,174,784	\$ 99,802,985	\$ 33,371,799

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	\$ -	\$ 43,719,112	\$ (43,719,112)
2. Assumption Changes	\$ 90,034,927	28,339,030	61,695,897
3. Net Difference between projected and actual earnings on pension plan investments	\$ 43,139,857	27,744,843	15,395,014
4. Total	\$ 133,174,784	\$ 99,802,985	\$ 33,371,799

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	\$ -	\$ -	\$ -
2. Assumption Changes	-	2,279,308	(2,279,308)
3. Net Difference between projected and actual earnings on pension plan investments	\$ 161,985,719	55,489,688	106,496,031
4. Total	\$ 161,985,719	\$ 57,768,996	\$ 104,216,723

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

Year Ending June 30	Net Deferred Outflows of Resources
2017	\$ 13,115,706
2018	15,395,012
2019	43,139,858
2020	32,566,147
2021	-
Thereafter	-
Total	\$ 104,216,723

Schedule of Proportionate Employer Share for Year Ended June 30, 2016 General Subgroup*

Deferred Outflows of Resources

TPL	Employer	Prop. Share	Net Pension Liability	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assum.	Changes in Proportion and Differences Between Employer Cont. and Share of Cont.	Total Deferred Outflows of Resources
\$ 1,594,392,739	General City	98.41%	\$ 503,206,247	\$ -	\$ 92,275,285	\$ -	\$ -	\$ 92,275,285
22,358,114	Parking	1.38%	7,056,444	-	1,293,973	-	-	1,293,973
3,402,322	Airport	0.21%	1,073,807	-	196,909	-	-	196,909
\$ 1,620,153,175	Total for All Employers	100.00%	\$ 511,336,498	\$ -	\$ 93,766,167	\$ -	\$ -	\$ 93,766,167

Deferred Inflows of Resources

Pension Expense

Employer	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assum.	Changes in Proportion and Differences Between Employer Cont. and Share of Cont.	Total Deferred Inflows of Resources	Prop. Share of Plan Pension Expense	of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
General City	\$ -	\$ 15,362,247	\$ -	\$ -	\$ 15,362,247	\$ 67,911,394	\$ 218,590	\$ 68,129,984
Parking	-	215,424	-	-	215,424	952,319	158,026	1,110,345
Airport	-	32,782	-	-	32,782	144,918	(376,616)	(231,698)
Total for All Employers	\$ -	\$ 15,610,453	\$ -	\$ -	\$ 15,610,453	\$ 69,008,631	\$ -	\$ 69,008,631

* Totals may not add due to rounding.

Schedule of Proportionate Employer Share for Year Ended June 30, 2016 General Subgroup*

		Schedule of Deferred Inflows and Outflows						
Employer	Employer Allocation Percentage	2017	2018	2019	2020	2021	Thereafter	Total
General City	98.41%	\$ 16,873,214	\$ 16,873,215	\$ 24,554,340	\$ 18,612,269	\$ -	\$ -	\$ 76,913,038
Parking	1.38%	236,612	236,613	344,325	260,999	-	-	1,078,549
Airport	0.21%	36,006	36,006	52,397	39,717	-	-	164,127
TOTAL	100.00%	\$ 17,145,833	\$ 17,145,834	\$ 24,951,062	\$ 18,912,985	\$ -	\$ -	\$ 78,155,714

* Totals may not add due to rounding.

Schedule of Changes in Net Pension Liability and Related Ratios Current Period Fiscal Year Ended June 30, 2016*

A. Total pension liability	General	DOT	DWSD	Library	Total
1. Service Cost	\$ -	\$ -	\$ -	\$ -	-
2. Interest on the Total Pension Liability	118,449,052	30,752,293	57,441,857	7,367,961	214,011,164
3. Changes of benefit terms	-	-	-	-	-
4. Difference between expected and actual experience of the Total Pension Liability	(29,429,615)	(3,435,546)	(7,203,304)	(3,650,647)	(43,719,112)
5. Changes of assumptions	49,169,719	12,849,218	25,074,531	2,941,459	90,034,927
6. Benefit payments, including refunds of employee contributions	(149,056,257)	(36,186,455)	(99,060,564)	(7,978,903)	(292,282,179)
7. Net change in total pension liability	\$ (10,867,101)	\$ 3,979,510	\$ (23,747,480)	\$ (1,320,130)	\$ (31,955,200)
8. Total pension liability – beginning	1,631,020,276	422,196,951	804,351,009	100,808,917	2,958,377,152
9. Total pension liability – ending	\$ 1,620,153,175	\$ 426,176,461	\$ 780,603,529	\$ 99,488,787	\$ 2,926,421,952
B. Plan fiduciary net position					
1. Contributions – employer	\$ 50,399,993	\$ 8,992,664	\$ 42,900,000	\$ 2,500,000	\$ 104,792,657
2. Contributions – employee	-	-	-	-	-
3. Net investment income	(5,892,417)	183,143	(1,866,251)	(289,569)	(7,865,094)
4. Benefit payments, including refunds of employee contributions	(149,056,257)	(36,186,455)	(99,060,564)	(7,978,903)	(292,282,179)
5. Pension Plan Administrative Expense	(3,122,097)	(470,627)	-	(149,894)	(3,742,618)
6. Other	775,951	171,059	358,838	54,482	1,360,330
7. Net change in plan fiduciary net position	\$ (106,894,827)	\$ (27,310,216)	\$ (57,667,977)	\$ (5,863,884)	\$ (197,736,904)
8. Plan fiduciary net position – beginning	1,215,711,504	268,003,926	562,203,871	85,358,910	2,131,278,211
9. Plan fiduciary net position – ending	\$ 1,108,816,677	\$ 240,693,710	\$ 504,535,894	\$ 79,495,026	\$ 1,933,541,307
C. Net pension liability	\$ 511,336,498	\$ 185,482,751	\$ 276,067,635	\$ 19,993,761	\$ 992,880,645
D. Plan fiduciary net position as a percentage of the total pension liability	68.44%	56.48%	64.63%	79.90%	66.07%
E. Covered-employee payroll	\$ 102,662,531	\$ 28,142,095	\$ 57,772,484	\$ 12,145,087	\$ 200,722,197
F. Net pension liability as a percentage of covered employee payroll	498.08%	659.09%	477.85%	164.62%	494.65%

*Totals may not add due to rounding.

A Special Funding Situation may occur if a non-city entity has a legal obligation to contribute directly to the Retirement System. The Net Pension Liability shown here has not been adjusted for any potential special funding situation.

