GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

CITY OF SOUTHFIELD
FIRE AND POLICE RETIREMENT SYSTEM

GASB STATEMENT NOS. 67 AND 68 ACCOUNTING AND FINANCIAL REPORTING FOR PENSIONS

JUNE 30, 2015

GRS
Gabriel Roeder Smith & Company
Consultants & Actuaries
One Towne Square
Suite 800
Southfield, MI 48076-3723
248.799.9000 phone
248.799.9020 fax
www.gabrielroeder.com

December 3, 2015

Board of Trustees
City of Southfield Fire and Police Retirement System

Dear Board Members:

This report provides accounting and financial reporting information that is intended to comply with the Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 for the City of Southfield Fire and Police Retirement System. These calculations have been made on a basis that is consistent with our understanding of these Statements.

GASB Statement No. 67 is the accounting standard that applies to the stand-alone financial reports issued by retirement systems. GASB Statement No. 68 establishes accounting and financial reporting for state and local government employers who provide their employees (including former employees) pension benefits through a trust.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of providing reporting and disclosure information that satisfies the requirements of GASB Statement Nos. 67 and 68. The 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. 67 may produce significantly different results. This report may be provided to parties other than the City of Southfield Fire and Police Retirement System only in its entirety and only with the permission of City of Southfield Fire and Police Retirement System.

This report is based upon information, furnished to us by the City of Southfield Fire and Police Retirement System, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. This information was checked for internal consistency, but it was not otherwise audited.

This report complements the actuarial valuation report that was provided to the City of Southfield Fire and Police Retirement System and should be considered in conjunction with that report. Please see the actuarial valuation report as of June 30, 2014 for additional discussion 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 with this report is accurate and fairly represents the actuarial position of the City of Southfield Fire and Police Retirement System. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

The signing actuaries are independent of the plan sponsor.

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

Respectfully submitted,

Judith A. Kermans, EA, FCA, MAAA

Jeffrey T. Tebeau, ASA, MAAA

JAK/JTT:bd

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SECTION A

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY
AS OF JUNE 30, 2015

		2015
Actuarial Valuation Date		June 30, 2014
Measurement Date of the Net Pension Liability		June 30, 2015
Employer's Fiscal Year Ending Date (Reporting Date)		June 30, 2015
Membership		
Number of		
- Retirees and Beneficiaries		308
- Inactive, Nonretired Members		2
- Active Members		214
- Total		524
Covered Payroll (1)	$	18,452,501
Net Pension Liability		
Total Pension Liability	$	237,930,244
Plan Fiduciary Net Position (2)		196,517,586
Net Pension Liability	$	41,412,658
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		82.59 %
Net Pension Liability as a Percentage of Covered Payroll		224.43 %
Development of the Single Discount Rate		
Single Discount Rate		7.75 %
Long-Term Expected Rate of Investment Return		7.75 %
Long-Term Municipal Bond Rate*		3.80 %
Last year ending June 30 in the 2016 to 2115 projection period for which projected benefit payments are fully funded		2115
Total Pension Expense	$	7,589,674

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	$ 539,444	$ -
Changes in assumptions	-	-
Net difference between projected and actual earnings on pension plan investments	9,806,580	-
Total	$ 10,346,024	$ -

Source: "State & local bonds" rate from Federal Reserve statistical release (H.15) as of June 25, 2015. The statistical release describes this rate as "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.

(1) *The amount provided is equal to the sum of the annual pays for members active on the valuation date.*

(2) *The Plan Fiduciary Net Position includes the following balances as of June 30, 2015:*
Active DROP Account Balances - $7,934,656
Reserve for Inflation Equity - $2,115,290
Retiree DROP and DC Account Balances to be Disbursed - $5,902,324

DISCUSSION

Accounting Standard

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

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

Financial Statements

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

Paragraph 57 of GASB Statement No. 68 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to City of Southfield Fire and Police Retirement System subsequent to the measurement date of June 30, 2015.

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

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

Notes to Financial Statements

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

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

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

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

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

Required Supplementary Information

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

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

Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. The net pension liability and pension expense should be measured as of the pension plan's fiscal year end (measurement date) on a date that is within the employer's prior fiscal year. 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, 2014 and a measurement date of June 30, 2015.

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 (which is published by the Federal Reserve) 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 7.75%; the municipal bond rate is 3.80% (based on the weekly rate closest to but not later than the measurement date of the "state & local bonds" rate from Federal Reserve statistical release (H.15)); and the resulting Single Discount Rate is 7.75%.

SECTION B

FINANCIAL STATEMENTS

Pension Expense Under GASB Statement No. 68
Fiscal Year Ended June 30, 2015

A. Expense

1. Service Cost	$	2,803,893
2. Interest on the Total Pension Liability		17,512,901
3. Current-Period Benefit Changes		-
4. Employee Contributions (negative for addition)		(466,794)
5. Projected Earnings on Plan Investments (negative for addition)		(15,357,329)
6. Pension Plan Administrative Expense		403,477
7. Other Changes in Plan Fiduciary Net Position		-
8. Recognition of Outflow (Inflow) of Resources due to Liabilities		241,881
9. Recognition of Outflow (Inflow) of Resources due to Assets		2,451,645
10. Total Pension Expense	**$**	**7,589,674**

Statement of Outflows and Inflows Arising from Current Reporting Period Fiscal Year Ended June 30, 2015

A. Outflows (Inflows) of Resources due to Liabilities		
1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	$	781,324
2. Assumption Changes (gains) or losses	$	-
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		3.2302
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	$	241,881
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for assumption changes	$	-
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities (4. + 5.)	$	241,881
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 (1. - 4.)	$	539,443
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for assumption changes (2. - 5.)	$	-
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities (7. + 8.)	$	539,443
B. Outflows (Inflows) of Resources due to Assets		
1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	$	12,258,225
2. Recognition period for Assets {in years}		5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expenses due to Assets (1. ÷ 2.)	$	2,451,645
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets (1. - 3.)	$	9,806,580

STATEMENT OF OUTFLOWS AND INFLOWS ARISING FROM CURRENT AND PRIOR REPORTING PERIODS
FISCAL YEAR ENDED JUNE 30

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	$ 241,881	$ -	$ 241,881
2. Due to Assets	2,451,645	-	2,451,645
3. Total	$ 2,693,526	$ -	$ 2,693,526

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	$ 241,881	$ -	$ 241,881
2. Assumption Changes	-	-	-
3. Net Difference between projected and actual earnings on pension plan investments	2,451,645	-	2,451,645
4. Total	$ 2,693,526	$ -	$ 2,693,526

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	$ 539,444	$ -	$ 539,444
2. Assumption Changes	-	-	-
3. Net Difference between projected and actual earnings on pension plan investments	9,806,580	-	9,806,580
4. Total	$ 10,346,024	$ -	$ 10,346,024

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
2016	$ 2,693,526
2017	2,693,526
2018	2,507,327
2019	2,451,645
2020	-
Thereafter	-
Total	$ 10,346,024

STATEMENT OF FIDUCIARY NET POSITION
AS OF JUNE 30, 2015

Assets		
Cash and Deposits	$	5,659,620
Receivables		
Accounts Receivable - Sale of Investments	$	-
Accrued Interest and Other Dividends		-
Contributions		-
Accounts Receivable - Other		-
Total Receivables	$	-
Investments		
Fixed Income	$	18,144,098
Domestic Equities		88,365,553
International Equities		-
Real Estate		84,434,399
Other		33,507,886
Total Investments	$	224,451,936
Total Assets	$	230,111,556
Liabilities		
Payables		
Accounts Payable - Purchase of Investments	$	33,507,886
Accrued Expenses		1,152
Accounts Payable - Other		84,932
Total Liabilities	$	33,593,970
Net Position Restricted for Pensions (1)	$	196,517,586

