Gabriel Roeder Smith & Company
Consultants & Actuaries

THE GENERAL RETIREMENT SYSTEM OF THE CITY OF DETROIT

GASB STATEMENT NO. 67 PLAN REPORTING AND ACCOUNTING SCHEDULES OF COMPONENT I

JUNE 30, 2016

GRS
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December 2, 2016

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. 67 "Financial 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 I (also known as the Hybrid Plan). Since Component II is a separate plan (as defined by GASB Statement No. 67), it is detailed 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. 67. The calculation of the plan's liability for this report is not applicable for the purpose of funding for 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 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 certain adjustments that we made to the data is provided in this report. If, in your view, those adjustments are not reasonable, please let us know and do not rely on this report until you are satisfied that the adjustments are reasonable.

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 determined this rate to be reasonable based on a price inflation assumption of 2.25%, the Systems asset allocation and the purpose of the measurement.

The benefit provisions reflected in this valuation for the development of the end of year Total Pension Liability are those in effect 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. 67 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.

Respectfully submitted,

By David T Kausch
David T. Kausch, FSA, EA, FCA, MAAA
Senior Consultant and Chief Actuary

By Judith A. Kermans
Judith A. Kermans, EA, FCA, MAAA

By Kenneth G. Alberts
Kenneth G. Alberts
Consultant

DTK:bd

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SECTION A

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY AS OF JUNE 30, 2016

Actuarial Valuation Date	June 30, 2015
Pension Plan's Fiscal Year Ending Date (Measurement Date & Reporting Date)	June 30, 2016

Membership

Number of	Reported as of Valuation Date	Adjusted for Significant Activity through Measurement Date#
- Retirees and Beneficiaries	149	149
- Inactive, Nonretired Members	212	212
- Active Members	4,981	4,684
- Total	5,342	5,045
Covered Payroll	$ 199,135,119	$ 185,951,782

Net Pension Liability

Total Pension Liability	$ 49,198,806
Plan Fiduciary Net Position	36,253,555
Net Pension Liability	$ 12,945,251
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	73.69%
Net Pension Liability as a Percentage of Covered Payroll	6.50%

Development of the Single Discount Rate as of June 30, 2016

Single Discount Rate (SDR)	7.23%
Long-Term Expected Rate of 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

**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.*

 # Between the valuation date and the measurement date the Great Lakes Water Authority established its own pension plan and moved its employees to that plan. The Retirement System identified 297 members who refunded and left membership to go to the GLWA plan as a result of this activity. See page 2 for further details.

DISCUSSION

Changes to the Actuarial Assumptions

The Single Discount Rate (SDR) changed to 7.23% at the end of the year from 7.61% at the beginning of the year.

Timing of pay increases was changed to beginning of year. This change was related to a change in reported data. There was an administrative change in the splitting of the administrative expenses between Component I and Component II. Administrative expenses are now shared 50/50. This change was reflected in our modeling where appropriate. Other assumptions are the same as those used in the June 30, 2015 GASB 67 Valuation.

Changes to the Plan Provisions

There were no changes in benefit provisions during the year affecting the Total Pension Liability.

Funding

Employee contributions are initially set to 4.0% but can be increased if necessary to maintain funding levels at 100%. Employer contributions are initially set at 5.0%. Employer contributions are actuarially determined beginning in 2024 to be the amount necessary to fund the plan on an actuarial basis.

Post Retirement COLA

This plan has a post retirement COLA feature known as the Variable Pension Improvement Factor or VPIF of a 2% simple COLA. It can be granted beginning July 1, 2018 only if a five-year projection shows the plan funded status at 100% based upon a 6.75% future investment return. Beginning in fiscal 2024, employer contributions will be actuarially determined. It is reasonable to assume that there will be years in which a 2% simple COLA will be granted, however, it is unlikely to be granted every year. For purposes of the TPL, we have therefore assumed a 0.50% simple COLA beginning July 1, 2018 to model the potential average COLA over time. In the notes section we indicate the TPL based on 1) 0% VPIF and 2) 2% simple VPIF beginning July 1, 2018.

There were significant events between the valuation date and the measurement date. We understand the Great Lakes Water Authority (GLWA) has established its own pension plan and moved (or began to move) its employees from this plan to the GLWA plan. The Retirement System did not have specific information on GLWA employees. However, they were able to provide us information on members who refunded in FY 2016. We matched that information to the valuation date and identified 297 members in the DWSD division (of which GLWA was part). These members were removed from the database before determining the TPL that was rolled forward to 2016. DWSD refunds were also excluded from the roll forward.

Transfers of Assets from Component II

In the event that the rate of interest credited to the Annuity Savings Fund (ASF) of the Component II (Legacy) Plan is less than the rate earned by the Component II trust, a transfer (of the difference in rates applied to the Component II ASF balance) to the Component I trust may occur to fund transition liabilities. For purposes of this valuation, future transfers were assumed not to occur. We understand no transfers have occurred in the past.

Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67, "Financial Reporting for Pension Plans," replaces the requirements of GASB Statement No. 25, "Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans," and GASB Statement No. 50, "Pension Disclosures." GASB Statement No. 67 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability of employers and non-employer contributing entities for benefits provided through the pension plan.

The following discussion provides a summary of the information that is required to be disclosed under this new accounting standard. 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 your internal staff will be responsible for preparing that information to comply with this accounting standard.

Financial Statements

GASB Statement No. 67 requires defined benefit pension plans to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position.

The *statement of fiduciary net position* presents the following items as of the end of the pension plan's reporting period, such as:

- assets;
- deferred inflows and outflows of resources;
- liabilities; and
- fiduciary net position (assets, plus deferred outflows, minus liabilities, minus deferred inflows).

The *statement of changes in fiduciary net position* presents the following for the plan's reporting period:

- additions, such as contributions and investment income;
- deductions, such as benefit payments and expenses; and
- net increase or decrease in the fiduciary net position (the difference between additions and deductions).

Notes to Financial Statements

GASB Statement No. 67 also requires the notes of the plan's financial statements to include additional disclosure information. This disclosure information should include:

- 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;
- the composition of the pension plan's Board and the authority under which benefit terms may be amended;
- a description of the plan's funding policy, which includes member and employer contribution requirements;
- the pension plan's investment policies;
- a description of how fair value is determined;
- concentrations of investments greater than or equal to 5%;
- annual money-weighted rate of return on pension plan investments;
- the portion of the present value of benefits to be provided through the pension plan to current active and inactive plan members;
- the pension plan's fiduciary net position;
- the net pension liability;
- the pension plan's fiduciary net position as a percentage of the total pension liability;
- significant assumptions and methods used to calculate the total pension liability;
- inputs to the discount rates;
- certain information about mortality assumptions and the dates of experience studies; 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 does not have a DROP program).

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;
- comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy; and
- the annual money-weighted rate of return on pension plan investments for each year.

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

Measurement of the Net Pension Liability

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

Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. If the actuarial valuation is not calculated as of the plan's fiscal year end, the total pension liability is required to be rolled forward from the actuarial valuation date to the pension plan's fiscal year end.

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-year Bond Buyer Index); and the resulting Single Discount Rate is 7.23% as of June 30, 2016.

For purposes of calculating the SDR, the following simplifications were made to the projections:

1) Voluntary employee contributions were excluded.
2) The VPIF was assumed to be a 0.50% simple increase each year beginning in Fiscal Year 2019.
3) Mandatory employee contributions were assumed to be fixed at the current rate of 4%.
4) The VPIF reduction under Section 9.5 of the plan was assumed not to occur.
5) Employer contributions were determined in a manner to actuarially fund the liabilities beginning in 2024, in accordance with the plan.

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 (73.69% as of June 30, 2016). Unless otherwise indicated, with regard to any such measurements 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 contribution.

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.

Plan

The General Retirement System has two components. It is our understanding that Component I and Component II are separate plans and that the assets from one plan cannot be used to satisfy the liabilities of the other, even though assets may be pooled for investment purposes. Therefore this report only includes the liabilities and reported assets of Component I. The liabilities and reported assets of Component II are detailed in a separate report.

Data

When the member data was submitted for this valuation, there were no reported retirees or deferred members. Data for this plan was submitted from a different source than the data submitted for Component II. After reconciling the data between the two plans and meeting with System staff to get answers to data reconciliation questions, we were able to create a data set for retired and deferred members with estimated benefits.