Schedules of Required Supplementary Information

Schedule of Changes in Net Pension Liability and Related Ratios

Multiyear

Ultimately 10 Fiscal Years will be Displayed

Fiscal year ending June 30,	2016	2015	2014
Total Pension Liability			
Service Cost	\$ -	\$ -	\$ 32,736,019
Interest on the Total Pension Liability	214,011,164	263,007,329	242,611,073
Benefit Changes	-	(731,824,895)	(113,311,571)
Difference between Expected and Actual Experience	(43,719,112)	24,644,530	-
Assumption Changes	90,034,927	(101,559,893)	(271,190,194)
Benefit Payments	(242,470,451)	(253,217,949)	(253,683,194)
Refunds	(49,811,728)	(44,321,041)	(144,050,613)
Net Change in Total Pension Liability	(31,955,200)	(843,271,919)	(506,888,480)
Total Pension Liability - Beginning	2,958,377,152	3,801,649,071	4,308,537,551
Total Pension Liability - Ending (a)	\$ 2,926,421,952	\$ 2,958,377,152	\$ 3,801,649,071
Plan Fiduciary Net Position			
Employer Contributions	\$ 104,792,657	\$ 189,282,095	\$ 25,126,131
Employee Contributions	-	609,073	10,241,761
Pension Plan Net Investment Income	(7,865,094)	93,054,978	289,789,607
Benefit Payments	(242,470,451)	(253,217,949)	(253,683,194)
Refunds	(49,811,728)	(44,321,041)	(144,050,613)
Pension Plan Administrative Expense	(3,742,618)	(7,556,822)	(11,237,767)
Other	1,360,330	138,219,998	-
Net Change in Plan Fiduciary Net Position	(197,736,904)	116,070,332	(83,814,075)
Plan Fiduciary Net Position - Beginning	2,131,278,211	2,015,207,879	2,099,021,954
Plan Fiduciary Net Position - Ending (b)	\$ 1,933,541,307	\$ 2,131,278,211	\$ 2,015,207,879
Net Pension Liability - Ending (a) - (b)	\$ 992,880,645	\$ 827,098,941	\$ 1,786,441,192
Plan Fiduciary Net Position as a Percentage			
of Total Pension Liability	66.07 %	72.04 %	53.01 %
Covered-Employee Payroll	\$ 200,722,197	\$ 203,507,079	\$ 213,291,083
Net Pension Liability as a Percentage			
of Covered-Employee Payroll	494.65 %	406.42 %	837.56 %

Notes to Schedule:

N/A

A Special Funding Situation may occur if a non-city entity has a legal obligation to contribute directly to the Retirement System. The Net Pension Liability shown here has not been adjusted for any potential funding situation. Our understanding is that the City makes all the employer contributions into the fund, even though the City may receive monies from other entities as a result of the POA.

Schedules of Required Supplementary Information

Schedule of the Net Pension Liability Multiyear

Ultimately 10 Fiscal Years will be displayed

FY Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll*	Net Pension Liability as a % of Covered Payroll
2014	\$ 3,801,649,071	\$ 2,015,207,879	\$ 1,786,441,192	53.01%	\$ 213,291,083	837.56%
2015	2,958,377,152	2,131,278,211	827,098,941	72.04%	203,507,079	406.42%
2016	2,926,421,952	1,933,541,307	992,880,645	66.07%	200,722,197	494.65%

* Covered payroll shown is the reported payroll on the actuarial valuation date (census date). Actual covered payroll paid during the year was unavailable.

Schedule of Contributions Multiyear

FY Ending June 30,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll*	Actual Contribution as a % of Covered Payroll
2014	\$80,627,791	\$ 25,126,131	\$55,501,660	\$213,291,083	11.78%
2015	N/A	189,282,095	N/A	203,507,079	93.01%
2016	N/A	104,792,657	N/A	200,722,197	52.21%

* Covered payroll shown is the reported payroll from the actuarial valuation date (census date). Actual covered payroll paid during the year was unavailable.

Notes to Schedule of Contributions

Contribution Requirement: The expected contributions for fiscal year 2015 and beyond are provided in the POA. Subsequent to the POA, the DIA entered into an agreement to pay part of its contribution requirement to the Detroit General Plan in a single lump sum payment. Furthermore, we understand that the City has modified all of its outstanding UTGO Stub Bonds. A revised contribution schedule (from Retirement System staff) showing actual fiscal year 2016 contributions as well as the DIAs and UTGOs future contribution requirements is below:

**Contribution Source
(\$ millions)**

Fiscal Year	For DWSD Liabilities		For Other Liabilities					Total
	DWSD	Transfers	UTGO	State	DIA	Other	Transfers from DWSD	
2016	\$ 45.4	\$ (2.5)	\$ 4.0	\$ -	\$ 32.9	\$ 22.5	\$ 2.5	\$ 104.8
2017	45.4	(2.5)	18.4	-	0.4	22.5	2.5	86.6
2018	45.4	(2.5)	4.5	-	0.4	22.5	2.5	72.7
2019	45.4	(2.5)	-	-	0.4	22.5	2.5	68.3
2020	45.4	(2.5)	-	-	0.4	2.5	2.5	48.3
2021	45.4	(2.5)	-	-	0.4	2.5	2.5	48.3
2022	45.4	(2.5)	-	-	0.4	2.5	2.5	48.3
2023	45.4	(2.5)	-	-	0.4	2.5	2.5	48.3

Beginning with Fiscal Year 2024, employer contributions will be actuarially determined.

Schedule of Investment Returns

This information was not made available to Gabriel, Roeder, Smith & Company for this report.

Single Discount Rate

A Single Discount Rate of 7.23%, net of investment expenses, was used to measure the total pension liability as of June 30, 2016. This Single Discount Rate was based on the expected rate of return on pension plan investments of 7.23% as directed by the System and approved by the System's Auditor. The projection of cash flows used to determine this Single Discount Rate assumed that plan member contributions ceased as of June 30, 2014, and that employer contributions will be made at rates equal to those set by the final Plan of Adjustment through June 30, 2023 and contributions consistent with PERSIA and the intention to fully fund the System by 2053 as determined in the bankruptcy (POA). Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the net pension liability to changes in the Single Discount Rate, the following presents the plan's net pension liability, calculated using a Single Discount Rate of 7.23%, as well as what the plan's net pension liability would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher.

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

	1% Decrease 6.23%	Current Single Discount Rate Assumption 7.23%	1% Increase 8.23%
Total Pension Liability (TPL)	\$3,191,987,018	\$2,926,421,952	\$2,700,593,107
Net Position Restricted for Pensions	1,933,541,307	1,933,541,307	1,933,541,307
Net Pension Liability (NPL)	\$1,258,445,711	\$ 992,880,645	\$ 767,051,800

Users of this report should be aware that, in the actuary's judgement, a discount rate of 8.23% would not be a reasonable assumption for funding purposes.

Summary of Population Statistics

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	11,884
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	2,732
Active Plan Members	<u>4,688</u>
Total Plan Members	19,304

Additional information regarding the plan population may be found in the June 30, 2015 actuarial valuation of the System.