(1) The Plan Fiduciary Net Position includes the following balances as of June 30, 2015:
Active DROP Account Balances - $7,934,656
Reserve for Inflation Equity - $2,115,290
Retiree DROP and DC Account Balances to be Disbursed - $5,902,324

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION FOR YEAR ENDED JUNE 30, 2015

Additions		
Contributions		
Employer	$	5,933,162
Employee		466,794
Other		-
Total Contributions	$	6,399,956
Investment Income		
Net Appreciation in Fair Value of Investments	$	583,620
Interest and Dividends		3,423,032
Less Investment Expense		(907,548)
Net Investment Income	$	3,099,104
Other	$	-
Total Additions	$	9,499,060
Deductions		
Benefit Payments, including Refunds of Employee Contributions	$	15,477,676
Pension Plan Administrative Expense		403,477
Other		-
Total Deductions	$	15,881,153
Net Increase in Net Position	$	(6,382,093)
Net Position Restricted for Pensions		
Beginning of Year	$	202,899,679
End of Year (1)	$	196,517,586

(1) The Plan Fiduciary Net Position includes the following balances as of June 30, 2015:
Active DROP Account Balances - $7,934,656
Reserve for Inflation Equity - $2,115,290
Retiree DROP and DC Account Balances to be Disbursed - $5,902,324

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS CURRENT PERIOD

FISCAL YEAR ENDED JUNE 30, 2015

A. Total pension liability		
1. Service Cost	$	2,803,893
2. Interest on the Total Pension Liability		17,512,901
3. Changes of benefit terms		-
4. Difference between expected and actual experience of the Total Pension Liability		781,324
5. Changes of assumptions		-
6. Benefit payments, including refunds of employee contributions		(15,477,676)
7. Net change in Total Pension Liability	$	5,620,442
8. Total Pension Liability – beginning		232,309,802
9. Total Pension Liability – ending	**$**	**237,930,244**
B. Plan fiduciary net position		
1. Contributions – employer	$	5,933,162
2. Contributions – employee		466,794
3. Net investment income		3,099,104
4. Benefit payments, including refunds of employee contributions		(15,477,676)
5. Pension Plan Administrative Expense		(403,477)
6. Other		-
7. Net change in plan fiduciary net position	$	(6,382,093)
8. Plan Fiduciary Net Position – beginning		202,899,679
9. Plan Fiduciary Net Position – ending	**$**	**196,517,586**
C. Net Pension Liability	**$**	**41,412,658**
D. Plan Fiduciary Net Position as a percentage of the Total Pension Liability		**82.59%**
E. Covered-employee payroll	**$**	**18,452,501**
F. Net Pension Liability as a percentage of covered-employee payroll		**224.43%**

Schedules of Required Supplementary Information
Schedule of Changes in Net Pension Liability and Related Ratios (Multiyear)
Last 10 Fiscal Years (which may be built prospectively)

Fiscal year ending June 30,	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
Total Pension Liability										
Service Cost	$ 2,803,893	$ 2,967,577								
Interest on the Total Pension Liability	17,512,901	17,120,568								
Benefit Changes	-	-								
Difference between Expected and Actual Experience	781,324	-								
Assumption Changes	-	-								
Benefit Payments	(15,485,612)	(14,420,934)								
Refunds	7,936	10,705								
Net Change in Total Pension Liability	5,620,442	5,677,916								
Total Pension Liability - Beginning	232,309,802	226,631,886								
Total Pension Liability - Ending (a)	$ 237,930,244	$ 232,309,802								
Plan Fiduciary Net Position										
Employer Contributions	$ 5,933,162	$ 5,256,046								
Employee Contributions	466,794	475,435								
Pension Plan Net Investment Income	3,099,104	30,545,333								
Benefit Payments	(15,485,612)	(14,420,934)								
Refunds	7,936	10,705								
Pension Plan Administrative Expense	(403,477)	(342,022)								
Other	-	-								
Net Change in Plan Fiduciary Net Position	(6,382,093)	21,524,563								
Plan Fiduciary Net Position - Beginning	202,899,679	181,375,116								
Plan Fiduciary Net Position - Ending (b)	$ 196,517,586	$ 202,899,679								
Net Pension Liability - Ending (a) - (b)	41,412,658	29,410,123								
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	82.59 %	87.34 %								
Covered-Employee Payroll (1)	$ 18,452,501	$ 18,819,454								
Net Pension Liability as a Percentage of Covered-Employee Payroll	224.43 %	156.28 %								

Notes to Schedule:

The Plan Fiduciary Net Position includes balances for Active DROP Accounts, Reserve for Inflation Equity, and Retiree DROP and DC Account Balances to be disbursed.

(1) *The amount provided is equal to the sum of the annual pays for members active on the valuation date.*

SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF THE NET PENSION LIABILITY (MULTIYEAR)
Last 10 Fiscal Years (which may be built prospectively)

FY Ending June 30,	Total Pension Liability	Plan Net Position (2)	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll (1)	Net Pension Liability as a % of Covered Payroll
2006						
2007						
2008						
2009						
2010						
2011						
2012						
2013						
2014	$ 232,309,802	$ 202,899,679	$ 29,410,123	87.34 %	$ 18,819,454	156.28 %
2015	237,930,244	196,517,586	41,412,658	82.59 %	18,452,501	224.43 %

(1) *The amount provided is equal to the sum of the annual pays for members active on the valuation date.*

(2) *The Plan Fiduciary Net Position includes balances for Active DROP Accounts, the Reserve for Inflation Equity, and Retiree DROP and DC Account Balances to be Disbursed.*

SCHEDULE OF CONTRIBUTIONS (MULTIYEAR)
LAST 10 FISCAL YEARS

FY Ending June 30,	Actuarially Determined Contribution (2)	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll (1)	Actual Contribution as a % of Covered Payroll
2006					
2007					
2008					
2009					
2010					
2011					
2012					
2013					
2014	$ 5,256,046	$ 5,256,046	$ -	$ 18,819,454	27.93 %
2015	5,933,162	5,933,162	-	18,452,501	32.15 %

(1) *The amount provided is equal to the sum of the annual pays for members active on the valuation date.*

(2) *Since it was reported to the actuary that the City's practice is to contribute the percent-of-payroll employer contribution rate shown in the actuarial valuation report multiplied by the covered payroll (including DROP people), the actuarially determined contributions shown above are the actual contributions made by the City in the fiscal year.*

NOTES TO SCHEDULE OF CONTRIBUTIONS

Valuation Date:	June 30, 2014
Notes	Actuarially determined contribution amounts are calculated as of June 30 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 Contribution Rates for the Fiscal Year Ending June 30, 2015:

Actuarial Cost Method	Entry-Age Normal
Amortization Method	Level Percent, Closed
Remaining Amortization Period	24 years for the June 30, 2013 valuation
Asset Valuation Method	5-Year smoothed market
Inflation	4.00% wage inflation; no explicit price inflation assumption is used in this valuation.
Salary Increases	4.00% to 9.00% including wage inflation
Investment Rate of Return	7.75% (net of investment expenses)
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition.
Mortality	RP-2000 Mortality Combined Healthy Tables, projected to 2015.