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		
Total Receivables		N/A
Total Assets	$	50,002,493
Liabilities		
Payables		
Accounts Payable	$	13,748,938
Total Liabilities	$	13,748,938
Total Fund Balances	$	36,253,555

* *The detail on cash and deposits, and receivables was not provided.*

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

Additions		
Contributions		
Employer	$	9,048,831
Mandatory Employee		7,345,516
Voluntary Employee		5,216,480
Total Contributions	$	21,610,827
Investment Income		
Net Appreciation in Fair Value of Investments	$	-
Interest and Dividends		458,789
Less Investment Expense		(530,772)
Net Investment Income	$	(71,983)
Other	$	1,961
Total Additions	$	21,540,805
Deductions		
Benefit Payments, including Refunds of Mandatory Employee Contributions	$	1,031,059
Pension Plan Administrative Expense		3,094,201
Voluntary Contributions Benefit Payments and Refunds		1,258,889
Total Deductions	$	5,384,149
Net Increase in Net Position	$	16,156,656
Net Position Restricted for Pensions		
Total Fund Balances Beginning of Year	$	20,096,899
Total Fund Balances End of Year	$	36,253,555

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SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

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

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
Total Pension Liability		
Service Cost*	$ 23,519,186	$ 25,094,461
Interest on the Total Pension Liability (and Service Cost)	2,495,896	695,469
Benefit Changes	-	-
Difference between Expected and Actual Experience	(1,225,597)	-
Assumption Changes	2,111,447	(1,202,108)
Benefit Payments	(49,117)	-
Refunds	(2,240,831)	-
Net Change in Total Pension Liability	24,610,984	24,587,822
Total Pension Liability - Beginning	24,587,822	-
Total Pension Liability - Ending (a)	$ 49,198,806	$ 24,587,822
Plan Fiduciary Net Position		
Employer Contributions	$ 9,048,831	$ 8,811,369
Mandatory Employee Contributions	7,345,516	6,970,544
Pension Plan Net Investment Income	(71,983)	20,690
Benefit Payments	(49,117)	-
Refunds of Mandatory Contributions	(981,942)	-
Benefit Payments and Refunds based on Voluntary Contributions	(1,258,889)	(10,603)
Pension Plan Administrative Expense	(3,094,201)	(1,481,589)
Voluntary Employee Contributions	5,216,480	5,786,488
Other	1,961	-
Net Change in Plan Fiduciary Net Position	16,156,656	20,096,899
Plan Fiduciary Net Position - Beginning	20,096,899	-
Plan Fiduciary Net Position - Ending (b)	$ 36,253,555	$ 20,096,899
Net Pension Liability - Ending (a) - (b)	$ 12,945,251	$ 4,490,923
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	73.69 %	81.74 %
Covered-Employee Payroll	$ 199,135,119	$ 203,507,079
Net Pension Liability as a Percentage of Covered-Employee Payroll	6.50 %	2.21 %

Notes to Schedule:

N/A

* *Service cost includes net voluntary member contributions made during the year.*

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 the Net Pension Liability Multiyear

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
2015	$ 24,587,822	$ 20,096,899	$ 4,490,923	81.74%	$ 203,507,079	2.21%
2016	$ 49,198,806	$ 36,253,555	$ 12,945,251	73.69%	$ 199,135,119	6.50%

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

SCHEDULE OF EMPLOYER CONTRIBUTIONS MULTIYEAR

Last 10 Fiscal Years

FY Ending June 30,	Actuarially Determined Contribution#	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll*	Actual Contribution as a % of Covered Payroll
2015	N/A	$ 8,811,369	N/A	$ 203,507,079	4.33%
2016	N/A	$ 9,048,831	N/A	$ 199,135,119	4.54%

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

\# *Employer contribution amounts are set in the plan until Fiscal Year 2024.*

NOTES TO SCHEDULE OF CONTRIBUTIONS

Employers Contribution: 5% of Compensation commencing July 1, 2014 and ending June 30, 2023, to be split between the Pension Accumulation Fund (PAF) and the Rate Stabilization Reserve (RSR). For Plan years 2024 and later, contributions shall be determined by an Actuary using reasonable and appropriate assumptions approved by the Board and the Investment Committee. We understand that 100% of the employer contributions has gone to PAF and 0% to the RSR.

SCHEDULE OF INVESTMENT RETURNS

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

SECTION D

NOTES TO 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.

Single Discount Rate

The projection of contributions used to determine this Single Discount Rate assumed that a Single Discount Rate of 7.23% 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 will be made at 4.00% of compensation and that employer contributions will be made at 5.00% of compensation through June 30, 2023. Beyond 2023, the employer contributions will be actuarially determined, however, the Board does not have a funding policy at this time. For purposes of the GASB projections only, the employer contribution shown in this report is the rate which, when applied to the closed group payroll, is sufficient to fund the benefits. The rate as determined is 12.68% of the closed group payroll. The actual contributions to this plan will be on open group payroll under different assumptions and methods and are expected to be at a lower rate. The distortion caused by the required GASB projection should not be interpreted as a funding recommendation or requirement. Based on these assumptions, the pension plan's fiduciary net position was determined 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)	$55,607,794	$49,198,806	$43,956,480
Net Position Restricted for Pensions	36,253,555	36,253,555	36,253,555
Net Pension Liability (NPL)	$19,354,239	$12,945,251	$ 7,702,925

EXPECTED REAL RETURNS BY ASSET CLASS

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

Summary of Population Statistics

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	149
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	212
Active Plan Members	4,684
Total Plan Members	5,045

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

Additional Note

Liabilities and reported assets for Component II are not included in this report and will be detailed in a separate report.

The Total Pension Liability in this report is based on an average assumed VPIF of 0.5% simple increase per year beginning July 1, 2018.

The Total Pension Liability is sensitive to the assumption regarding the VPIF. The sensitivity may increase as the plan matures. To illustrate the sensitivity, we are showing the Total Pension Liability below based on two alternate VPIF assumptions: 1) 0% and 2) 2% beginning July 1, 2018 (the maximum amount payable).

VPIF Assumption

	Minimum (0%)	Current Assumption (0.5% beginning 7/1/2018)	Maximum (2% beginning 7/1/2018)
Total Pension Liability (TPL)	$47,668,471	$49,198,806	$53,791,617
Net Position Restricted for Pensions	36,253,555	36,253,555	36,253,555
Net Pension Liability (NPL)	$11,414,916	$12,945,251	$17,538,062

SECTION E

SUMMARY OF BENEFITS

CITY OF DETROIT GENERAL RETIREMENT SYSTEM
SUMMARY OF COMPONENT I BENEFIT PROVISIONS EVALUATED

Plan Year

The Plan Year is the 12-month period commencing on July 1, and ending on June 30. The first plan year starts July 1, 2014.

Full Time Employees

Full Time Employees are individuals who are required to work 600 hours per year. Part time transit operators working 25 hours per week are not full time employees. Special Service Operators are required to work 1,440 hours per year. However, once a Special Service Operator meets the requirement in any year, he or she is deemed to meet it in all future years.

Plan Membership

The membership of the Retirement System shall consist of all persons who are full time employees of the City of Detroit except persons who are members of the Police and Fire Retirement System of the City of Detroit and those individuals who are active members in any other public employee pension plan adopted by either the State of Michigan (other than the Michigan National Guard), or any other political subdivision of the State of Michigan.

Service Credit

Credited Service: A member is credited with one month of Credited Service for each calendar month in which the individual performs 140 hours or more of service for the employer as an employee. Credited Service is recorded from the later of July 1, 2014, or the date of hire whichever is later.

Prior Service: Refers to service credit awarded to a member prior to July 1, 2014 under the terms of the Retirement System in effect on June 30, 2014.

Vesting Service: A member is credited with a year of vesting service for each Plan Year commencing on or after July 1, 2014 during which the member performs 1,000 or more hours of work for the employer. Prior Service, as defined above, is also Vesting Service.

Military Service: A member who enters the military while employed by the City and returns to employment with the City following military service receives service credit in the Retirement System for the military service time as though there had been no interruption of employment. In order to receive such service credit, the individual must pay contributions to the Retirement System for the military service time upon return to employment.