Additional Note

Potential future asset transfers from the Plan to Component I for payment of Transition Costs were not included in this calculation.

SECTION C

SUMMARY OF BENEFITS

Summary of Benefit Provisions Evaluated

Component II Frozen Benefits

All Component II benefits are frozen as of June 30, 2014 based on service and average final compensation accrued as of that date and the provisions of the Detroit General Retirement System as it existed on June 30, 2014. Frozen benefits are further reduced by 4.5% and all future cost-of-living adjustments (“COLA’s”) were eliminated. Benefits resulting from the Annuity Savings Fund and benefits paid from the Annuity Reserve Fund were subject to a separate reduction described as a “Claw-back.” Details of the claw-back provision are complicated and can be found in the Eighth Amended Plan of Adjustment. The benefits evaluated in this report are the frozen reduced benefits after the claw-back. Component II benefits are payable after separation from service, upon meeting the eligibility conditions of the plan as it existed on June 30, 2014, regardless of whether the individual is eligible to receive a Component I benefit at that time.

Our understanding of the June 30, 2014 plan provisions is provided below for completeness. The material below does not have legal standing and is not intended to cover all potential situations that could occur. If there are discrepancies between the description below, and appropriate legal documents, the latter necessarily govern.

Age and Service Pension

Eligibility - Any age (minimum age 55 for non-EMS members hired after 1995) with 30 years of service (25 for EMS members), or age 60 with 10 years of service, or age 65 with 8 years of service.

Annual Amount – EMS Members: Sum of a) a basic pension of \$12 for each of the first 10 years of service, plus b) a pension equal to 2.0% of AFC multiplied by years of service. Maximum benefit is 90% of AFC. **Other Members:** Sum of a) a basic pension of \$12 for each of the first 10 years of service, plus b) a pension equal to the first 10 years of service multiplied by 1.6% of AFC, plus 1.8% of AFC for each year of service greater than 10 years up to 20 years, plus 2.0% of AFC for each year of service greater than 20 years up to 25 years, plus 2.2% of AFC for each year of service greater than 25 years. Future benefit accruals for certain active members (depending on bargaining unit) were reduced to 1.5% of final average compensation per year of service.

Type of Average Final Compensation (AFC) - Highest 3 consecutive years out of the last 10. Pension benefits will not be diminished if compensation is reduced because of a fiscal emergency. Effective July 1, 1999, in computing the AFC, a member shall have the option of adding the value of 25% of unused accrued sick leave to the earnings used in computing the AFC. Longevity is added to AFC in accordance with the following schedule: \$150 after 5 years, \$300 after 10 years, \$450 after 15 years, \$600 after 20 years, and \$750 after 25 years.

Early Retirement

Eligibility - Any age with 25 or more years of service (min. age 55 for members hired after 1995).

Annual Amount - Same as regular retirement but actuarially reduced.

Summary of Benefit Provisions Evaluated (Continued)

Deferred Retirement (Vested Benefit)

Eligibility - Hired prior to 7-1-80: Age 40 with 8 years of service. Hired on or after 7-1-80: Any age with 10 years of service.

Benefit Commencement - APTE hired prior to July 1, 1988: Benefit begins at the age the member would have become eligible for regular retirement if service had continued. **SAAA, Non-Union and lawyers hired prior to June 30, 1986:** Benefit begins at the age the member would have become eligible for regular retirement. **Others:** Benefits based on service rendered by June 30, 1986 begin at the age the member would have become eligible for regular retirement. Benefits based on service rendered after July 1, 1986 begin at age 62.

Annual Amount - Same as regular retirement but based on average final compensation and service at the time of termination.

Duty Disability Retirement

Eligibility - Service related disability before age 60. No service requirement.

Annual Amount - An annuity which is the actuarial equivalent of the accumulated contributions at date of disability plus a pension of two-thirds of average final compensation at time of disability. The maximum annual pension is \$9,000. At the earliest of when the member would have accrued 30 years of service credit (25 for EMS) or age 60, the annuity is recomputed assuming contributions would have continued at a salary level equal to final compensation. The pension is recomputed with additional service credit granted from the date of disability to age 60 (or 30 years of service credit) with no maximum.

Non-Duty Disability Retirement

Eligibility - Disability from any cause before age 60 with 10 or more years of service.

Annual Amount - Computed in the same manner as a regular retirement benefit. Maximum annual pension to age 60 is \$6,000. Benefit is recomputed at age 60 with no maximum.

Duty Death Before Retirement

Eligibility - Death from service related causes. No age or service requirements.

Annual Amount - One-third of final compensation to the surviving spouse for life or until remarriage, plus an equal share of 1/4 of final compensation to each unmarried child under age 18. If there is no eligible spouse, eligible children each receive 1/4 of final compensation; if there are more than 2 such children, each child shares an equal part of 1/2 of final compensation. Maximum total amount for spouse and children is \$9,000 annually. If there is no eligible spouse or children, dependent parents each receive 1/6 of deceased's final compensation, to a total maximum of \$600 annually.

Summary of Benefit Provisions Evaluated (Concluded)

Non-Duty Death Before Retirement

Eligibility - Death-in-service at any age with 15 years of service; or after age 60 with 10 years of service; or after age 65 with 8 years of service.

Annual Amount - To Surviving Spouse: Computed as a regular retirement benefit but reduced in accordance with a 100% joint and survivor election for members with 20 or more years of service. For members with 15 years of service but less than 20, benefit is reduced in accordance with a 50% joint and survivor election. To Dependent Children if no Surviving Spouse: \$9,000 payable to age 19 of the youngest child or for life if child is physically or mentally impaired for members with 20 or more years of service (\$6,000 if less than 20 years of service).

Post-Retirement Cost-of-Living Adjustments

Benefit is increased annually by 2.25% of the **original** pension amount at retirement. Post-retirement cost-of-living increases were eliminated on future accruals for certain active members (depending on bargaining unit).

Member Contributions

Members have the option of choosing one of four contribution amounts: (1) 0%; (2) 3.0% of compensation up to the Social Security wage base, plus 5.0% of compensation in excess of the Social Security wage base; (3) 5.0% of total compensation; or (4) 7.0% of total compensation. Member contributions can be paid as a lump sum or annuitized at retirement to provide an annuity in addition to the pension (which is not affected by the level of member contributions).

SECTION D

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Summary of Assumptions and Methods Used for GASB Actuarial Valuations Adopted by Board of Trustees

All assumptions are estimates of future experience except as noted. The rationale for the assumptions is based on experience studies where noted.

Economic Assumptions

The investment return rate used in making the valuation was 7.23% per year, compounded annually (net after investment expenses) as of June 30, 2016. This assumption was provided by the Retirement System. We determined it to be reasonable when using a 2.25% assumed **price inflation**.