Other Information:

Notes	The Plan Fiduciary Net Position includes the following balances as of June 30, 2015: DROP Account Balances - $7,934,656, Reserve for Inflation Equity - $2,115,290, and Retiree Account Balances to be Disbursed - $5,902,324.

SECTION D

NOTES TO FINANCIAL STATEMENTS

Auditor's Note – This information is intended to assist in preparation of the financial statements of the City of Southfield Fire and Police Retirement System. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

Single Discount Rate

A Single Discount Rate (SDR) of 7.75% was used to measure the total pension liability. This SDR was based on the expected rate of return on pension plan investments of 7.75%. The projection of cash flows used to determine this SDR assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the net pension liability to changes in the SDR, the following presents the plan's net pension liability, calculated using a SDR of 7.75%, as well as what the plan's net pension liability would be if it were calculated using a SDR that is one percent lower or one percent higher:

SENSITIVITY OF NET PENSION LIABILITY TO THE SINGLE DISCOUNT RATE ASSUMPTION

	1% Decrease 6.75%	Current Single Discount Rate Assumption 7.75%	1% Increase 8.75%
Total Pension Liability	$ 261,116,200	$ 237,930,244	$ 218,517,494
Plan Fiduciary Net Position	196,517,586	196,517,586	196,517,586
Net Pension Liability/(Asset)	$ 64,598,614	$ 41,412,658	$ 21,999,908

SUMMARY OF POPULATION STATISTICS

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	308
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	2
Active Plan Members	214
Total Plan Members	524

SECTION E

SUMMARY OF BENEFITS

BRIEF SUMMARY OF ACT 345 BENEFIT PROVISIONS (JUNE 30, 2015)

Eligibility	Amount
SERVICE RETIREMENT	
20 or more years of service regardless of age.	
Police Command hired before March 1, 2014, Police Patrol Officers hired before February 22, 2013, and Firemen hired before July 1, 2009.	Straight life pension equals 2.8% of highest 3-year AFC in last 10 years times years of service up to 25 years.
Police Command hired on or after March 1, 2014.	Straight life pension equals 2.5% of highest 3-year AFC in last 10 years times years of service up to 25 years.
Police Patrol Officers hired on or after February 22, 2013.	Straight life pension equals 2.5% of highest 5-year AFC in last 10 years times years of service up to 25 years.
Firemen hired after July 1, 2009.	Straight life pension equals 2.5% of highest consecutive 5-year AFC in last 10 years times years of service up to 25 years.
DEFERRED RETIREMENT	
10 or more years of service.	Computed as service retirement but based upon service, AFC and plan provisions in effect at termination. Benefit begins at date retirement would have occurred had member remained in employment.
DEFERRED RETIREMENT OPTION PLAN (DROP)	
20 or more years of service regardless of age. (Closed to Police Patrol hired after June 16, 2014.)	Computed as a service retirement but based on service, AFC and plan provisions at the time of DROP election. Monthly pension benefits and annuity withdrawal account value at DROP date accumulate in hypothetical accounts and accrue interest at a rate of 4% (2% for Police Patrol who DROP on or after June 10, 2014) from date of DROP election to date of retirement. At retirement the hypothetical accounts may be paid out by any distribution alternatives available under the Premium Member Annuity Withdrawal Plan and the monthly benefit (previously computed) is paid to the member in the form of a straight life pension (with survivor benefit option, if applicable).
DEATH AFTER RETIREMENT SURVIVOR'S PENSION	
Payable to surviving spouse, if any, upon the death of a retired member who was receiving a straight life pension which was effective July 1, 1975 or later. Includes disability pensions effective July 1, 1985. Includes members who DROP effective July 1, 1999.	Spouse's pension equals 60% of the straight life pension the deceased retiree was receiving. Must be married to spouse at time of retirement for spouse to be eligible for survivor benefits.

BRIEF SUMMARY OF ACT 345 BENEFIT PROVISIONS (CONTINUED) (JUNE 30, 2015)

Eligibility	Amount
NON-DUTY DEATH-IN-SERVICE SURVIVOR'S PENSION	
Payable to a surviving spouse, if any, upon the death of a Police or Fire member with 10 or more years of service.	Accrued straight life pension actuarially reduced in accordance with an Option I election.
DUTY DEATH-IN-SERVICE SURVIVOR'S PENSION	
Payable to a surviving spouse and eligible children of a member who died in the line of duty.	Straight life pension, calculated with a minimum of 25 years of service, actuarially reduced in accordance with Option 1 election. Workers' Compensation offset.
NON-DUTY DISABILITY	
Payable upon the total and permanent disability of a member with 5 or more years of service.	To age 55: 1.5% of AFC times years of service. At age 55: 2.0% of AFC times years of service.
DUTY DISABILITY	
Payable upon the total and permanent disability of a member in the line of duty…	
Police: …who is unable to perform any occupation	To age 55: 100% of base salary at time of retirement, minimum 85% of active base. At age 55: Frozen at age 55 rate.
…who is unable to perform own occupation	To age 55: 60% of base salary at time of retirement, minimum 51% of active base. At age 55: Frozen at age 55 rate.
Fire:	To age 55: Either 1) 80% of base salary for the first 5 years, then 60% of base salary, or, 2) 60% of base salary with 51% minimum. At age 55: Frozen at age 55 rate.

POST-RETIREMENT INCREASES

An ad-hoc increase was granted during the year ended June 30, 2000.

BRIEF SUMMARY OF ACT 345 BENEFIT PROVISIONS (CONCLUDED) (JUNE 30, 2015)

Eligibility	Amount
MEMBER CONTRIBUTIONS	
Fire Chief	0.00% of pay.
Police Chief	5.00% of pay.
Fire and Police Patrol Officers hired before February 22, 2013. Police Command hired before March 1, 2014.	3.00% of pay, non-refundable.
Fire hired after July 1, 2009, Police Patrol Officers hired after February 22, 2013, and Police Command hired after March 1, 2014.	5.00% of pay, non-refundable.
	The Fire Chief and the Police Chief are eligible for annuity withdrawal with no reduction upon retirement.
	Fire, Police Patrol, and Police Command members are eligible for annuity withdrawal with no reduction upon retirement for contributions made prior to September 16, 2011, March 15, 2013, and March 14, 2014 respectively. Fire and Police Patrol member contributions made after these dates are non-refundable. Fire and Police Patrol members in the DROP no longer contribute.
INTEREST ON MEMBER ACCOUNTS	
Active or Former members who have not DROPped.	Interest at the rate of 2% per annum is paid on member contributions from date of hire to the earlier of DROP date or retirement date.
DROPped members.	Interest at the rate of 4% (2% for Police Patrol who DROP on or after June 10, 2014) per annum is paid on DROP account and annuity withdrawal account from DROP date to retirement date. Fire contributions made while in the DROP prior to September 16, 2011 accumulate at the market rate minus 30 basis points per annum.
ITEMS INCLUDED IN AFC	
All members.	Overtime, longevity, pay in lieu of holiday time.
Police and Police Command.	Education pay, 75% of annual excess (over 1,200 hrs) sick leave, paid compensatory time, and early report time.
Deputy Chiefs.	Up to 900 hours of unused sick/vacation/comp. leave.

SUMMARY OF DROP PROVISIONS

EFFECTIVE DATE

July 1, 1999.

ELIGIBILITY

A member of the Southfield Fire and Police Retirement System who has satisfied the minimum requirements for a normal service retirement under the FPRS. This eligibility is currently 20 years of service.