CITY OF DETROIT GENERAL RETIREMENT SYSTEM
SUMMARY OF COMPONENT I BENEFIT PROVISIONS EVALUATED

Average Final Compensation

Compensation: Compensation is base salary or wages, excluding bonuses, overtime pay, payment of unused accrued sick leave, longevity pay, payment for unused accrued vacation, the cost or value of fringe benefits, termination or severance pay, reimbursement of expenses or other extra payment of any kind. Compensation includes deferred compensation and "picked up" employee contributions to the Retirement System. Compensation is limited by IRC Section 401(a)(17).

Average Final Compensation: The average of the compensation received during the 10 consecutive years of Credited Service (including Prior Service) immediately preceding the date of the members last termination with the employer. If the member has less than ten years of Credited Service (including Prior Service), the Average Final Compensation is the average of the compensation received during all years of Credited Service.

Normal Retirement

Normal Retirement Age: The Normal Retirement Age is 62. For individuals who were active employees and who had 10 or more years of Vesting Service as of June 30, 2014 the normal retirement age is reduced as follows.

Age as of July 1, 2014	Normal Retirement Age
52 years or younger	62 Years
53 years	61 years and 9 months
54 years	61 years and 6 months
55 years	61 years and 3 months
56 years	61 years
57 years	60 years and 9 months
58 years	60 years and 6 months
59 years	60 years and 3 months
60 years	60 years
61 years	60 years

Normal Retirement Date: The later of 10 years of Vesting Service and attainment of Normal Retirement Age.

Normal Retirement Amount: The retirement allowance payable to a member who retires on or after the normal retirement date is 1.5% times average final compensation times Credited Service (after June 30, 2014) measured to the nearest month.

Early Retirement

Eligibility: Age 55 with 30 or more years of credited service plus prior service.

Early Retirement Amount: The early retirement amount is the actuarial equivalent of the deferred retirement allowance that would be payable to the member on the Normal Retirement Date, assuming that the member terminated employment on the early retirement date.

CITY OF DETROIT GENERAL RETIREMENT SYSTEM
SUMMARY OF COMPONENT I BENEFIT PROVISIONS EVALUATED

Deferred Retirement (Vested Benefit)

Eligibility: 10 years of Vesting Service.

Benefit Commencement: *A*ge 62.

Annual Amount: Same as Normal Retirement but based on Average Final Compensation and Credited Service at the time of termination.

Disability Retirement

Eligibility: The individual must be eligible for long term disability benefits under a policy or plan of insurance or self-insurance maintained by the employer.

Amount: The Normal Retirement Allowance payable at Age 62. For members disabled in the line of duty, credited service accrues while a member is entitled to receive long term disability under the employer's plan or policy.

Accidental (Line of Duty) Death Before Retirement

Eligibility: Death resulting directly from performance of duty in the service of the employer or as a result of illness contracted or injuries received while in the service of the employer.

Amount: The surviving spouse is eligible to receive a monthly amount equal to the member's Retirement Allowance at time of death (minimum 10% of Average Final Compensation), unreduced for early payment, and payable until the surviving Spouse's death. Amounts payable from Worker's Comp or similar programs are offset against the amount payable to the spouse.

Ordinary (Other than Line of Duty) Death Before Retirement

Eligibility: 10 or more years of credited service (or death during disability, but prior to commencement of the retirement allowance). The individual must be employed by the employer at time of death.

Amount: The Surviving Spouse shall receive a retirement allowance computed as though the member had retired the day before death, notwithstanding that the death was prior to the Normal retirement Date, elected the Joint and 100% Option in favor of the spouse, and then died. Amounts payable from Worker's Comp or similar programs are offset against the amount payable to the spouse.

CITY OF DETROIT GENERAL RETIREMENT SYSTEM
SUMMARY OF COMPONENT I BENEFIT PROVISIONS EVALUATED

Refund of Mandatory Contributions

A member who ceases to be an employee for reasons other than retirement, death, or disability, may elect to receive a refund of mandatory Accumulated Contributions (without interest) in lieu of any other Component I benefit payable. In the case of a member who dies while employed by the City, or following termination of employment with the City, if no Surviving Spouse benefit is payable, the accumulated mandatory Employee Contributions (without interest) are paid to the member's estate.

Variable Pension Improvement Factor (VPIF Escalator)

Eligibility: Attainment of at least Age 62, and in receipt of a retirement allowance for at least 12 months as of the first day of the Plan Year.

Amount: Beginning July 1, 2018 and effective the first date of each Plan year thereafter, the Board may determine that a retiree's Component I Retirement Allowance shall be increased by 2% of the original retirement allowance. The VPIF Escalator may not be awarded in the event that the funding level of Component I of the Retirement System projected over a 5-year period falls below 100%. The VPIF escalator is not compounded.

Contributions

Members: 4% of Compensation. Member contributions are "picked up" in accordance with IRC 414(h).

Employers: 5% of Compensation commencing July 1, 2014 and ending June 30, 2023, to be split between the Pension Accumulation Fund and the Rate Stabilization reserve. For Plan years beginning July 1, 2023 and later, contributions shall be determined by an Actuary using reasonable and appropriate assumptions approved by the Board and the Investment Committee.

Voluntary Employee Contributions

Eligibility: Non-union member, or union member with Coverage by a collective bargaining agreement that permits the member to make Voluntary Employee Contributions to Component I.

Amount: 3%, 5%, or 7% of compensation at the election of the member. All voluntary employee contributions are made on an after tax basis.

Earnings Crediting: Each Plan Year, accounts are credited with earnings at a rate equal to the net investment rate of return of Retirement System Assets for the second Plan Year immediately preceding the Plan Year in which earnings are to be credited. The earnings rate may not be less than 0% and may not exceed 5.25%.

Distribution: Upon termination of employment, accounts may be distributed in a lump sum, in equal monthly installments for a period not exceeding three years, or, at the option of the member, in the form of an actuarially equivalent life annuity payable in the same form as and added to the member's Retirement Allowance. The determination of actuarial equivalent for this purpose is based upon market rates of investment return and other market related assumptions. In case of a member who dies before receiving a distribution of his or her voluntary account, the value of the account is payable to the nominated beneficiary, or to the estate.

CITY OF DETROIT GENERAL RETIREMENT SYSTEM
SUMMARY OF COMPONENT I BENEFIT PROVISIONS EVALUATED

Forms of Payment

Normal Form of Payment: The normal form of payment is a straight life allowance with no death benefit, and, in particular, no residual refund of mandatory employee contributions. Until the date the first Retirement Allowance payment check is issued, any Member may elect to receive payment either in the Normal Form or in the Actuarial Equivalent of the Normal Form computed as of the effective date of retirement and payable in one of the forms described below.

Option One. Modified Cash Refund Annuity: If a Retiree who elected a Modified Cash Refund Annuity dies before payment has been received in an aggregate amount equal to, but not exceeding the Retiree's Accumulated Mandatory Employee Contributions at the time of retirement, the difference between said Accumulated Mandatory Employee Contributions and the aggregate amount of annuity payments already received, shall be paid in a single lump sum to a Beneficiary nominated by written designation duly executed by the Member and filed with the Board. If there are no such designated Beneficiaries surviving said Retiree, any such difference shall be paid to the Retiree's estate.

Option Two. Joint and One Hundred Percent Survivor Allowance: Upon the death of a Retiree who elected a Joint and One Hundred Percent Survivor Allowance, one hundred percent of the reduced Retirement Allowance shall be paid to and continued throughout the life of the Beneficiary nominated by written designation duly executed and filed with the Board prior to the date the first payment of the Retirement Allowance becomes due.

Option "A". Joint and Seventy-Five Percent Survivor Allowance: Upon the death of a Retiree who elected a Joint and Seventy-Five Percent Survivor Allowance, seventy-five percent of the reduced Retirement Allowance shall be continued throughout the life of and paid to the Beneficiary nominated by written designation duly executed by the Member and filed with the Board prior to the date the first payment of the Retirement Allowance becomes due.

Option Three. Joint and Fifty Percent Survivor Allowance: Upon the death of a Retiree who elected a Joint and Fifty Percent Survivor Allowance, fifty percent of the reduced Retirement Allowance shall be continued throughout the life of and paid to the Beneficiary nominated by written designation duly executed by the Member and filed with the Board prior to the date the first payment of the Retirement Allowance becomes due.