Non-Economic Assumptions

The mortality table used to measure retired life mortality was 100% of the RP-2014 Blue Collar Annuitant Table set-forward 1 year for males and 100% of the RP-2014 Blue Collar Annuitant Table set-forward 1 year for females. Tables were extended below age 50 with a cubic spline to the published Juvenile rates. Pre-retirement mortality is based on the corresponding Employee tables. The tables are projected to be fully generational, based on the 2-dimensional, sex distinct mortality improvement scale MP-2014 (which was published and intended to be used with RP-2014). This table was first used as of June 30, 2014. For disabled members, the same tables are used. The rationale for the mortality assumption is based on the 2008-2013 Mortality Experience Study issued February 4, 2015.

The probabilities of retirement for members eligible to retire are shown on pages 30 and 31. These probabilities were revised for the June 30, 2008 valuation. The rationale is based on the 2002-2007 Experience Study.

The probabilities of separation from service are shown for sample ages on page 32. These probabilities were revised for the June 30, 2008 valuation. The rationale is based on the 2002-2007 Experience Study.

**Single Life Retirement Values
Based on RP-2014 Blue Collar
100% of Male Rates Set-Forward 1 Year
100% of Female Rates Set-Forward 1 Year**

Sample Attained Ages in 2015	Future Life Expectancy (years)	
	Males	Females
45	38.28	41.66
50	33.34	36.61
55	28.59	31.72
60	24.07	26.98
65	19.80	22.42
70	15.82	18.12
75	12.20	14.17
80	9.04	10.69

Rationale for assumption is based upon a 2008 to 2013 study of mortality experience dated February 4, 2015.

Probabilities of Age/Service Retirement for Members Eligible to Retire

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year With Unreduced Benefits		
	EMS	D.O.T.	Others
45	25%		
46	25%		
47	25%		
48	22%		
49	20%		
50	18%	55%	50%
51	15%	50%	50%
52	15%	50%	45%
53	15%	50%	45%
54	15%	55%	40%
55	15%	50%	30%
56	15%	50%	30%
57	15%	50%	30%
58	15%	50%	30%
59	15%	55%	40%
60	40%	40%	25%
61	30%	30%	25%
62	30%	30%	25%
63	30%	30%	25%
64	30%	30%	25%
65	30%	30%	35%
66	30%	30%	30%
67	30%	30%	25%
68	30%	50%	25%
69	30%	50%	25%
70	100%	100%	20%
71			20%
72			20%
73			20%
74			20%
75			20%
76			20%
77			20%
78			20%
79			20%
80			100%
Ref	537	1648	1647

Rationale for assumption is based upon a 2002 to 2007 Experience Study.

Probabilities of Early Retirement for Members Eligible for Early Retirement

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year With Reduced Benefits
55	7%
56	8%
57	9%
58	10%
59	12%
60	12%
61	12%
62	12%
63	12%
64	12%
Ref	1649

Rationale for assumption is based upon a 2002 to 2007 Experience Study.

Probabilities of Separation

Sample Ages	Years of Service	% of Active Members Separating Within Next Year			
		Withdrawal			
		EMS	D.O.T.	Others	
Men	Women				
ALL	0	11.00%	18.00%	18.00%	20.00%
	1	10.00%	16.00%	15.00%	16.00%
	2	8.00%	14.00%	13.00%	14.00%
	3	8.00%	11.00%	11.00%	12.00%
	4	7.00%	9.00%	10.00%	10.00%
25	5 & Over	6.70%	8.00%	7.60%	7.60%
30		5.90%	7.60%	7.22%	7.22%
35		5.20%	5.56%	5.28%	5.28%
40		4.40%	4.26%	4.05%	4.05%
45		3.40%	3.69%	3.51%	3.51%
50		2.40%	3.50%	3.33%	3.33%
55		2.00%	3.50%	3.33%	3.33%
60		0.00%	3.50%	3.33%	3.33%
Ref		338 1068	143 212	584 212 x 0.95	188 212 x 0.95

Sample Ages	% of Active Members Becoming Disabled Within Next Year			
	D.O.T.		Others	
	Ordinary	Duty	Ordinary	Duty
25	0.02%	0.03%	0.01%	0.25%
30	0.05%	0.08%	0.04%	0.29%
35	0.14%	0.21%	0.11%	0.34%
40	0.27%	0.42%	0.21%	0.39%
45	0.51%	0.79%	0.40%	0.45%
50	0.66%	1.03%	0.51%	0.52%
55	0.76%	1.18%	0.59%	0.60%
60	0.86%	1.34%	0.67%	0.70%
Ref	23 x 0.45	23 x 0.70	23 x 0.35	423 x 0.90

Rationale for assumption is based upon a 2002 to 2007 Experience Study.

Miscellaneous and Technical Assumptions

Benefit Service	Exact Fractional service is used to determine the amount of benefit payable.
Decrement Operation	Disability and mortality decrements do not operate during the first 5 years of service. Disability and withdrawal also do not operate during retirement eligibility.
Decrement Timing	Decrements of all types are assumed to occur mid-year.
Eligibility Testing	Eligibility for benefits is determined based upon the age nearest birthday and rounded service on the date the decrement is assumed to occur.
Forfeitures	None.
Incidence of Contributions	Contributions are assumed to be received at the end of the year.
Marriage Assumption	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses for active member valuation purposes.
Normal Form of Benefit	Straight life is the normal form of benefit. Straight life is generally the most valuable under valuation assumptions. Actuarial equivalent factors are based on 7.5% interest and 1984 Group Annuity Mortality table.
Service Credit Accruals	Service accruals stop as of June 30, 2014 for measurement of Component II liabilities. However, future service in Component I may be used to satisfy the benefit eligibility requirement in Component II.
Administrative Expenses	3.0% of Component I payroll. 50% was allocated to Component II and 50% to Component I based on actual administrative expenses.
Sick Leave	As of June 30, 2014, this information was included in the 2014 AFC amounts.
AFC Adjustment	Reported 2014 AFC amounts were increased by 2.0% for active members due to data discrepancies related to the reported AFC. This adjustment was made based on discussions with System staff and the System's auditor.
Member Contributions	Member contributions to this Component II plan are assumed to have ceased with the bankruptcy.

Rationale for assumption is based upon a 2002 to 2007 Experience Study, modified as necessary for changes in data or administration.

SECTION E

CALCULATION OF THE SINGLE DISCOUNT RATE

Calculation of the Single Discount Rate at End of Year

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

The 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 (which is published by the Bond Buyer Index) 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 7.23%; the municipal bond rate is 2.85%; and the resulting Single Discount Rate is 7.23% as of June 30, 2016.