ELECTION OF DROP

A member satisfying DROP eligibility conditions would be permitted to either:

1) Retire; or
2) Continue working and retire at a future date with a pension based on credited service and average final compensation (AFC) at date of termination of employment; or
3) Irrevocably elect to participate in the DROP and retire at a date no more than 5 years in the future with a pension based on AFC and service at date of election to participate in the DROP.

DROP CREDITS

The account of a participating member is credited with:

- The pension payments the member would have been paid if the member had retired on the date of DROP election; and
- Interest credits at the rate of 4% (2% for Police Patrol who DROP on or after June 10, 2014) per annum. Additional contributions made prior to August 15, 2011 by Fire (5%) accumulate at market rate – 30 basis points per annum.

Retirement from DROP

Upon termination of employment the frozen monthly pension begins and the member can elect any of the distribution alternatives available under the Premium Member Annuity Withdrawal Plan for the DROP account.

SUMMARY OF DROP PROVISIONS (CONCLUDED)

Disability or Death during DROP Participation

Benefits payable to a member (or surviving spouse) if death or disability occurs during the DROP participation period will be computed in the same manner as if the member had retired from the DROP plan the day prior to the death or disability.

Covered Payroll

The payroll of DROP participants will be included in the covered compensation upon which regular City contributions are based. However, member contributions will cease upon election of DROP.

Revocation of DROP Election

Under certain, limited circumstances, members who become disabled in the line of duty, or who die in the line of duty, may revoke the DROP election and be treated as if they never participated in the DROP plan.

SUMMARY OF RESERVE FOR INFLATION EQUITY (RIE) PROVISIONS

Effective Date

October 25, 1999 for Fire and July 1, 2000 for Police Command.

Coverage of Program

All members retiring after July 1, 1999 for Fire and July 1, 2000 for Police Command.

Accumulation Formula

Each year, beginning July 1, 1999 for Fire and July 1, 2000 for Police Command, funds will be credited to the RIE fund in accordance with the following formula: 55% of the 5-year average of the funding value rate of return over a threshold of 8.0% as of June 30th, not to exceed 3.0%, multiplied by the System assets of retired member and members who have elected to participate in the Deferred Retirement Option Plan (DROP), who will be eligible to receive distributions from the RIE program either now or in the future. (This Accumulation Formula can be found on page B-15 of the valuation report.) The RIE receives 7.75% interest each year.

Point Accumulation

Each covered member shall accumulate points in accordance with the following formula:

a) One point for each full year of service, not to exceed 25; plus
b) Two points for each full year since retirement.

Eligibility for Distribution

A covered member will be eligible for an immediate distribution on the later of (a), (b), or (c) below:

a) The first July 1st, which is at least five years after the member's retirement, defined as the later of the date that a member either separated from service or began to receive a pension.
b) The year after the member's pension has lost 15% of its original purchasing power, defined as a 15% increase in the Consumer Price Index for All Urban Consumers (CPI-U), U. S. City average, all items 1982-1984 = 100.
c) The member's accumulation of 35 points.

Distributable Reserve

No more than 35% of the funds in the RIE fund shall be distributed in any given year.

SUMMARY OF RESERVE FOR INFLATION EQUITY (RIE) PROVISIONS (CONCLUDED)

Individual Distributions

Each benefit recipient's share will be computed by dividing the benefit recipient's total points by the total points of all eligible benefit recipients and multiplying the result by the Distribution Reserve. The maximum amount payable to any benefit recipient is the amount which would restore 85% of the member's original purchasing power. A surviving spouse of a member will receive 60% of the amount which would have been payable to the member had the member survived.

Distribution Date

Distributions of RIE Program benefit checks shall be determined by the City of Southfield Fire and Police Retirement Board for years in which sufficient funds are available for distribution.

SECTION F

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

ACTUARIAL COST METHODS

Normal cost and the allocation of benefit values between service rendered before and after the valuation date was determined using an individual entry-age actuarial cost method having the following characteristics:

- The annual normal cost for each individual active member, payable from the date of employment to the date of retirement are sufficient to accumulate the value of the member's benefit at the time of retirement; and

- each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Financing of Unfunded Actuarial Accrued Liabilities. Unfunded actuarial accrued liabilities (the portion of total liabilities not covered by present assets or expected future normal cost contributions) were amortized by level percent-of-payroll contributions over a period of 22 years in the June 30, 2015 valuation. This UAAL payment reflects payments expected to be made between the valuation date and the date contributions determined by this report are scheduled to begin.

The value of the assets for GASB Statement Nos. 67 and 68 reporting purposes was the fair market value of assets.

The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2014, rolled-forward to the measurement date of June 30, 2015. The roll-forward procedure increases the June 30, 2014 actuarial accrued liability with normal cost and interest and decreases it with actual benefit payments.

ACTUARIAL ASSUMPTIONS USED FOR THE GASB STATEMENT NOS. 67 AND 68

The actuary calculates the contribution requirements and benefit values of the System by applying actuarial assumptions to the benefit provisions and people information furnished, using the actuarial cost methods described on the previous page.

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

- long-term rates of investment return to be generated by the assets of the System
- patterns of pay increases to members
- rates of mortality among members, retirees and beneficiaries
- rates of withdrawal of active members (without entitlement to a retirement benefit)
- rates of disability among members
- the age patterns of actual retirement
- rate of increase in the cost of retiree health insurance

In making a valuation, the actuary calculates the monetary effect of each assumption for as long as a present covered person survives - - - a period of time which can be as long as a century.

Actual experience of the System will not coincide exactly with assumed experience, regardless of the accuracy of the assumptions, or the skill of the actuary and the precision of the many calculations made. Each valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments (usually small) to the computed contribution rate.

From time-to-time it becomes appropriate to modify one or more of the assumptions, to reflect experience trends (but not random year-to-year fluctuations). The assumptions are established by the Board after consulting with the actuary. New assumptions were adopted for the June 30, 2011 valuation pursuant to the Experience Study dated July 15, 2011, which contains the rationale for these assumptions. All assumptions are based on future expectations, not market measures.

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

	Salary Increase Assumptions for Individual Members		
Years of Service	**Merit & Seniority**	**Base (Economic)**	**Increase Next Year**
1 to 3	5.00%	4.00%	9.00%
4	2.50%	4.00%	6.50%
5	1.50%	4.00%	5.50%
6	0.50%	4.00%	4.50%
7	0.30%	4.00%	4.30%
8	0.20%	4.00%	4.20%
9 & Up	0.00%	4.00%	4.00%

If the number of active members remains constant, then the total active member payroll will increase 4.00% annually, the base portion of the individual salary increase assumptions. This increasing payroll was recognized in amortizing Unfunded Actuarial accrued Liabilities.

The assumed nominal rate of investment return was 7.75% a year compounded annually net of investment expenses. This assumption is used to make money payable at one point in time equal in value to a different amount of money payable at another point in time. ***The assumed real return*** for funding purposes is the rate of return in excess of wage inflation: 3.75%.

The mortality table was the RP-2000 Mortality Table projected to 2015.