Option "B". Joint and Twenty-Five Percent Survivor Allowance: Upon the death of a Retiree who elected a Joint and Twenty-Five Percent Survivor Allowance, twenty-five percent of the reduced Retirement Allowance shall be paid throughout the life of the Beneficiary nominated by written designation duly executed and filed with the Board prior to the date the first payment of the Retirement Allowance becomes due.

Joint and Survivor Optional Forms of Payment: The Joint and Survivor Optional Forms of Payment provided under the Retirement System shall be made available in either the standard form or the pop-up form, as follows:

> ***Standard Form:*** Under the Standard Form, the reduced Retirement Allowance shall be paid throughout the lifetime of the Retiree.

CITY OF DETROIT GENERAL RETIREMENT SYSTEM
SUMMARY OF COMPONENT I BENEFIT PROVISIONS EVALUATED

Pop-up Form: Under the Pop-up Form, the reduced Retirement Allowance shall be paid throughout the lifetime of the Retiree and the designated Beneficiary. In the event of the death of the designated Beneficiary during the lifetime of the Retiree, the amount of the Retirement Allowance shall be changed to the amount that would have been payable had the Retiree elected the Straight Life Retirement Allowance Form of Payment.

Coordination of Benefits: According to such rules and regulations as the Board shall adopt, until the first payment of a Retirement Allowance becomes due, but not thereafter, a Member under age sixty-five may elect to have the Member's Straight Life Retirement Allowance provided for under Component I equated on an Actuarial Equivalent basis to provide an increased Retirement Allowance payable to age sixty-two or age sixty-five, and to provide a decreased Retirement Allowance thereafter. The increased Retirement Allowance payable to such age shall approximate the total of the decreased Retirement Allowance payable thereafter and the estimated social security benefit. If a Member elects to receive increased and then decreased Retirement Allowance payments provided for in this paragraph, he or she may also elect to have such payments reduced by electing one of the optional forms of payment described above.

Disposition of Residue: If under a Joint and One Hundred Percent Survivor allowance, a Joint and Seventy-Five Percent Survivor allowance, a Joint and Fifty Percent Survivor allowance, or a Joint and Twenty-Five Percent Survivor allowance as provided above, both the Retiree and the Beneficiary die before they have received, in Retirement Allowance payments, an aggregate amount equal to the Retiree's Accumulated Mandatory Employee Contributions at the time of retirement, the difference between the said Accumulated Mandatory Employee Contributions and the aggregate amount of Retirement Allowances paid to the Retiree and Beneficiary, shall be paid in a single lump sum to such person or persons nominated by written designation of the Retiree duly executed and filed with the Board. If there are no such person or persons surviving the Retiree and the Beneficiary, any such difference shall be paid to the estate of the second to die of the Retiree or Beneficiary.

CITY OF DETROIT GENERAL RETIREMENT SYSTEM
SUMMARY OF COMPONENT I BENEFIT PROVISIONS EVALUATED

Rehire Before or After Retirement

A non-vested former member who is reemployed (except as a part time transit operator) within 6 years of termination may repay mandatory contributions. In such case, forfeited Credited Service and Vesting service are restored. If the member is reemployed more than 6 years following separation, mandatory contributions cannot be repaid. Vesting Service and Credited Service start over beginning with the date of reemployment.

A former member who is vested but has not yet begun to receive a Retirement Allowance and who is rehired **prior to being separated for six years** shall have the benefit pertaining to total Credited Service earned on and after July 1, 2014 calculated in accordance with the terms of Component I of the Retirement System in effect at the time of the last separation from service. If the former member has previously withdrawn mandatory accumulated contributions, and such withdrawn contributions are not repaid within two years of the rehire date, only the Credited Service earned on and after the rehire date shall be taken into consideration in determining the retirement allowance.

A former member who is vested but has not begun to receive a Retirement Allowance and **who is rehired after being separated for more than six years** shall be entitled to two separate and distinct pension benefits under Component I, each to be calculated in accordance with the provisions of Component I of the Retirement System in effect at the time of each separation from service. If the former member has previously withdrawn mandatory accumulated contributions, and such withdrawn contributions are not repaid within two years of the rehire date, only the Credited Service earned on and after the rehire date shall be taken into consideration in determining the retirement allowance.

Retirement benefits for a Retiree who returns to active full time employment with an Employer shall be subject to the following provisions:

- A Retiree who returns to work will have the Retirement Allowance suspended upon re-employment. The variable pension improvement factor (escalator) shall not be added to the amount of the original Retirement Allowance during the Retiree's re-employment period.
- A Retiree who returns to work will be entitled to receive a second Retirement Allowance in accordance with the provisions of the Retirement System in effect during the re-employment period.
- A Retiree's Average Final Compensation for purposes of determining the second Retirement Allowance will be based upon the Compensation earned by the Retiree after the return to work.
- An individual who retires for a second time will not be allowed to change the payment option selected with respect to the original Retirement Allowance. However, the individual may select a separate payment option with respect to the second Retirement Allowance.
- The Coordination of Benefits (Equated Social Security) option will not be available with respect to payment of the second Retirement Allowance.

SECTION F

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

SUMMARY OF ASSUMPTIONS AND METHODS USED FOR GASB VALUATION

All demographic assumptions are estimates of future experience except as noted. The rationale for the assumptions is based on the 2002-2007 experience study of the Component II plan unless noted otherwise.

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 is a prescribed assumption set by another party. We determined it to be reasonable when using 2.25% assumed price inflation.

Pay increase assumptions for individual active members are shown on page 24. Part of the assumption for each age is for a merit and/or seniority increase, and the other recognizes wage inflation (as of June 30, 2014 assumed to be 2.00% for five years, 2.50% for the next five years after that and 3.00% thereafter). The rationale for this assumption is that it is consistent with expectations by the employer used during the plan design.

Price inflation is not directly used in the valuation. Given the other assumptions, a price inflation in the range of 1.75% - 2.75% is implied.

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). For disabled members, the same tables are used. The rationale for the mortality assumption is provided in the 2008-2013 Mortality Experience Study issued February 4, 2015.

The probabilities of retirement for members eligible to retire are shown on pages 25 and 26. The rationale is based on the 2002-2007 Experience Study modified as necessary to account for the difference in eligibility of the Component I plan.

The probabilities of separation from service (including *death-in-service* and *disability*) are shown for sample ages on page 28. The rationale is based on the 2002-2007 Experience Study for the Component II plan.

SUMMARY OF ASSUMPTIONS AND METHODS USED FOR GASB VALUATION

Funding Methods

The entry age actuarial cost method was used in determining age & service pension liabilities and normal cost, vesting liabilities and normal cost, and casualty pension liabilities and normal cost. Under this method, each individual's normal cost is determined as a level percent of pay from plan entry to retirement. Plan entry is the later of date of hire or plan effective date.

Unfunded Actuarial Accrued Liabilities Actual employer contributions through June 30, 2023 are set at 5.0% of pay. The amortization period and method after 2023 has not yet been established by the Board. For the purposes of the projection of employer contributions, employer contributions after June 30, 2023 were set at 12.68% of compensation for purposes of illustrating that actuarially determined employer contributions will not result in a crossover date for the GASB No. 67 required projection. This is not a funding recommendation. Recommendations on employer and member funding requirements will be included in actuarial funding reports.

Present assets are set equal to the Market Value.

The data about persons now covered and about present assets were furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the Actuary.

SAMPLE SALARY ADJUSTMENT RATES

Sample Ages	Salary Increase Assumptions For an Individual Member: Merit & Seniority	Wage* (Economic)	Increase Next Year
20	4.9%	3.0%	7.9%
25	4.9%	3.0%	7.9%
30	4.1%	3.0%	7.1%
35	3.0%	3.0%	6.0%
40	2.3%	3.0%	5.3%
45	1.8%	3.0%	4.8%
50	1.3%	3.0%	4.3%
55	0.9%	3.0%	3.9%
60	0.5%	3.0%	3.5%
Ref	81		

* *Select and ultimate wage inflation rates as of June 30, 2014 are assumed to be 2.00% for five years, 2.50% for the next five years after that and 3.00% thereafter.*

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 2014	Future Life Expectancy (years): Men	Women
45	38.17	41.55
50	33.23	36.51
55	28.49	31.63
60	23.98	26.89
65	19.71	22.33
70	15.73	18.02
75	12.11	14.08
80	8.96	10.60

PROBABILITIES OF AGE/SERVICE RETIREMENT FOR MEMBERS WITH MORE THAN 20 YEARS OF ELIGIBILITY SERVICE AND ELIGIBLE TO RETIRE IN COMPONENT II BEFORE AGE 60 ON JUNE 30, 2014

Retirement	Percent of Eligible Active Members Retiring Within Next Year with Unreduced Benefits		
Ages	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

Members eligible to retire under Component II as described above are assumed to defer any Component I vested benefits until normal retirement age.