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). For purposes of determining the discount rate as of June 30, 2016, the employer contributions for the 10-year period ending June 30, 2023 were set by the 8th Amended Plan of Adjustment (POA), as adjusted by subsequent agreements. Subsequent employer contributions were determined by a closed 30-year level principle amortization of any unfunded actuarial accrued liability using 7.23% interest, net of investment expenses, consistent with the 100% funded target by 2053 in the POA and State Law.

Rates of Return: Note that these projections are specifically used to determine the SDR and should not be interpreted as a funding recommendation. The 7.23% rate of return was before administrative expenses. Therefore, the projections assumed that any administration expenses incurred by the plan will directly increase employer contributions beginning with FY 2024. The rate is net of investment expenses.

Administrative Expenses: For purposes of the projection using a 7.23% rate of return, administrative expenses were assumed to be related to payroll. Payroll was increased by an assumed wage inflation as of June 30, 2014 of 2.00% for 5 years, 2.50% for the next 5 years and 3.00% thereafter. Since benefits are frozen, the wage inflation assumption does not affect anything other than the administrative expenses.

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 (if any) and shows the equivalent total at the SDR. For purposes of determining the discount rate as of June 30, 2016, the benefit payments reflect the plan provisions in force as of June 30, 2016.

Unfunded Actuarial Accrued Liabilities. Actual employer contributions through June 30, 2023 are set by the POA. The amortization period and method after 2023 has not yet been established by the Board.

Single Discount Rate Development Projection of Contributions at 7.23% End of Year

Fiscal Year Ending June 30,	Projected Contributions from Current Employees	Projected Service Cost	Administrative Expense Contributions	Projected UAL Contributions	Projected Total Contributions
2017	\$ -	\$ -	\$ 2,401,489	\$ 84,236,970	\$ 86,638,459
2018	-	-	2,207,115	70,528,605	72,735,720
2019	-	-	2,034,941	66,240,059	68,275,000
2020	-	-	1,877,133	46,297,867	48,175,000
2021	-	-	1,738,901	46,536,099	48,275,000
2022	-	-	1,612,762	46,662,238	48,275,000
2023	-	-	1,498,747	46,776,253	48,275,000
2024	-	-	1,394,322	109,853,854	111,248,176
2025	-	-	1,294,438	107,347,564	108,642,002
2026	-	-	1,204,637	104,841,273	106,045,910
2027	-	-	1,117,479	102,334,983	103,452,462
2028	-	-	1,033,404	99,828,693	100,862,097
2029	-	-	953,857	97,322,403	98,276,260
2030	-	-	876,732	94,816,113	95,692,845
2031	-	-	801,093	92,309,822	93,110,915
2032	-	-	727,439	89,803,532	90,530,971
2033	-	-	656,589	87,297,242	87,953,831
2034	-	-	591,347	84,790,952	85,382,299
2035	-	-	531,785	82,284,662	82,816,447
2036	-	-	476,642	79,778,371	80,255,013
2037	-	-	425,013	77,272,081	77,697,094
2038	-	-	377,208	74,765,791	75,142,999
2039	-	-	333,782	72,259,501	72,593,283
2040	-	-	294,617	69,753,211	70,047,828
2041	-	-	259,427	67,246,921	67,506,348
2042	-	-	227,645	64,740,630	64,968,275
2043	-	-	198,796	62,234,340	62,433,136
2044	-	-	172,055	59,728,050	59,900,105
2045	-	-	147,307	57,221,760	57,369,067
2046	-	-	125,325	54,715,470	54,840,795
2047	-	-	106,130	52,209,179	52,315,309
2048	-	-	89,282	49,702,889	49,792,171
2049	-	-	74,418	47,196,599	47,271,017
2050	-	-	61,207	44,690,309	44,751,516
2051	-	-	49,513	42,184,019	42,233,532
2052	-	-	39,341	39,677,728	39,717,069
2053	-	-	30,659	37,171,438	37,202,097
2054	-	-	23,383	-	23,383
2055	-	-	17,564	-	17,564
2056	-	-	13,018	-	13,018
2057	-	-	9,411	-	9,411
2058	-	-	6,642	-	6,642
2059	-	-	4,634	-	4,634
2060	-	-	3,209	-	3,209
2061	-	-	2,215	-	2,215
2062	-	-	1,525	-	1,525
2063	-	-	1,053	-	1,053
2064	-	-	729	-	729
2065	-	-	503	-	503
2066	-	-	344	-	344

Employer contributions as shown may differ substantially from those determined by a funding valuation.