Sample	Value at Retirement of $1 Monthly for Life		Future Life Expectancy (Years)		Percent Dying Next Year	
Ages	**Men**	**Women**	**Men**	**Women**	**Men**	**Women**
45	$146.44	$148.05	37.05	39.19	0.1239%	0.0882%
50	141.12	143.16	32.29	34.38	0.1628%	0.1296%
55	133.84	136.54	27.59	29.64	0.2718%	0.2409%
60	124.45	128.10	23.05	25.08	0.5297%	0.4689%
65	113.02	117.87	18.79	20.80	1.0309%	0.9003%
70	99.78	106.04	14.89	16.86	1.7702%	1.5529%
75	84.40	92.62	11.34	13.29	3.0622%	2.4916%
80	67.83	77.64	8.25	10.09	5.5360%	4.1291%

This assumption is used to measure the probabilities of each benefit payment being made after retirement. These rates reflect a margin for expected mortality improvement equal to 1 year of expected mortality improvement under Projection Scale AA, as of June 30, 2014.

50% of these rates are used to measure the probabilities of members dying before retirement. 50% of the pre-retirement deaths are assumed to be duty related and 50% are assumed to non-duty related.

The rates of retirement used to measure the probability of eligible members retiring during the next year were as follows:

Years of Service	% Retiring During the Next Year
20	10.0 %
21	3.0
22	3.0
23	3.0
24	3.0
25	20.0
26	10.0
27	10.0
28	25.0
29	25.0
30	50.0
31	50.0
32	50.0
33	50.0
34	50.0
35 & Up	100.0

A member is eligible for retirement after completing 20 or more years of service.

Active members in the DROP are assumed to follow the retirement rates above. However, they are assumed to retire at a rate of 100% in the fifth year following DROP.

Rates of separation from active membership were as shown below (rates do not apply to members eligible to retire and do not include separation on account of death or disability). This assumption measures the probabilities of members remaining in employment.

Sample Ages	Years of Service	% of Active Members Separating Within the Next Year
ALL	0	8.00%
	1	5.00%
	2	3.00%
	3	2.00%
	4	2.00%
20	5 & Over	1.00%
25		1.00%
30		0.90%
35		0.65%
40		0.50%
45		0.35%
50		0.25%
55		0.20%
60		0.20%
65		0.20%
70		0.20%

Rates of disability were as follows:

Sample Ages	% of Active Members Becoming Disabled Within the Next Year	
	Men	Women
20	0.11%	0.05%
25	0.14%	0.08%
30	0.15%	0.12%
35	0.22%	0.20%
40	0.32%	0.29%
45	0.49%	0.43%
50	0.79%	0.68%
55	1.38%	1.16%
60	2.30%	1.67%

In addition, 25% of the disabilities are assumed to be non-duty related and 75% are assumed to be duty related; of the 75% assumed to be duty disability, half were assumed to be covered under their own occupation provisions.

Expense Load. Normal cost for pensions was loaded by 1.5% of active payroll to cover administrative expenses.

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS
JUNE 30, 2015

Marriage Assumption:	100% are assumed to be married for purposes of death-in-service benefits and 84% are assumed to be married for deaths after retirement. Male spouses are assumed to be three years older than female spouses.
Pay Increase Timing:	Middle of the valuation year.
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 service nearest whole year on the date the decrement is assumed to occur.
Decrement Relativity:	Decrement rates are used directly from experience, without adjustment for multiple decrement table effects.
Decrement Operation:	Only withdrawal operates the first 5 years of service. Only mortality operates during retirement eligibility.
Service Credit Accruals:	It is assumed that members accrue one year of service credit per year.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the year based upon the computed percent-of-payroll shown in this report, and the actual payroll (including DROP payroll) payable at the time contributions are made.
Normal Form of Benefit:	A 60% automatic joint and survivor payment is the assumed normal form of benefit for married people.
Benefit Service:	Exact fractional service is used to determine the amount of benefit payable.

SECTION G

CALCULATION OF THE SINGLE DISCOUNT RATE

CALCULATION OF THE SINGLE DISCOUNT RATE

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

The 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 Federal Reserve) 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 7.75%; the municipal bond rate is 3.80%; and the resulting SDR is 7.75%.

The tables in this section provide background for the development of the SDR.

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

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

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

For purposes of calculating the single discount rate, we assumed the balance of the Reserve for Inflation Equity ($2.1 million) and the reserve for retiree account balances yet to be disbursed ($5.9 million) as of June 30, 2015 were paid out as a disbursement in year 1 of the projection.

There may be cases where schedules do not add or where they do not exactly balance to other related schedules due to rounding.

CALCULATION OF THE SINGLE DISCOUNT RATE

Please note the following regarding the projections used for purposes of determining the SDR.

- "Total Contributions" were projected based on the actuarial assumptions and methods used in the most recent actuarial valuation (for funding purposes) as of June 30, 2014. These assumptions and methods may or may not be consistent with assumptions and methods required by GASB Statement No. 67 for purposes of determining such items as Total Pension Liability, Net Pension Liability, etc.
- Projected "Service Cost" results are based on the entry age actuarial cost method as defined in GASB Statement No. 67. This may or may not be consistent with the actuarial cost method used to determine projected "Total Contributions".
- If there is a difference in actuarial cost methods between the method used to determine "Total Contributions" and the method used to determine "Service Cost", the impact of this difference is included in the projected "UAL Contributions" results.

SINGLE DISCOUNT RATE DEVELOPMENT PROJECTION OF CONTRIBUTIONS ENDING JUNE 30 FOR 2016 TO 2065

Fiscal Year Ending 6/30	Projected Payroll for Current Employees	Projected Contributions from Current Employees	Projected Service Cost and Expense Contributions	Projected UAL Contributions	Projected Total Contributions
2016	$ 18,290,757	$ 437,007	$ 2,630,745	$ 3,528,977	$ 6,596,729
2017	17,460,428	441,228	2,621,810	3,038,827	6,101,865
2018	16,471,421	445,930	2,599,358	2,782,446	5,827,734
2019	15,427,295	447,989	2,509,419	2,917,314	5,874,722
2020	14,724,091	446,057	2,329,590	3,163,497	5,939,144
2021	14,318,371	438,391	2,076,654	3,195,370	5,710,415
2022	13,911,492	426,457	1,884,049	3,427,098	5,737,604
2023	13,512,360	414,762	1,792,859	3,563,295	5,770,916
2024	12,966,741	398,680	1,678,288	3,701,512	5,778,480
2025	12,101,240	373,007	1,519,298	3,833,654	5,725,959
2026	11,103,408	343,371	1,382,625	3,925,000	5,650,996
2027	10,198,502	316,528	1,297,702	3,986,426	5,600,656
2028	9,438,607	294,040	1,210,341	4,080,694	5,585,075
2029	8,744,471	273,528	1,101,209	4,213,446	5,588,183
2030	7,918,139	249,053	908,400	4,412,365	5,569,818
2031	7,059,069	194,289	681,822	4,674,468	5,550,579
2032	6,295,697	142,907	512,940	4,901,118	5,556,965
2033	5,538,996	110,826	404,068	5,056,789	5,571,683
2034	4,753,109	81,698	303,414	5,201,681	5,586,793
2035	3,850,176	51,359	197,873	5,335,226	5,584,458
2036	2,988,988	33,855	133,050	5,431,194	5,598,099
2037	2,301,087	25,918	100,522	5,528,683	5,655,123
2038	1,703,967	18,936	73,092	5,648,163	5,740,191
2039	1,214,271	11,825	47,630	179,469	238,924
2040	838,660	6,120	27,672	128,457	162,249
2041	559,833	3,219	16,302	86,694	106,215
2042	374,025	1,464	9,225	59,201	69,890
2043	234,287	593	4,982	37,801	43,376
2044	122,714	139	2,182	20,293	22,614
2045	57,725	45	974	9,512	10,531
2046	27,059	8	427	4,430	4,865
2047	13,947	3	213	2,303	2,519
2048	5,439	0	82	904	986
2049	621	-	9	103	112
2050	-	-	-	-	-
2051	-	-	-	-	-
2052	-	-	-	-	-
2053	-	-	-	-	-
2054	-	-	-	-	-
2055	-	-	-	-	-
2056	-	-	-	-	-
2057	-	-	-	-	-
2058	-	-	-	-	-
2059	-	-	-	-	-
2060	-	-	-	-	-
2061	-	-	-	-	-
2062	-	-	-	-	-
2063	-	-	-	-	-
2064	-	-	-	-	-
2065	-	-	-	-	-