PROBABILITIES OF AGE/SERVICE RETIREMENT FOR MEMBERS WITH LESS THAN 20 YEARS OF ELIGIBILITY SERVICE OR NOT ELIGIBLE TO RETIRE IN COMPONENT II BEFORE AGE 60 ON JUNE 30, 2014

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year with Unreduced Benefits	
	EMS and D.O.T.	Others
62	40%	30%
63	40%	30%
64	40%	30%
65	40%	30%
66	40%	30%
67	40%	30%
68	40%	30%
69	40%	30%
70	100%	30%
71		30%
72		30%
73		30%
74		30%
75		30%
76		30%
77		30%
78		30%
79		30%
80		100%
Ref	851	1292

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

SAMPLE RATES OF SEPARATION FROM ACTIVE EMPLOYMENT BEFORE RETIREMENT

Sample Ages	Years of Service	% of Active Members Separating Within Next Year			
		Withdrawal			
				Others	
		EMS	D.O.T.	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	143	584	188
		1068	212	212 x 0.95	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

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.
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.
Service Credit Accruals	Service accruals for calculating benefits begin as of June 30, 2014 for Component I liabilities. However, service in Component II may be used to satisfy benefit eligibility requirement in Component I.
Administrative Expenses	3.0% of payroll. 50% of administrative expenses were allocated to Component I and 50% to Component II based on actual administrative expenses paid.
Sick Leave	None.
Pay Increase Timing	Beginning of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ending on the valuation date.
Disability Benefits	Duty Disability benefits were increased by 3.5% to account for the Death While Disabled provision. The 3.5% increase was determined by examining the effect of the Death While Disabled provision on several hypothetical test cases.
Actuarial Equivalent	No adjustments have been made for actuarial equivalent benefits. The Board has not adopted a definition of actuarial equivalent.
IRC Section 415 Limit	No adjustments have been made for 415 limits. The limit is assumed to grow with wage inflation.
IRC Section 401(a)(17) Limit	All of the member salary provided falls below the 401(a)(17) limit. The limit is assumed to grow with wage inflation.
IRC Section 401(h) Limit	We did not test for the IRC Section 401(h) limit on employer contributions for medical benefits. No such employer contributions are anticipated in this valuation.
Data adjustments	Benefits for newly identified retired and deferred members were estimated based on previously reported active member data.

SECTION G

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 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% net of investment expenses; 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 benefits). For purposes of determining the discount rate as of June 30, 2016, the employer contributions for the 10-year period ending June 30, 2023 are set at 5.00% of payroll. Subsequent employer contributions were set at 12.68% of payroll including contributions for expenses for the purpose of these projections. The actual employer rate will be determined by future funding valuations and is expected to be lower when based on an open group payroll. The estimated employer rate exceeds the estimate from the 2015 GASB 67 report. The primary factor increasing this estimate was the administrative change related to splitting administration expenses 50/50 between Component I and Component II. Member contributions were set at 4.00% for the entire period. The voluntary member contributions were excluded for the projections (and assets). The VPIF was assumed to be 0.50% simple each year beginning in fiscal year 2019. The VPIF reduction under section 9.5 of the plan was assumed not to occur. Note that contributions shown in this report are strictly for the purpose of projecting for a GASB crossover date. Nothing in this report should be construed as a recommendation for plan funding requirements. For purposes of these projections, voluntary employee contributions are excluded from the plan fiduciary net position and total pension liability.

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 determining the discount rate as of June 30, 2016, the benefit payments reflect the plan provisions in force as of June 30, 2016.

SINGLE DISCOUNT RATE DEVELOPMENT
PROJECTION OF CONTRIBUTIONS END OF YEAR
(EXCLUDING VOLUNTARY EMPLOYEE CONTRIBUTIONS)

Fiscal Year Ending June 30,	Payroll for Current Employees	Projected Contributions from Current Employees	Projected Employer Service Cost Contribution	Employer Administrative Expense Contributions	Projected Employer UAL Contributions	Projected Total Contributions
2017	$ 165,547,264	$ 6,621,891	$ 9,226,401	$ 2,483,209	$ (3,432,247)	$ 14,899,254
2018	152,082,836	6,083,313	8,361,361	2,281,243	(3,038,462)	13,687,455
2019	140,159,074	5,606,363	7,598,660	2,102,386	(2,693,092)	12,614,317
2020	129,862,845	5,194,514	6,930,838	1,947,943	(2,385,638)	11,687,656
2021	120,254,762	4,810,190	6,302,880	1,803,821	(2,093,963)	10,822,929
2022	111,490,115	4,459,605	5,722,688	1,672,352	(1,820,534)	10,034,110
2023	103,569,555	4,142,782	5,201,386	1,553,543	(1,576,451)	9,321,260
2024	96,316,414	3,852,657	4,740,991	1,444,746	6,028,034	16,066,427
2025	89,815,519	3,592,621	4,333,914	1,347,233	5,708,253	14,982,021
2026	83,556,140	3,342,246	3,942,331	1,253,342	5,399,982	13,937,901
2027	77,485,596	3,099,424	3,564,953	1,162,284	5,098,620	12,925,281
2028	71,633,392	2,865,336	3,206,700	1,074,501	4,802,545	11,949,082
2029	66,099,036	2,643,961	2,874,125	991,486	4,516,330	11,025,902
2030	60,736,352	2,429,454	2,561,265	911,045	4,229,595	10,131,359
2031	55,480,930	2,219,237	2,262,946	832,214	3,940,311	9,254,709
2032	50,366,892	2,014,676	1,983,436	755,503	3,648,027	8,401,642
2033	45,450,805	1,818,032	1,721,591	681,762	3,360,210	7,581,595
2034	40,925,448	1,637,018	1,490,750	613,882	3,085,076	6,826,726
2035	36,795,309	1,471,812	1,287,069	551,930	2,826,971	6,137,782
2036	32,972,827	1,318,913	1,106,465	494,592	2,580,189	5,500,158
2037	29,395,070	1,175,803	943,907	440,926	2,342,721	4,903,357
2038	26,083,360	1,043,334	800,519	391,250	2,115,831	4,350,935
2039	23,075,938	923,038	674,498	346,139	1,905,595	3,849,270
2040	20,364,172	814,567	567,603	305,463	1,709,290	3,396,923
2041	17,928,151	717,126	475,217	268,922	1,529,309	2,990,574
2042	15,728,406	629,136	395,872	235,926	1,362,702	2,623,637
2043	13,732,183	549,287	328,388	205,983	1,206,991	2,290,649
2044	11,882,349	475,294	269,610	178,235	1,058,941	1,982,081
2045	10,170,948	406,838	218,329	152,564	918,873	1,696,604
2046	8,651,120	346,045	175,986	129,767	791,285	1,443,083
2047	7,324,201	292,968	140,874	109,863	678,036	1,221,741
2048	6,159,626	246,385	112,289	92,394	576,412	1,027,480
2049	5,132,389	205,296	88,837	76,986	485,009	856,128
2050	4,219,777	168,791	69,245	63,297	402,563	703,896
2051	3,412,211	136,488	53,356	51,183	328,159	569,187
2052	2,710,105	108,404	40,353	40,652	262,661	452,069
2053	2,111,166	84,447	29,961	31,667	206,087	352,161
2054	1,609,418	64,377	21,789	24,141	158,158	268,465
2055	1,208,377	48,335	15,754	18,126	119,353	201,568
2056	895,259	35,810	11,201	13,429	88,897	149,337
2057	646,946	25,878	7,925	9,704	64,410	107,916
2058	456,408	18,256	5,358	6,846	45,673	76,133
2059	318,281	12,731	3,824	4,774	31,763	53,092
2060	220,371	8,815	2,545	3,306	22,094	36,760
2061	152,127	6,085	1,638	2,282	15,371	25,376
2062	104,719	4,189	1,219	1,571	10,490	17,468
2063	72,336	2,893	751	1,085	7,337	12,066
2064	50,046	2,002	448	751	5,147	8,348
2065	34,505	1,380	386	518	3,472	5,756
2066	23,655	946	189	355	2,456	3,946