Single Discount Rate Development

Projection of Plan Fiduciary Net Position at 7.23%

End of Year

Fiscal Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected ASF Refund	Projected Administrative Expenses	Projected Investment Earnings at 7.23% (5.25% for ASF)	Projected Ending Plan Net Position
Ending June 30,	(a)	(b)	(c)	(d)	(e)	(f)	(g)=(a)+(b)-(c)-(d)-(e)+(f)
2017	\$ 1,933,541,307	\$ 86,638,459	\$ 247,919,452	\$ 18,700,706	\$ 2,401,489	\$ 130,596,181	\$ 1,881,754,299
2018	1,881,754,299	72,735,720	247,001,131	18,700,706	2,207,115	126,625,439	1,813,206,506
2019	1,813,206,506	68,275,000	246,415,038	18,700,706	2,034,941	121,777,634	1,736,108,453
2020	1,736,108,453	48,175,000	244,980,691	18,700,706	1,877,133	115,798,353	1,634,523,277
2021	1,634,523,277	48,275,000	242,984,723	18,700,706	1,738,901	108,798,640	1,528,172,587
2022	1,528,172,587	48,275,000	240,658,378	18,700,706	1,612,762	101,476,074	1,416,951,815
2023	1,416,951,815	48,275,000	237,877,342	18,700,706	1,498,747	93,831,794	1,300,981,815
2024	1,300,981,815	111,248,176	234,790,414	18,700,706	1,394,322	88,106,868	1,245,451,416
2025	1,245,451,416	108,642,002	231,640,195	18,700,706	1,294,438	84,440,740	1,186,898,820
2026	1,186,898,820	106,045,910	228,449,640	18,700,706	1,204,637	80,574,647	1,125,164,395
2027	1,125,164,395	103,452,462	224,729,409	-	1,117,479	77,002,034	1,079,772,004
2028	1,079,772,004	100,862,097	220,482,687	-	1,033,404	73,781,983	1,032,899,993
2029	1,032,899,993	98,276,260	215,774,148	-	953,857	70,471,359	984,919,606
2030	984,919,606	95,692,845	210,702,800	-	876,732	67,093,486	936,126,405
2031	936,126,405	93,110,915	205,236,464	-	801,093	63,670,876	886,870,640
2032	886,870,640	90,530,971	199,528,828	-	727,439	60,223,393	837,368,737
2033	837,368,737	87,953,831	193,492,899	-	656,589	56,769,776	787,942,857
2034	787,942,857	85,382,299	187,087,618	-	591,347	53,334,773	738,980,964
2035	738,980,964	82,816,447	180,305,064	-	531,785	49,946,718	690,907,280
2036	690,907,280	80,255,013	173,255,327	-	476,642	46,632,370	644,062,695
2037	644,062,695	77,697,094	166,056,602	-	425,013	43,412,178	598,690,353
2038	598,690,353	75,142,999	158,670,598	-	377,208	40,305,081	555,090,628
2039	555,090,628	72,593,283	151,040,576	-	333,782	37,334,812	513,644,364
2040	513,644,364	70,047,828	143,305,746	-	294,617	34,523,961	474,615,790
2041	474,615,790	67,506,348	135,544,799	-	259,427	31,888,836	438,206,748
2042	438,206,748	64,968,275	127,717,475	-	227,645	29,445,461	404,675,364
2043	404,675,364	62,433,136	119,949,675	-	198,796	27,208,027	374,168,056
2044	374,168,056	59,900,105	112,218,268	-	172,055	25,187,940	346,865,778
2045	346,865,778	57,369,067	104,565,918	-	147,307	23,396,769	322,918,389
2046	322,918,389	54,840,795	97,038,264	-	125,325	21,843,728	302,439,323
2047	302,439,323	52,315,309	89,711,385	-	106,130	20,534,315	285,471,433
2048	285,471,433	49,792,171	82,627,619	-	89,282	19,470,125	272,016,828
2049	272,016,828	47,271,017	75,818,114	-	74,418	18,650,204	262,045,516
2050	262,045,516	44,751,516	69,306,686	-	61,207	18,071,537	255,500,676
2051	255,500,676	42,233,532	63,108,430	-	49,513	17,729,481	252,305,745
2052	252,305,745	39,717,069	57,250,172	-	39,341	17,617,546	252,350,848
2053	252,350,848	37,202,097	51,745,710	-	30,659	17,727,300	255,503,876
2054	255,503,876	23,383	46,597,985	-	23,383	16,817,807	225,723,699
2055	225,723,699	17,564	41,806,811	-	17,564	14,834,879	198,751,767
2056	198,751,767	13,018	37,370,240	-	13,018	13,042,392	174,423,920
2057	174,423,920	9,411	33,283,478	-	9,411	11,428,647	152,569,089
2058	152,569,089	6,642	29,537,449	-	6,642	9,981,599	133,013,239
2059	133,013,239	4,634	26,120,086	-	4,634	8,689,093	115,582,247
2060	115,582,247	3,209	23,017,024	-	3,209	7,539,050	100,104,273
2061	100,104,273	2,215	20,212,002	-	2,215	6,519,625	86,411,897
2062	86,411,897	1,525	17,687,458	-	1,525	5,619,336	74,343,775
2063	74,343,775	1,053	15,425,050	-	1,053	4,827,170	63,745,894
2064	63,745,894	729	13,405,986	-	729	4,132,658	54,472,567
2065	54,472,567	503	11,611,335	-	503	3,525,941	46,387,174
2066	46,387,174	344	10,022,305	-	344	2,997,808	39,362,677

Employer contributions as shown may differ substantially from those determined by a funding valuation.

Single Discount Rate Development

Projection of Plan Fiduciary Net Position at 7.23%

End of Year (Concluded)

Fiscal Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected ASF Refund	Projected Administrative Expenses	Projected Investment Earnings at 7.23% (5.25% for ASF)	Projected Ending Plan Net Position
Ending June 30,	(a)	(b)	(c)	(d)	(e)	(f)	(g)=(a)+(b)-(c)-(d)-(e)+(f)
2066	\$ 46,387,174	\$ 344	\$ 10,022,305	\$ -	\$ 344	\$ 2,997,808	\$ 39,362,677
2067	39,362,677	235	8,620,592	-	235	2,539,725	33,281,810
2068	33,281,810	158	7,388,705	-	158	2,143,834	28,036,939
2069	28,036,939	105	6,310,118	-	105	1,802,940	23,529,761
2070	23,529,761	68	5,369,327	-	68	1,510,488	19,670,921
2071	19,670,921	43	4,551,820	-	43	1,260,531	16,379,632
2072	16,379,632	27	3,844,101	-	27	1,047,708	13,583,238
2073	13,583,238	16	3,233,752	-	16	867,208	11,216,694
2074	11,216,694	9	2,709,399	-	9	714,731	9,222,027
2075	9,222,027	4	2,260,665	-	4	586,456	7,547,818
2076	7,547,818	1	1,878,130	-	1	478,998	6,148,686
2077	6,148,686	-	1,553,306	-	-	389,378	4,984,758
2078	4,984,758	-	1,278,594	-	-	314,983	4,021,147
2079	4,021,147	-	1,047,260	-	-	253,531	3,227,418
2080	3,227,418	-	853,364	-	-	203,032	2,577,085
2081	2,577,085	-	691,683	-	-	161,755	2,047,158
2082	2,047,158	-	557,632	-	-	128,203	1,617,728
2083	1,617,728	-	447,171	-	-	101,079	1,271,635
2084	1,271,635	-	356,707	-	-	79,269	994,197
2085	994,197	-	283,068	-	-	61,826	772,956
2086	772,956	-	223,477	-	-	47,947	597,426
2087	597,426	-	175,513	-	-	36,960	458,873
2088	458,873	-	137,101	-	-	28,307	350,078
2089	350,078	-	106,492	-	-	21,528	265,114
2090	265,114	-	82,219	-	-	16,247	199,143
2091	199,143	-	63,055	-	-	12,158	148,246
2092	148,246	-	47,994	-	-	9,013	109,265
2093	109,265	-	36,217	-	-	6,613	79,661
2094	79,661	-	27,062	-	-	4,798	57,398
2095	57,398	-	20,001	-	-	3,439	40,836
2096	40,836	-	14,603	-	-	2,434	28,667
2097	28,667	-	10,520	-	-	1,699	19,846
2098	19,846	-	7,470	-	-	1,170	13,546
2099	13,546	-	5,225	-	-	794	9,114
2100	9,114	-	3,600	-	-	531	6,045
2101	6,045	-	2,443	-	-	350	3,953
2102	3,953	-	1,632	-	-	228	2,549
2103	2,549	-	1,075	-	-	146	1,619
2104	1,619	-	698	-	-	92	1,014
2105	1,014	-	447	-	-	57	624
2106	624	-	282	-	-	35	377
2107	377	-	175	-	-	21	223
2108	223	-	107	-	-	12	129
2109	129	-	63	-	-	7	72
2110	72	-	37	-	-	4	40
2111	40	-	21	-	-	2	21
2112	21	-	12	-	-	1	11
2113	11	-	6	-	-	1	5
2114	5	-	3	-	-	0	2
2115	2	-	2	-	-	0	0
2116	0	-	-	-	-	0	0

Employer contributions as shown may differ substantially from those determined by a funding valuation.