SINGLE DISCOUNT RATE DEVELOPMENT PROJECTION OF PLAN FIDUCIARY NET POSITION ENDING JUNE 30 FOR 2016 TO 2065

Fiscal Year Ending 6/30	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.750%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2016	$ 196,517,586	$ 6,596,729	$ 25,845,166	$ 274,361	$ 14,487,720	$ 191,482,507
2017	191,482,507	6,101,865	18,666,422	261,906	14,352,143	193,008,187
2018	193,008,187	5,827,734	19,914,788	247,071	14,413,051	193,087,113
2019	193,087,113	5,874,722	19,904,624	231,409	14,421,937	193,247,738
2020	193,247,738	5,939,144	17,748,763	220,861	14,519,217	195,736,474
2021	195,736,474	5,710,415	17,425,769	214,776	14,715,910	198,522,253
2022	198,522,253	5,737,604	17,944,363	208,672	14,913,353	201,020,176
2023	201,020,176	5,770,916	18,400,511	202,685	15,091,091	203,278,987
2024	203,278,987	5,778,480	19,680,236	194,501	15,218,083	204,400,814
2025	204,400,814	5,725,959	20,619,106	181,519	15,267,819	204,593,968
2026	204,593,968	5,650,996	21,364,618	166,551	15,252,158	203,965,953
2027	203,965,953	5,600,656	21,298,148	152,978	15,204,616	203,320,098
2028	203,320,098	5,585,075	21,203,183	141,579	15,158,014	202,718,426
2029	202,718,426	5,588,183	21,276,667	131,167	15,109,105	202,007,880
2030	202,007,880	5,569,818	21,785,126	118,772	15,034,475	200,708,275
2031	200,708,275	5,550,579	21,627,911	105,886	14,939,492	199,464,549
2032	199,464,549	5,556,965	21,617,523	94,435	14,844,177	198,153,733
2033	198,153,733	5,571,683	21,927,460	83,085	14,731,794	196,446,666
2034	196,446,666	5,586,793	22,313,658	71,297	14,585,833	194,234,337
2035	194,234,337	5,584,458	22,970,239	57,753	14,389,836	191,180,640
2036	191,180,640	5,598,099	22,605,950	44,835	14,168,038	188,295,992
2037	188,295,992	5,655,123	22,203,351	34,516	13,962,348	185,675,596
2038	185,675,596	5,740,191	21,626,117	25,559	13,784,793	183,548,905
2039	183,548,905	238,924	21,155,028	18,214	13,428,971	176,043,558
2040	176,043,558	162,249	20,604,500	12,580	12,865,540	168,454,268
2041	168,454,268	106,215	19,819,318	8,397	12,305,257	161,038,025
2042	161,038,025	69,890	19,133,178	5,610	11,755,314	153,724,441
2043	153,724,441	43,376	18,599,431	3,514	11,207,880	146,372,752
2044	146,372,752	22,614	17,964,042	1,841	10,661,560	139,091,043
2045	139,091,043	10,531	17,312,051	866	10,121,598	131,910,256
2046	131,910,256	4,865	16,662,854	406	9,589,577	124,841,438
2047	124,841,438	2,519	16,040,750	209	9,065,318	117,868,316
2048	117,868,316	986	15,427,701	82	8,548,160	110,989,679
2049	110,989,679	112	14,784,682	9	8,039,487	104,244,587
2050	104,244,587	-	14,150,973	-	7,540,837	97,634,450
2051	97,634,450	-	13,514,644	-	7,052,749	91,172,555
2052	91,172,555	-	12,873,910	-	6,576,317	84,874,963
2053	84,874,963	-	12,230,313	-	6,112,728	78,757,378
2054	78,757,378	-	11,585,633	-	5,663,130	72,834,875
2055	72,834,875	-	10,941,844	-	5,228,618	67,121,649
2056	67,121,649	-	10,301,276	-	4,810,201	61,630,574
2057	61,630,574	-	9,666,417	-	4,408,785	56,372,942
2058	56,372,942	-	9,039,718	-	4,025,150	51,358,374
2059	51,358,374	-	8,423,803	-	3,659,942	46,594,513
2060	46,594,513	-	7,821,243	-	3,313,657	42,086,926
2061	42,086,926	-	7,234,294	-	2,986,638	37,839,271
2062	37,839,271	-	6,664,885	-	2,679,098	33,853,484
2063	33,853,484	-	6,114,750	-	2,391,120	30,129,853
2064	30,129,853	-	5,585,202	-	2,122,675	26,667,327
2065	26,667,327	-	5,077,154	-	1,873,649	23,463,822

SINGLE DISCOUNT RATE DEVELOPMENT PROJECTION OF PLAN FIDUCIARY NET POSITION ENDING JUNE 30 FOR 2066 TO 2115 (CONCLUDED)