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

SINGLE DISCOUNT RATE DEVELOPMENT
PROJECTION OF CONTRIBUTIONS END OF YEAR (CONCLUDED)
(EXCLUDING VOLUNTARY EMPLOYEE CONTRIBUTIONS)

Fiscal Year Ending June 30,	Payroll for Current Employees	Projected Contributions from Current Employees	Projected Employer Service Cost Contribution	Employer Administrative Expense Contributions	Projected Employer UAL Contributions	Projected Total Contributions
2067	$ 16,151	$ 646	$ 58	$ 242	$ 1,748	$ 2,694
2068	10,874	435	44	163	1,172	1,814
2069	7,244	290	43	109	766	1,208
2070	4,695	188	21	70	504	783
2071	2,959	118	24	44	307	494
2072	1,820	73	(33)	27	237	304
2073	1,099	44	(32)	16	155	183
2074	620	25	(25)	9	94	103
2075	268	11	(11)	4	41	45
2076	83	3	(3)	1	13	14
2077	20	1	(1)	-	3	3
2078	-	-	-	-	-	-
2079	-	-	-	-	-	-
2080	-	-	-	-	-	-
2081	-	-	-	-	-	-
2082	-	-	-	-	-	-
2083	-	-	-	-	-	-
2084	-	-	-	-	-	-
2085	-	-	-	-	-	-
2086	-	-	-	-	-	-
2087	-	-	-	-	-	-
2088	-	-	-	-	-	-
2089	-	-	-	-	-	-
2090	-	-	-	-	-	-
2091	-	-	-	-	-	-
2092	-	-	-	-	-	-
2093	-	-	-	-	-	-
2094	-	-	-	-	-	-
2095	-	-	-	-	-	-
2096	-	-	-	-	-	-
2097	-	-	-	-	-	-
2098	-	-	-	-	-	-
2099	-	-	-	-	-	-
2100	-	-	-	-	-	-
2101	-	-	-	-	-	-
2102	-	-	-	-	-	-
2103	-	-	-	-	-	-
2104	-	-	-	-	-	-
2105	-	-	-	-	-	-
2106	-	-	-	-	-	-
2107	-	-	-	-	-	-
2108	-	-	-	-	-	-
2109	-	-	-	-	-	-
2110	-	-	-	-	-	-
2111	-	-	-	-	-	-
2112	-	-	-	-	-	-
2113	-	-	-	-	-	-
2114	-	-	-	-	-	-
2115	-	-	-	-	-	-
2116	-	-	-	-	-	-

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

SINGLE DISCOUNT RATE DEVELOPMENT
PROJECTION OF PLAN FIDUCIARY NET POSITION END OF YEAR (EXCLUDING VOLUNTARY EMPLOYEE CONTRIBUTIONS)

Fiscal Year Ending June 30,	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.23%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2017	$ 26,018,301	$ 14,899,254	$ 627,036	$ 2,483,209	$ 2,299,859	$ 40,107,168
2018	40,107,168	13,687,455	912,348	2,281,243	3,272,482	53,873,515
2019	53,873,515	12,614,317	1,226,594	2,102,386	4,224,863	67,383,715
2020	67,383,715	11,687,656	1,607,373	1,947,943	5,160,697	80,676,751
2021	80,676,751	10,822,929	2,133,924	1,803,821	6,077,485	93,639,419
2022	93,639,419	10,034,110	2,807,606	1,672,352	6,967,409	106,160,981
2023	106,160,981	9,321,260	3,526,444	1,553,543	7,826,086	118,228,340
2024	118,228,340	16,066,427	4,265,286	1,444,746	8,915,760	137,500,495
2025	137,500,495	14,982,021	5,130,431	1,347,233	10,243,354	156,248,205
2026	156,248,205	13,937,901	6,225,577	1,253,342	11,526,163	174,233,350
2027	174,233,350	12,925,281	7,419,508	1,162,284	12,751,348	191,328,187
2028	191,328,187	11,949,082	8,627,871	1,074,501	13,912,829	207,487,727
2029	207,487,727	11,025,902	9,837,954	991,486	15,008,341	222,692,530
2030	222,692,530	10,131,359	11,151,500	911,045	16,032,076	236,793,419
2031	236,793,419	9,254,709	12,523,587	832,214	16,974,497	249,666,823
2032	249,666,823	8,401,642	13,982,540	755,503	17,825,847	261,156,270
2033	261,156,270	7,581,595	15,488,372	681,762	18,576,540	271,144,271
2034	271,144,271	6,826,726	16,815,390	613,882	19,227,137	279,768,862
2035	279,768,862	6,137,782	18,041,957	551,930	19,784,858	287,097,615
2036	287,097,615	5,500,158	19,251,154	494,592	20,251,166	293,103,192
2037	293,103,192	4,903,357	20,452,083	440,926	20,623,421	297,736,962
2038	297,736,962	4,350,935	21,591,013	391,250	20,900,132	301,005,765
2039	301,005,765	3,849,270	22,643,877	346,139	21,082,853	302,947,872
2040	302,947,872	3,396,923	23,575,395	305,463	21,175,558	303,639,496
2041	303,639,496	2,990,574	24,426,614	268,922	21,182,193	303,116,726
2042	303,116,726	2,623,637	25,178,685	235,926	21,105,822	301,431,575
2043	301,431,575	2,290,649	25,856,709	205,983	20,949,139	298,608,671
2044	298,608,671	1,982,081	26,463,643	178,235	20,713,511	294,662,384
2045	294,662,384	1,696,604	26,877,715	152,564	20,404,259	289,732,968
2046	289,732,968	1,443,083	27,115,818	129,767	20,031,210	283,961,675
2047	283,961,675	1,221,741	27,255,854	109,863	19,601,816	277,419,515
2048	277,419,515	1,027,480	27,312,491	92,394	19,120,527	270,162,637
2049	270,162,637	856,128	27,314,550	76,986	18,590,242	262,217,471
2050	262,217,471	703,896	27,259,580	63,297	18,012,838	253,611,329
2051	253,611,329	569,187	27,118,983	51,183	17,391,254	244,401,603
2052	244,401,603	452,069	26,898,247	40,652	16,729,445	234,644,219
2053	234,644,219	352,161	26,573,592	31,667	16,032,288	224,423,409
2054	224,423,409	268,465	26,137,476	24,141	15,306,109	213,836,365
2055	213,836,365	201,568	25,550,310	18,126	14,559,359	203,028,855
2056	203,028,855	149,337	24,861,449	13,429	13,800,755	192,104,069
2057	192,104,069	107,916	24,125,767	9,704	13,035,685	181,112,200
2058	181,112,200	76,133	23,294,119	6,846	12,269,485	170,156,852
2059	170,156,852	53,092	22,366,591	4,774	11,509,613	159,348,192
2060	159,348,192	36,760	21,386,173	3,306	10,762,443	148,757,916
2061	148,757,916	25,376	20,370,984	2,282	10,032,457	138,442,483
2062	138,442,483	17,468	19,340,218	1,571	9,323,007	128,441,169
2063	128,441,169	12,066	18,302,092	1,085	8,636,611	118,786,669
2064	118,786,669	8,348	17,264,269	751	7,975,333	109,505,331
2065	109,505,331	5,756	16,233,348	518	7,340,826	100,618,047
2066	100,618,047	3,946	15,214,902	355	6,734,391	92,141,128

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

SINGLE DISCOUNT RATE DEVELOPMENT
PROJECTION OF PLAN FIDUCIARY NET POSITION END OF YEAR (CONCLUDED)