Single Discount Rate Development

Present Values of Projected Benefits at 7.23%

End of Year (Excluding ASF)

Fiscal Year	Projected	Projected Benefit	Funded Portion of	Unfunded Portion	Present Value of	Present Value of	Present Value of
Ending	Beginning Plan Net	Payments	Benefit Payments	of Benefit	Funded Benefit	Unfunded Benefit	Benefit
June 30,	Position			Payments	Payments using	Payments using	Payments using
					Expected Return	Municipal Bond	Single Discount
					Rate (v)	Rate (vf)	Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^(a)-.5	(g)=(e)*vf^(a)-.5	(h)=((c)/(1+sdr)^(a)-.5)
2017	\$ 1,787,163,591	\$ 247,919,452	\$ 247,919,452	\$ -	\$ 239,415,603	\$ -	\$ 239,415,603
2018	1,746,879,166	247,001,131	247,001,131	-	222,445,940	-	222,445,940
2019	1,690,437,842	246,415,038	246,415,038	-	206,955,248	-	206,955,248
2020	1,626,081,848	244,980,691	244,980,691	-	191,877,824	-	191,877,824
2021	1,537,907,689	242,984,723	242,984,723	-	177,482,523	-	177,482,523
2022	1,445,672,094	240,658,378	240,658,378	-	163,931,081	-	163,931,081
2023	1,349,307,459	237,877,342	237,877,342	-	151,111,351	-	151,111,351
2024	1,248,973,543	234,790,414	234,790,414	-	139,093,895	-	139,093,895
2025	1,209,900,124	231,640,195	231,640,195	-	127,975,054	-	127,975,054
2026	1,168,668,498	228,449,640	228,449,640	-	117,702,468	-	117,702,468
2027	1,125,164,395	224,729,409	224,729,409	-	107,978,850	-	107,978,850
2028	1,079,772,004	220,482,687	220,482,687	-	98,795,457	-	98,795,457
2029	1,032,899,993	215,774,148	215,774,148	-	90,166,578	-	90,166,578
2030	984,919,606	210,702,800	210,702,800	-	82,110,780	-	82,110,780
2031	936,126,405	205,236,464	205,236,464	-	74,587,850	-	74,587,850
2032	886,870,640	199,528,828	199,528,828	-	67,624,320	-	67,624,320
2033	837,368,737	193,492,899	193,492,899	-	61,156,973	-	61,156,973
2034	787,942,857	187,087,618	187,087,618	-	55,145,451	-	55,145,451
2035	738,980,964	180,305,064	180,305,064	-	49,562,849	-	49,562,849
2036	690,907,280	173,255,327	173,255,327	-	44,413,871	-	44,413,871
2037	644,062,695	166,056,602	166,056,602	-	39,698,297	-	39,698,297
2038	598,690,353	158,670,598	158,670,598	-	35,374,954	-	35,374,954
2039	555,090,628	151,040,576	151,040,576	-	31,403,406	-	31,403,406
2040	513,644,364	143,305,746	143,305,746	-	27,786,280	-	27,786,280
2041	474,615,790	135,544,799	135,544,799	-	24,509,438	-	24,509,438
2042	438,206,748	127,717,475	127,717,475	-	21,536,966	-	21,536,966
2043	404,675,364	119,949,675	119,949,675	-	18,863,269	-	18,863,269
2044	374,168,056	112,218,268	112,218,268	-	16,457,549	-	16,457,549
2045	346,865,778	104,565,918	104,565,918	-	14,301,297	-	14,301,297
2046	322,918,389	97,038,264	97,038,264	-	12,376,903	-	12,376,903
2047	302,439,323	89,711,385	89,711,385	-	10,670,880	-	10,670,880
2048	285,471,433	82,627,619	82,627,619	-	9,165,615	-	9,165,615
2049	272,016,828	75,818,114	75,818,114	-	7,843,195	-	7,843,195
2050	262,045,516	69,306,686	69,306,686	-	6,686,193	-	6,686,193
2051	255,500,676	63,108,430	63,108,430	-	5,677,731	-	5,677,731
2052	252,305,745	57,250,172	57,250,172	-	4,803,391	-	4,803,391
2053	252,350,848	51,745,710	51,745,710	-	4,048,827	-	4,048,827
2054	255,503,876	46,597,985	46,597,985	-	3,400,209	-	3,400,209
2055	225,723,699	41,806,811	41,806,811	-	2,844,915	-	2,844,915
2056	198,751,767	37,370,240	37,370,240	-	2,371,547	-	2,371,547
2057	174,423,920	33,283,478	33,283,478	-	1,969,783	-	1,969,783
2058	152,569,089	29,537,449	29,537,449	-	1,630,220	-	1,630,220
2059	133,013,239	26,120,086	26,120,086	-	1,344,410	-	1,344,410
2060	115,582,247	23,017,024	23,017,024	-	1,104,816	-	1,104,816
2061	100,104,273	20,212,002	20,212,002	-	904,761	-	904,761
2062	86,411,897	17,687,458	17,687,458	-	738,369	-	738,369
2063	74,343,775	15,425,050	15,425,050	-	600,507	-	600,507
2064	63,745,894	13,405,986	13,405,986	-	486,714	-	486,714
2065	54,472,567	11,611,335	11,611,335	-	393,135	-	393,135
2066	46,387,174	10,022,305	10,022,305	-	316,454	-	316,454