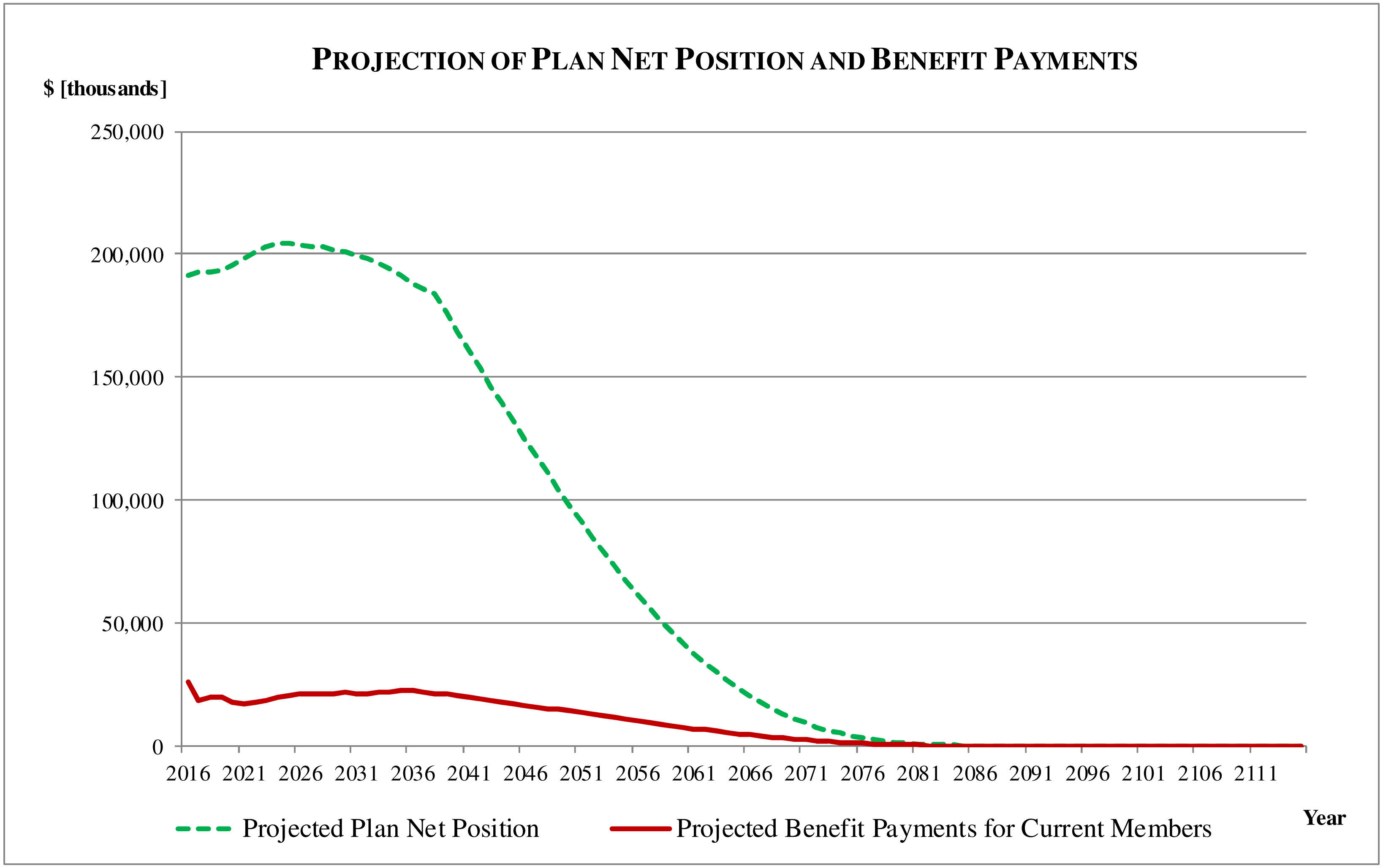
Fiscal Year Ending 6/30	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.750%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2066	$ 23,463,822	$ -	$ 4,591,513	$ -	$ 1,643,845	$ 20,516,154
2067	20,516,154	-	4,129,354	-	1,432,975	17,819,774
2068	17,819,774	-	3,691,448	-	1,240,658	15,368,985
2069	15,368,985	-	3,278,468	-	1,066,426	13,156,943
2070	13,156,943	-	2,891,220	-	909,719	11,175,442
2071	11,175,442	-	2,530,416	-	769,873	9,414,899
2072	9,414,899	-	2,196,672	-	646,122	7,864,349
2073	7,864,349	-	1,890,431	-	537,600	6,511,517
2074	6,511,517	-	1,612,019	-	443,342	5,342,841
2075	5,342,841	-	1,361,598	-	362,293	4,343,536
2076	4,343,536	-	1,138,784	-	293,320	3,498,072
2077	3,498,072	-	942,772	-	235,250	2,790,549
2078	2,790,549	-	772,473	-	186,893	2,204,969
2079	2,204,969	-	626,345	-	147,067	1,725,691
2080	1,725,691	-	502,534	-	114,631	1,337,789
2081	1,337,789	-	398,994	-	88,506	1,027,301
2082	1,027,301	-	313,503	-	67,694	781,493
2083	781,493	-	243,809	-	51,294	588,978
2084	588,978	-	187,698	-	38,508	439,787
2085	439,787	-	143,067	-	28,643	325,363
2086	325,363	-	108,007	-	21,108	238,464
2087	238,464	-	80,782	-	15,409	173,091
2088	173,091	-	59,845	-	11,139	124,385
2089	124,385	-	43,904	-	7,970	88,451
2090	88,451	-	31,895	-	5,642	62,199
2091	62,199	-	22,932	-	3,948	43,215
2092	43,215	-	16,303	-	2,729	29,641
2093	29,641	-	11,448	-	1,862	20,055
2094	20,055	-	7,933	-	1,253	13,375
2095	13,375	-	5,420	-	830	8,785
2096	8,785	-	3,646	-	542	5,682
2097	5,682	-	2,414	-	349	3,617
2098	3,617	-	1,572	-	221	2,265
2099	2,265	-	1,007	-	137	1,396
2100	1,396	-	634	-	84	846
2101	846	-	392	-	51	505
2102	505	-	240	-	30	295
2103	295	-	144	-	17	168
2104	168	-	84	-	10	93
2105	93	-	49	-	5	50
2106	50	-	27	-	3	25
2107	25	-	14	-	1	12
2108	12	-	8	-	1	5
2109	5	-	4	-	0	2
2110	2	-	1	-	0	0
2111	0	-	0	-	0	-
2112	-	-	-	-	-	-
2113	-	-	-	-	-	-
2114	-	-	-	-	-	-
2115	-	-	-	-	-	-

SINGLE DISCOUNT RATE DEVELOPMENT PRESENT VALUES OF PROJECTED BENEFITS ENDING JUNE 30 FOR 2016 TO 2065

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Projected Benefit Payments	Unfunded Portion of Projected 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 All 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)
2016	$ 196,517,586	$ 25,845,166	$ 25,845,166	$ -	$ 24,898,357	$ -	$ 24,898,357
2017	191,482,507	18,666,422	18,666,422	-	16,689,186	-	16,689,186
2018	193,008,187	19,914,788	19,914,788	-	16,524,658	-	16,524,658
2019	193,087,113	19,904,624	19,904,624	-	15,328,283	-	15,328,283
2020	193,247,738	17,748,763	17,748,763	-	12,684,996	-	12,684,996
2021	195,736,474	17,425,769	17,425,769	-	11,558,379	-	11,558,379
2022	198,522,253	17,944,363	17,944,363	-	11,046,272	-	11,046,272
2023	201,020,176	18,400,511	18,400,511	-	10,512,362	-	10,512,362
2024	203,278,987	19,680,236	19,680,236	-	10,434,783	-	10,434,783
2025	204,400,814	20,619,106	20,619,106	-	10,146,253	-	10,146,253
2026	204,593,968	21,364,618	21,364,618	-	9,756,941	-	9,756,941
2027	203,965,953	21,298,148	21,298,148	-	9,026,994	-	9,026,994
2028	203,320,098	21,203,183	21,203,183	-	8,340,365	-	8,340,365
2029	202,718,426	21,276,667	21,276,667	-	7,767,304	-	7,767,304
2030	202,007,880	21,785,126	21,785,126	-	7,380,904	-	7,380,904
2031	200,708,275	21,627,911	21,627,911	-	6,800,593	-	6,800,593
2032	199,464,549	21,617,523	21,617,523	-	6,308,423	-	6,308,423
2033	198,153,733	21,927,460	21,927,460	-	5,938,626	-	5,938,626
2034	196,446,666	22,313,658	22,313,658	-	5,608,557	-	5,608,557
2035	194,234,337	22,970,239	22,970,239	-	5,358,319	-	5,358,319
2036	191,180,640	22,605,950	22,605,950	-	4,894,052	-	4,894,052
2037	188,295,992	22,203,351	22,203,351	-	4,461,152	-	4,461,152
2038	185,675,596	21,626,117	21,626,117	-	4,032,643	-	4,032,643
2039	183,548,905	21,155,028	21,155,028	-	3,661,066	-	3,661,066
2040	176,043,558	20,604,500	20,604,500	-	3,309,320	-	3,309,320
2041	168,454,268	19,819,318	19,819,318	-	2,954,256	-	2,954,256
2042	161,038,025	19,133,178	19,133,178	-	2,646,849	-	2,646,849
2043	153,724,441	18,599,431	18,599,431	-	2,387,946	-	2,387,946
2044	146,372,752	17,964,042	17,964,042	-	2,140,482	-	2,140,482
2045	139,091,043	17,312,051	17,312,051	-	1,914,427	-	1,914,427
2046	131,910,256	16,662,854	16,662,854	-	1,710,103	-	1,710,103
2047	124,841,438	16,040,750	16,040,750	-	1,527,849	-	1,527,849
2048	117,868,316	15,427,701	15,427,701	-	1,363,765	-	1,363,765
2049	110,989,679	14,784,682	14,784,682	-	1,212,923	-	1,212,923
2050	104,244,587	14,150,973	14,150,973	-	1,077,433	-	1,077,433
2051	97,634,450	13,514,644	13,514,644	-	954,973	-	954,973
2052	91,172,555	12,873,910	12,873,910	-	844,267	-	844,267
2053	84,874,963	12,230,313	12,230,313	-	744,371	-	744,371
2054	78,757,378	11,585,633	11,585,633	-	654,417	-	654,417
2055	72,834,875	10,941,844	10,941,844	-	573,598	-	573,598
2056	67,121,649	10,301,276	10,301,276	-	501,177	-	501,177
2057	61,630,574	9,666,417	9,666,417	-	436,464	-	436,464
2058	56,372,942	9,039,718	9,039,718	-	378,809	-	378,809
2059	51,358,374	8,423,803	8,423,803	-	327,610	-	327,610
2060	46,594,513	7,821,243	7,821,243	-	282,297	-	282,297
2061	42,086,926	7,234,294	7,234,294	-	242,332	-	242,332
2062	37,839,271	6,664,885	6,664,885	-	207,200	-	207,200
2063	33,853,484	6,114,750	6,114,750	-	176,424	-	176,424
2064	30,129,853	5,585,202	5,585,202	-	149,555	-	149,555
2065	26,667,327	5,077,154	5,077,154	-	126,173	-	126,173