Fiscal Year Ending June 30,	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.23%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2067	$ 92,141,128	$ 2,694	$ 14,213,834	$ 242	$ 6,157,027	$ 84,086,773
2068	84,086,773	1,814	13,234,679	163	5,609,447	76,463,191
2069	76,463,191	1,208	12,281,410	109	5,092,102	69,274,983
2070	69,274,983	783	11,357,644	70	4,605,192	62,523,244
2071	62,523,244	494	10,466,359	44	4,148,690	56,206,024
2072	56,206,024	304	9,610,065	27	3,722,364	50,318,599
2073	50,318,599	183	8,790,845	16	3,325,797	44,853,718
2074	44,853,718	103	8,010,391	9	2,958,405	39,801,827
2075	39,801,827	45	7,269,916	4	2,619,452	35,151,403
2076	35,151,403	14	6,570,078	1	2,308,083	30,889,421
2077	30,889,421	3	5,911,233	-	2,023,343	27,001,534
2078	27,001,534	-	5,293,489	-	1,764,190	23,472,235
2079	23,472,235	-	4,716,745	-	1,529,508	20,284,998
2080	20,284,998	-	4,180,770	-	1,318,108	17,422,336
2081	17,422,336	-	3,685,143	-	1,128,742	14,865,934
2082	14,865,934	-	3,229,240	-	960,107	12,596,801
2083	12,596,801	-	2,812,213	-	810,861	10,595,449
2084	10,595,449	-	2,432,943	-	679,635	8,842,140
2085	8,842,140	-	2,090,079	-	565,049	7,317,110
2086	7,317,110	-	1,782,080	-	465,729	6,000,759
2087	6,000,759	-	1,507,235	-	380,319	4,873,843
2088	4,873,843	-	1,263,682	-	307,494	3,917,655
2089	3,917,655	-	1,049,484	-	245,970	3,114,141
2090	3,114,141	-	862,684	-	194,511	2,445,968
2091	2,445,968	-	701,274	-	151,935	1,896,629
2092	1,896,629	-	563,202	-	117,122	1,450,548
2093	1,450,548	-	446,395	-	89,019	1,093,172
2094	1,093,172	-	348,801	-	66,647	811,018
2095	811,018	-	268,398	-	49,103	591,723
2096	591,723	-	203,167	-	35,565	424,121
2097	424,121	-	151,101	-	25,297	298,318
2098	298,318	-	110,276	-	17,651	205,694
2099	205,694	-	78,887	-	12,070	138,876
2100	138,876	-	55,253	-	8,078	91,701
2101	91,701	-	37,839	-	5,286	59,148
2102	59,148	-	25,299	-	3,378	37,227
2103	37,227	-	16,495	-	2,106	22,838
2104	22,838	-	10,477	-	1,279	13,641
2105	13,641	-	6,473	-	756	7,923
2106	7,923	-	3,886	-	435	4,473
2107	4,473	-	2,264	-	243	2,451
2108	2,451	-	1,281	-	132	1,302
2109	1,302	-	703	-	69	668
2110	668	-	373	-	35	330
2111	330	-	190	-	17	157
2112	157	-	94	-	8	70
2113	70	-	45	-	3	29
2114	29	-	20	-	1	10
2115	10	-	11	-	0	0
2116	0	-	-	-	0	0

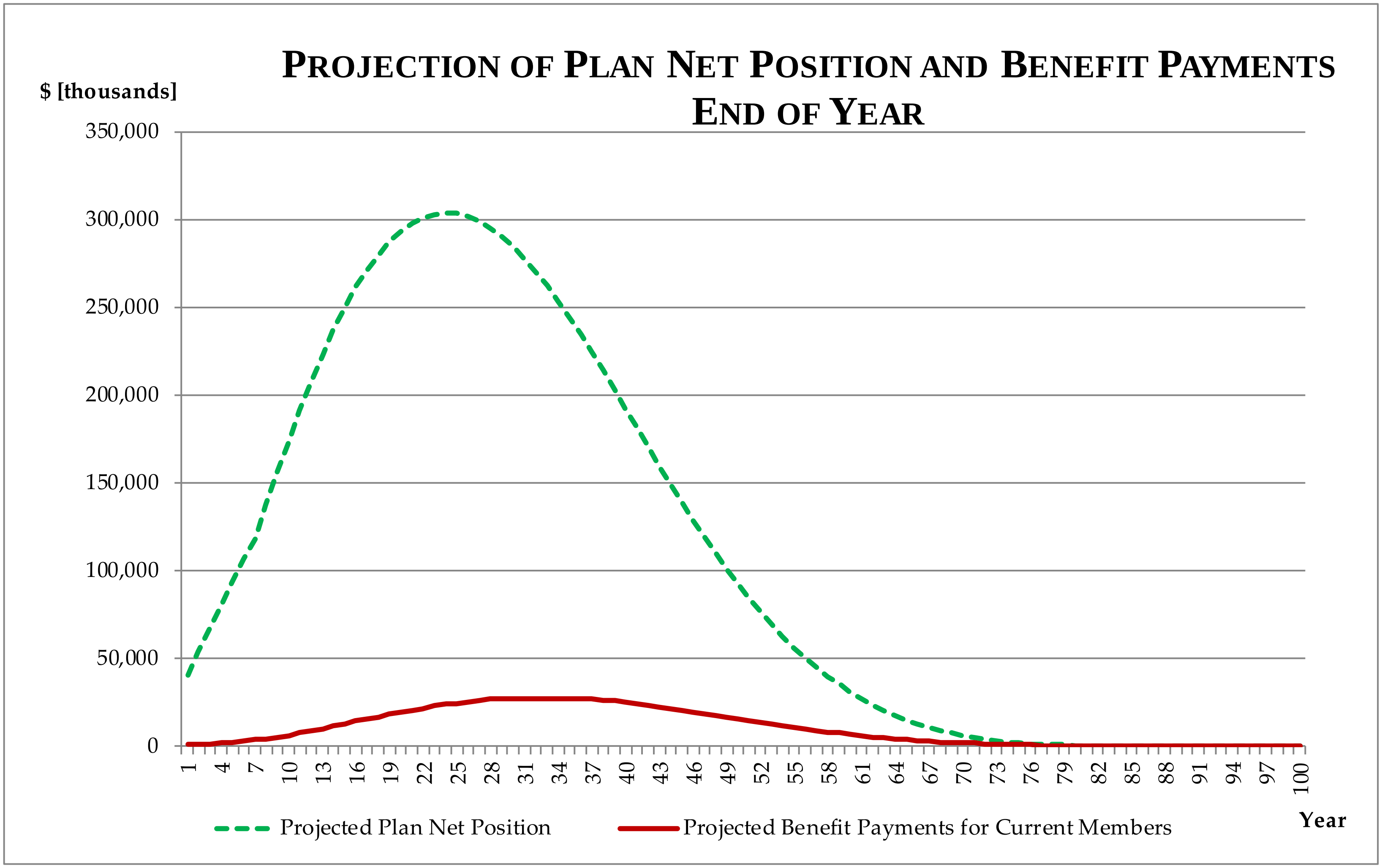
Employer contributions as shown may differ substantially from those determined by a funding valuation.

Single Discount Rate Development
Present Values of Projected Benefits End of Year