Single Discount Rate Development

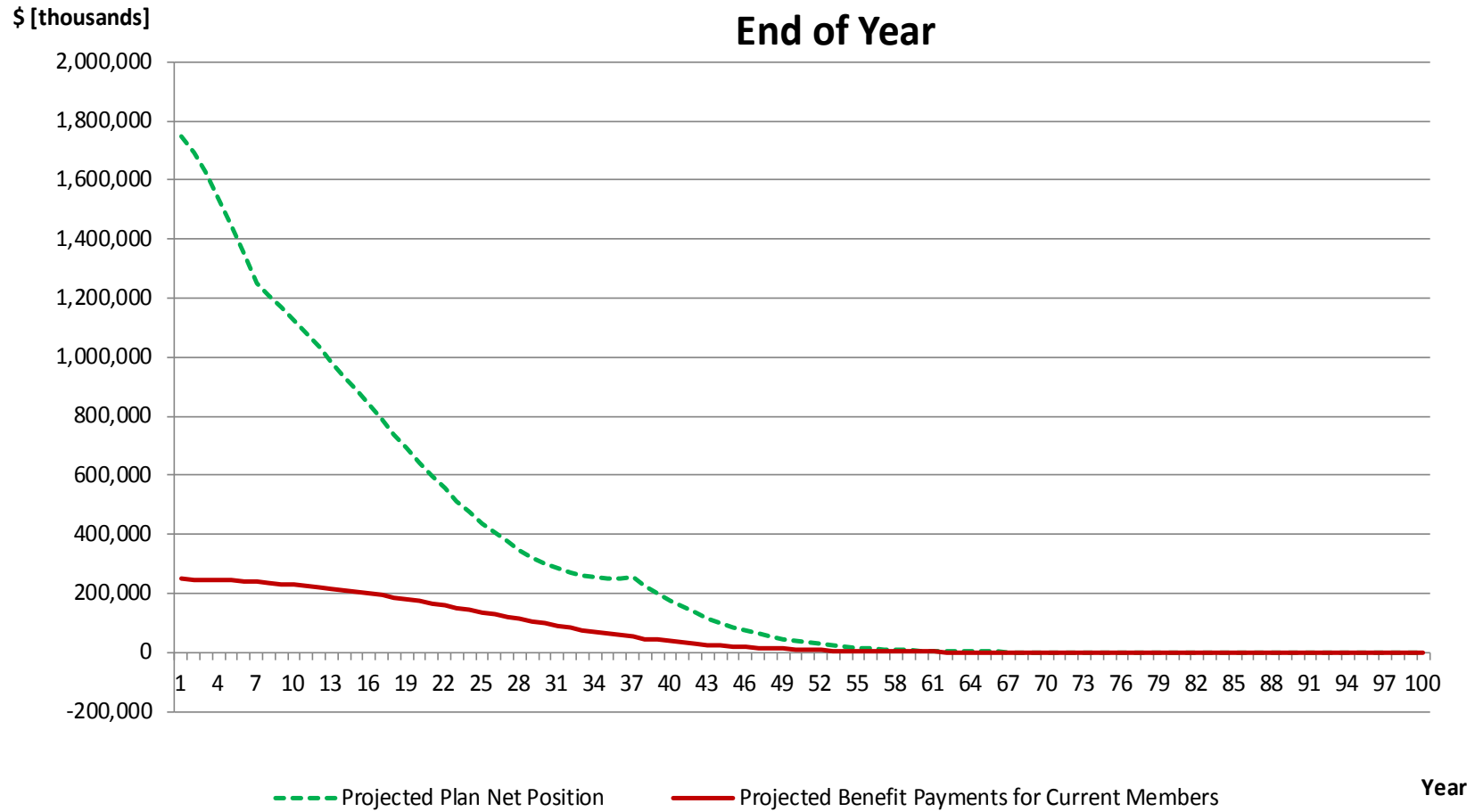
Present Values of Projected Benefits at 7.23%

End of Year

(Excluding ASF) (Concluded)

Fiscal Year	Projected Beginning Position	Projected Plan Net	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)
Ending June 30,	Position	Payments	Payments	Payments	Payments	(f)=(d)*v^((a)-.5)	(g)=(e)*vf ^((a)-.5)	(h)=((c)/(1+sdr)^(a-.5)
(a)	(b)	(c)	(d)	(e)	(e)			
2067	\$ 39,362,677	\$ 8,620,592	\$ 8,620,592	\$ -	\$ -	\$ 253,842	\$ -	\$ 253,842
2068	33,281,810	7,388,705	7,388,705	-	-	202,898	-	202,898
2069	28,036,939	6,310,118	6,310,118	-	-	161,596	-	161,596
2070	23,529,761	5,369,327	5,369,327	-	-	128,232	-	128,232
2071	19,670,921	4,551,820	4,551,820	-	-	101,379	-	101,379
2072	16,379,632	3,844,101	3,844,101	-	-	79,844	-	79,844
2073	13,583,238	3,233,752	3,233,752	-	-	62,638	-	62,638
2074	11,216,694	2,709,399	2,709,399	-	-	48,942	-	48,942
2075	9,222,027	2,260,665	2,260,665	-	-	38,083	-	38,083
2076	7,547,818	1,878,130	1,878,130	-	-	29,506	-	29,506
2077	6,148,686	1,553,306	1,553,306	-	-	22,757	-	22,757
2078	4,984,758	1,278,594	1,278,594	-	-	17,469	-	17,469
2079	4,021,147	1,047,260	1,047,260	-	-	13,344	-	13,344
2080	3,227,418	853,364	853,364	-	-	10,140	-	10,140
2081	2,577,085	691,683	691,683	-	-	7,665	-	7,665
2082	2,047,158	557,632	557,632	-	-	5,763	-	5,763
2083	1,617,728	447,171	447,171	-	-	4,310	-	4,310
2084	1,271,635	356,707	356,707	-	-	3,206	-	3,206
2085	994,197	283,068	283,068	-	-	2,373	-	2,373
2086	772,956	223,477	223,477	-	-	1,747	-	1,747
2087	597,425	175,513	175,513	-	-	1,279	-	1,279
2088	458,873	137,101	137,101	-	-	932	-	932
2089	350,078	106,492	106,492	-	-	675	-	675
2090	265,114	82,219	82,219	-	-	486	-	486
2091	199,143	63,055	63,055	-	-	348	-	348
2092	148,246	47,994	47,994	-	-	247	-	247
2093	109,265	36,217	36,217	-	-	174	-	174
2094	79,661	27,062	27,062	-	-	121	-	121
2095	57,398	20,001	20,001	-	-	83	-	83
2096	40,836	14,603	14,603	-	-	57	-	57
2097	28,667	10,520	10,520	-	-	38	-	38
2098	19,846	7,470	7,470	-	-	25	-	25
2099	13,546	5,225	5,225	-	-	16	-	16
2100	9,114	3,600	3,600	-	-	11	-	11
2101	6,045	2,443	2,443	-	-	7	-	7
2102	3,953	1,632	1,632	-	-	4	-	4
2103	2,549	1,075	1,075	-	-	3	-	3
2104	1,619	698	698	-	-	2	-	2
2105	1,014	447	447	-	-	1	-	1
2106	624	282	282	-	-	1	-	1
2107	377	175	175	-	-	0	-	0
2108	223	107	107	-	-	0	-	0
2109	129	63	63	-	-	0	-	0
2110	72	37	37	-	-	0	-	0
2111	40	21	21	-	-	0	-	0
2112	21	12	12	-	-	0	-	0
2113	11	6	6	-	-	0	-	0
2114	5	3	3	-	-	0	-	0
2115	2	2	2	-	-	0	-	0
2116	-	-	-	-	-	-	-	-
Totals						\$ 2,780,044,236	\$ -	\$ 2,780,044,236

Projection of Plan Net Position and Benefit Payments at 7.23% End of Year



SECTION F

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 system 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

<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."
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Glossary of Terms

<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-Employee Payroll</i>	The payroll of covered employees, which is typically only the pensionable pay and does not include pay above any pay cap.
<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>	<p>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:</p> <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.

Glossary of Terms

<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.
<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. 67, 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. Also known as service cost.