SINGLE DISCOUNT RATE DEVELOPMENT PRESENT VALUES OF PROJECTED BENEFITS ENDING JUNE 30 FOR 2066 TO 2115 (CONCLUDED)

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Projected Benefit Payments	Unfunded Portion of Projected 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 All 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)
2066	$ 23,463,822	$ 4,591,513	$ 4,591,513	$ -	$ 105,897	$ -	$ 105,897
2067	20,516,154	4,129,354	4,129,354	-	88,388	-	88,388
2068	17,819,774	3,691,448	3,691,448	-	73,331	-	73,331
2069	15,368,985	3,278,468	3,278,468	-	60,443	-	60,443
2070	13,156,943	2,891,220	2,891,220	-	49,470	-	49,470
2071	11,175,442	2,530,416	2,530,416	-	40,182	-	40,182
2072	9,414,899	2,196,672	2,196,672	-	32,373	-	32,373
2073	7,864,349	1,890,431	1,890,431	-	25,856	-	25,856
2074	6,511,517	1,612,019	1,612,019	-	20,463	-	20,463
2075	5,342,841	1,361,598	1,361,598	-	16,041	-	16,041
2076	4,343,536	1,138,784	1,138,784	-	12,451	-	12,451
2077	3,498,072	942,772	942,772	-	9,566	-	9,566
2078	2,790,549	772,473	772,473	-	7,275	-	7,275
2079	2,204,969	626,345	626,345	-	5,474	-	5,474
2080	1,725,691	502,534	502,534	-	4,076	-	4,076
2081	1,337,789	398,994	398,994	-	3,004	-	3,004
2082	1,027,301	313,503	313,503	-	2,190	-	2,190
2083	781,493	243,809	243,809	-	1,581	-	1,581
2084	588,978	187,698	187,698	-	1,129	-	1,129
2085	439,787	143,067	143,067	-	799	-	799
2086	325,363	108,007	108,007	-	560	-	560
2087	238,464	80,782	80,782	-	389	-	389
2088	173,091	59,845	59,845	-	267	-	267
2089	124,385	43,904	43,904	-	182	-	182
2090	88,451	31,895	31,895	-	123	-	123
2091	62,199	22,932	22,932	-	82	-	82
2092	43,215	16,303	16,303	-	54	-	54
2093	29,641	11,448	11,448	-	35	-	35
2094	20,055	7,933	7,933	-	23	-	23
2095	13,375	5,420	5,420	-	14	-	14
2096	8,785	3,646	3,646	-	9	-	9
2097	5,682	2,414	2,414	-	6	-	6
2098	3,617	1,572	1,572	-	3	-	3
2099	2,265	1,007	1,007	-	2	-	2
2100	1,396	634	634	-	1	-	1
2101	846	392	392	-	1	-	1
2102	505	240	240	-	0	-	0
2103	295	144	144	-	0	-	0
2104	168	84	84	-	0	-	0
2105	93	49	49	-	0	-	0
2106	50	27	27	-	0	-	0
2107	25	14	14	-	0	-	0
2108	12	8	8	-	0	-	0
2109	5	4	4	-	0	-	0
2110	2	1	1	-	0	-	0
2111	0	0	0	-	0	-	0
2112	-	-	-	-	-	-	-
2113	-	-	-	-	-	-	-
2114	-	-	-	-	-	-	-
2115	-	-	-	-	-	-	-
				Totals	$ 258,566,228	$ -	$ 258,566,228


PROJECTION OF PLAN NET POSITION AND BENEFIT PAYMENTS
$ [thousands]
250,000
200,000
150,000
100,000
50,000
0
2016 2021 2026 2031 2036 2041 2046 2051 2056 2061 2066 2071 2076 2081 2086 2091 2096 2101 2106 2111
Year
Projected Plan Net Position
Projected Benefit Payments for Current Members

SECTION H

GLOSSARY OF TERMS

GLOSSARY OF TERMS

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

GLOSSARY OF TERMS

Amortization Payment	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
Amortization Method	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be "open" (meaning, reset each year) or "closed" (the number of years remaining will decline each year.
Cost-of-Living Adjustments	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
Covered-Employee Payroll	The payroll of employees that are provided with pensions through the pension plan.
Deferred Retirement Option Program (DROP)	A program that permits a plan member to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The plan member continues to provide service to the employer and is paid for the service by the employer after the DROP entry date; however, the pensions that would have been paid to the plan member are credited to an individual member account within the defined benefit pension plan until the end of the DROP period. Other variations for DROP exist and will be more fully detailed in the plan provision section of the valuation report.
Deferred Inflows and Outflows	The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.
Discount Rate	For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically: 1. The benefit payments to be made while the pension plans' fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and 2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.

GLOSSARY OF TERMS

Entry Age Actuarial Cost Method (EAN)	The EAN is a cost method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit 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.
GASB	The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.
Fiduciary Net Position	The fiduciary net position is the market value of the assets of the trust dedicated to the defined benefit provisions.
Long-Term Expected Rate of Return	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.
Money-Weighted Rate of Return	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.
Multiple-Employer Defined Benefit Pension Plan	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
Municipal Bond Rate	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.
Net Pension Liability (NPL)	The NPL is the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit pension plan.
Non-Employer Contributing Entities	Non-employer contributing entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB accounting statements, plan members are not considered non-employer contributing entities.
Normal Cost	The portion of the actuarial present value allocated to a valuation year is called the normal cost. For purposes of application to the requirements of this Statement, the term normal cost is the equivalent of service cost.

GLOSSARY OF TERMS

Other Postemployment Benefits (OPEB) 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.

Real Rate of Return The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.

Service Cost The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.

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
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 GASB Statement Nos. 67 and 68, the valuation assets are equal to the market value of assets.