Fiscal Year Ending June 30,	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^((a)-.5)	(g)=(e)*vf ^((a)-.5)	(h)=((c)/(1+sdr)^(a-.5)
2017	$ 26,018,301	$ 627,036	$ 627,036	$ -	$ 605,529	$ -	$ 605,529
2018	40,107,168	912,348	912,348	-	821,648	-	821,648
2019	53,873,515	1,226,594	1,226,594	-	1,030,173	-	1,030,173
2020	67,383,715	1,607,373	1,607,373	-	1,258,953	-	1,258,953
2021	80,676,751	2,133,924	2,133,924	-	1,558,675	-	1,558,675
2022	93,639,419	2,807,606	2,807,606	-	1,912,478	-	1,912,478
2023	106,160,981	3,526,444	3,526,444	-	2,240,170	-	2,240,170
2024	118,228,340	4,265,286	4,265,286	-	2,526,829	-	2,526,829
2025	137,500,495	5,130,431	5,130,431	-	2,834,427	-	2,834,427
2026	156,248,205	6,225,577	6,225,577	-	3,207,560	-	3,207,560
2027	174,233,350	7,419,508	7,419,508	-	3,564,954	-	3,564,954
2028	191,328,187	8,627,871	8,627,871	-	3,866,038	-	3,866,038
2029	207,487,727	9,837,954	9,837,954	-	4,111,033	-	4,111,033
2030	222,692,530	11,151,500	11,151,500	-	4,345,734	-	4,345,734
2031	236,793,419	12,523,587	12,523,587	-	4,551,372	-	4,551,372
2032	249,666,823	13,982,540	13,982,540	-	4,738,963	-	4,738,963
2033	261,156,270	15,488,372	15,488,372	-	4,895,383	-	4,895,383
2034	271,144,271	16,815,390	16,815,390	-	4,956,460	-	4,956,460
2035	279,768,862	18,041,957	18,041,957	-	4,959,433	-	4,959,433
2036	287,097,615	19,251,154	19,251,154	-	4,935,019	-	4,935,019
2037	293,103,192	20,452,083	20,452,083	-	4,889,374	-	4,889,374
2038	297,736,962	21,591,013	21,591,013	-	4,813,627	-	4,813,627
2039	301,005,765	22,643,877	22,643,877	-	4,707,972	-	4,707,972
2040	302,947,872	23,575,395	23,575,395	-	4,571,153	-	4,571,153
2041	303,639,496	24,426,614	24,426,614	-	4,416,861	-	4,416,861
2042	303,116,726	25,178,685	25,178,685	-	4,245,875	-	4,245,875
2043	301,431,575	25,856,709	25,856,709	-	4,066,222	-	4,066,222
2044	298,608,671	26,463,643	26,463,643	-	3,881,068	-	3,881,068
2045	294,662,384	26,877,715	26,877,715	-	3,676,018	-	3,676,018
2046	289,732,968	27,115,818	27,115,818	-	3,458,531	-	3,458,531
2047	283,961,675	27,255,854	27,255,854	-	3,241,996	-	3,241,996
2048	277,419,515	27,312,491	27,312,491	-	3,029,686	-	3,029,686
2049	270,162,637	27,314,550	27,314,550	-	2,825,622	-	2,825,622
2050	262,217,471	27,259,580	27,259,580	-	2,629,801	-	2,629,801
2051	253,611,329	27,118,983	27,118,983	-	2,439,837	-	2,439,837
2052	244,401,603	26,898,247	26,898,247	-	2,256,811	-	2,256,811
2053	234,644,219	26,573,592	26,573,592	-	2,079,242	-	2,079,242
2054	224,423,409	26,137,476	26,137,476	-	1,907,226	-	1,907,226
2055	213,836,365	25,550,310	25,550,310	-	1,738,675	-	1,738,675
2056	203,028,855	24,861,449	24,861,449	-	1,577,729	-	1,577,729
2057	192,104,069	24,125,767	24,125,767	-	1,427,811	-	1,427,811
2058	181,112,200	23,294,119	23,294,119	-	1,285,641	-	1,285,641
2059	170,156,852	22,366,591	22,366,591	-	1,151,216	-	1,151,216
2060	159,348,192	21,386,173	21,386,173	-	1,026,535	-	1,026,535
2061	148,757,916	20,370,984	20,370,984	-	911,877	-	911,877
2062	138,442,483	19,340,218	19,340,218	-	807,364	-	807,364
2063	128,441,169	18,302,092	18,302,092	-	712,513	-	712,513
2064	118,786,669	17,264,269	17,264,269	-	626,792	-	626,792
2065	109,505,331	16,233,348	16,233,348	-	549,626	-	549,626
2066	100,618,047	15,214,902	15,214,902	-	480,410	-	480,410

SINGLE DISCOUNT RATE DEVELOPMENT
PRESENT VALUES OF PROJECTED BENEFITS (CONCLUDED)

Fiscal Year Ending June 30,	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^((a)-.5)	(g)=(e)*vf ^((a)-.5)	(h)=((c)/(1+sdr)^(a-.5)
2067	$ 92,141,128	$ 14,213,834	$ 14,213,834	$ -	$ 418,541	$ -	$ 418,541
2068	84,086,773	13,234,679	13,234,679	-	363,432	-	363,432
2069	76,463,191	12,281,410	12,281,410	-	314,516	-	314,516
2070	69,274,983	11,357,644	11,357,644	-	271,248	-	271,248
2071	62,523,244	10,466,359	10,466,359	-	233,108	-	233,108
2072	56,206,024	9,610,065	9,610,065	-	199,605	-	199,605
2073	50,318,599	8,790,845	8,790,845	-	170,278	-	170,278
2074	44,853,718	8,010,391	8,010,391	-	144,699	-	144,699
2075	39,801,827	7,269,916	7,269,916	-	122,469	-	122,469
2076	35,151,403	6,570,078	6,570,078	-	103,217	-	103,217
2077	30,889,421	5,911,233	5,911,233	-	86,605	-	86,605
2078	27,001,534	5,293,489	5,293,489	-	72,325	-	72,325
2079	23,472,235	4,716,745	4,716,745	-	60,100	-	60,100
2080	20,284,998	4,180,770	4,180,770	-	49,679	-	49,679
2081	17,422,336	3,685,143	3,685,143	-	40,837	-	40,837
2082	14,865,934	3,229,240	3,229,240	-	33,372	-	33,372
2083	12,596,801	2,812,213	2,812,213	-	27,103	-	27,103
2084	10,595,449	2,432,943	2,432,943	-	21,867	-	21,867
2085	8,842,140	2,090,079	2,090,079	-	17,518	-	17,518
2086	7,317,110	1,782,080	1,782,080	-	13,930	-	13,930
2087	6,000,759	1,507,235	1,507,235	-	10,987	-	10,987
2088	4,873,843	1,263,682	1,263,682	-	8,591	-	8,591
2089	3,917,655	1,049,484	1,049,484	-	6,653	-	6,653
2090	3,114,141	862,684	862,684	-	5,100	-	5,100
2091	2,445,968	701,274	701,274	-	3,867	-	3,867
2092	1,896,629	563,202	563,202	-	2,896	-	2,896
2093	1,450,548	446,395	446,395	-	2,141	-	2,141
2094	1,093,172	348,801	348,801	-	1,560	-	1,560
2095	811,018	268,398	268,398	-	1,119	-	1,119
2096	591,723	203,167	203,167	-	790	-	790
2097	424,121	151,101	151,101	-	548	-	548
2098	298,318	110,276	110,276	-	373	-	373
2099	205,694	78,887	78,887	-	249	-	249
2100	138,876	55,253	55,253	-	163	-	163
2101	91,701	37,839	37,839	-	104	-	104
2102	59,148	25,299	25,299	-	65	-	65
2103	37,227	16,495	16,495	-	39	-	39
2104	22,838	10,477	10,477	-	23	-	23
2105	13,641	6,473	6,473	-	13	-	13
2106	7,923	3,886	3,886	-	8	-	8
2107	4,473	2,264	2,264	-	4	-	4
2108	2,451	1,281	1,281	-	2	-	2
2109	1,302	703	703	-	1	-	1
2110	668	373	373	-	1	-	1
2111	330	190	190	-	0	-	0
2112	157	94	94	-	0	-	0
2113	70	45	45	-	0	-	0
2114	29	20	20	-	0	-	0
2115	10	11	11	-	0	-	0
2116	0	-	-	-	-	-	-
				Totals	$ 141,163,687	$ -	$ 141,163,687



PROJECTION OF PLAN NET POSITION AND BENEFIT PAYMENTS
END OF YEAR
$ [thousands]
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
1 4 7 10 13 16 19 22 25 28 31 34 37 40 43 46 49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
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)	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 covered employees, which is typically only the pensionable pay and does not include pay above any pay cap.
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 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.
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 value of the assets of the trust.
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 contribution entities to plan members for benefits provided through a defined benefit pension plan.
Non-Employer Contribution Entities	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.
Normal Cost	The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method. Also known as 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. Also known as normal cost.

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 the GASB Statement No. 67, the valuation asset is equal to the market value of assets.

December 2, 2016

Ms. Cynthia Thomas, Executive Director
The General Retirement System of the City of Detroit
One Detroit Center
500 Woodward Avenue, Suite 3000
Detroit, Michigan 48226

Dear Ms. Thomas:

Please find enclosed 20 copies of the GASB Statement No. 67 Plan Reporting Accounting Schedules report of the General Retirement System of the City of Detroit.

Sincerely,

Kenneth G. Alberts

KGA:bd
Enclosure

cc: David T. Kausch, GRS
Judith A. Kermans, GRS
David Cetlinski
Lamonica Arrington-Calean