Gabriel Roeder Smith & Company
Consultants & Actuaries

THE POLICE AND FIRE 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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November 23, 2016

Board of Trustees
The Police and Fire Retirement System of the City of Detroit

Dear Board Members:

This report provides information required for the Police and Fire 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 Police and Fire 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 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 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 the 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 GRS. GRS is not responsible for the accuracy of any information provided by the Retirement System or the plan sponsor.

At the direction of the System and with approval of the System's Auditor, the long term expected return on assets used to determine the discount rate is 7.15% net of investment expenses as of June 30, 2016, down from 7.47% net of investment expenses as of June 30, 2015. We have reviewed this assumption based on the System's asset allocation and have determined it to be reasonable for purposes of this measurement.

The benefit provisions reflected in this valuation for the development of the end of year TPL are those in effect for Component I as of the end of the plan year on June 30, 2016. There were no changes in benefit provisions from the June 30, 2015 GASB Statement No. 67 valuation.

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,

David T Kausch

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

Judith A. Kermans

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DTK/JAK/KGA:mrb

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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		
- Retirees and Beneficiaries		67
- DROP Members		118
- Inactive, Nonretired Members		63
- Active Members		2,484
- Total		2,732
Covered Payroll (excluding DROP)	$	131,695,469
Net Pension Liability		
Total Pension Liability	$	49,799,331
Plan Fiduciary Net Position		42,283,763
Net Pension Liability	$	7,515,568
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		84.91%
Net Pension Liability as a Percentage of Covered Payroll		5.71%
Development of the Single Discount Rate as of June 30, 2016		
Single Discount Rate		7.15%
Long-Term Expected Rate of Return		7.15%
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.*

DISCUSSION

Implementation of GASB Statement No. 67

The System first implemented GASB Statement No. 67 for the plan year ending June 30, 2015.

Changes to the Actuarial Assumptions

The Single Discount Rate (SDR) changed to 7.15% at the end of the year from 7.47% at the beginning of the year.

Other economic and demographic assumptions are the same as those used in the June 30, 2015 GASB Statement No. 67 valuation as approved by the Boards. Timing of pay increases was changed to beginning of year. This change relates to a change in the reported data. The prior valuation used data reported for the Component II plans. That data included the pay rate for the upcoming year. This valuation is the first one to use data specifically supplied for Component I, which includes the pay that was paid in the prior year (ending on the valuation date).

There was an administrative change in splitting of administrative expenses between Component I and Component II. Administrative expenses are now shared 50/50. This change was reflected in our modeling, where appropriate.

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 6.0% of pay for members hired before June 30, 2014 and 8.0% of pay for members hired after June 30, 2014 but can be increased if necessary to maintain funding levels at 100%. Employer contributions are initially set at 12.25% of payroll. Employer contributions are actuarially determined beginning in Fiscal 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 1% compound COLA. It can be granted beginning July 1, 2015 only if the five year projection shows the plan funded status above 90% based upon 6.75% future investment return. It is reasonable to assume that there will be years in which a 1% compound 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% compound COLA beginning July 1, 2016 to model the potential average COLA over time. In the notes section we indicate the TPL based on a 0% VPIF and a 1% compound VPIF beginning July 1, 2016.

DROP Plan

We understand that the System is working on bringing the management of all DROP plan balances in-house, but that all balances are currently (as of measurement date) still managed by an outside vendor and the amount of the balances is currently unavailable. The balances were not included in the reported assets and, therefore, not included in the computed liabilities.

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; and
- certain information about mortality assumptions and the dates of experience studies.
- 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. ***Current DROP balances for members of this plan were not provided and are not included. These balances were also excluded from the reported assets.***

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 (SDR) 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 Bond Buyer Index) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.15%; the municipal bond rate is 2.85% (based on the "20-Bond GO Index" from the Bond Buyer Index); and the resulting Single Discount Rate is 7.15% 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% compound each year beginning in Fiscal Year 2016.
3) Mandatory employee contributions were assumed to be fixed at the current rate of 6% for members hired before June 30, 2014 and 8% for members hired after June 30, 2014.
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 fully fund the plan 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 (84.91% 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 Police and Fire 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 will be 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	
Accounts Receivable - Sale of Investments	N/A
Accrued Interest and Other Dividends	N/A
Contributions	N/A
Accounts Receivable - Other	N/A
Total Receivables	N/A
Investments	
Fixed Income	N/A
Domestic Equities	N/A
International Equities	N/A
Real Estate	N/A
Other	N/A
Total Investments	N/A
Total Assets	$ 46,238,687
Liabilities	
Payables	
Accounts Payable	$ 3,954,924
Total Liabilities	$ 3,954,924
Total Fund Balances	$ 42,283,763

A breakdown of the assets by investment class was not provided.

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION FOR YEAR ENDED JUNE 30, 2016

Additions		
Contributions		
Employer	$	15,831,763
Mandatory Member Pension Fund Contributions		7,958,271
Voluntary Member Contributions		15,459
Total Contributions	$	23,805,493
Investment Income		
Net Appreciation in Fair Value of Investments	$	-
Investment Income		379,655
Less Investment Expense		(127,229)
Net Investment Income	$	252,426
Other	$	-
Total Additions	$	24,057,919
Deductions		
Benefit Payments, including Refunds of Employee Contributions	$	101,251
Pension Plan Administrative Expense		3,000,369
Other		-
Total Deductions	$	3,101,620
Net Increase in Net Position	$	20,956,299
Total Fund Balances Beginning of Year	$	21,327,464
Total Fund Balances End of Year	$	42,283,763

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#	$ 24,084,267	$ 24,850,184
Interest on the Total Pension Liability (and Service Cost)	2,743,066	894,089
Benefit Changes	-	-
Difference between Expected and Actual Experience	(4,086,963)	-
Assumption Changes	2,424,058	(1,008,119)
Benefit Payments	(63,882)	-
Refunds	(37,369)	-
Benefit Payments and Refunds	-	-
Net Change in Total Pension Liability	25,063,177	24,736,154
Total Pension Liability - Beginning	24,736,154	-
Total Pension Liability - Ending (a)	$ 49,799,331	$ 24,736,154
Plan Fiduciary Net Position		
Employer Contributions	$ 15,831,763	$ 14,606,971
Mandatory Employee Contributions	7,958,271	7,390,335
Voluntary Employee Contributions	15,459	14,370
Pension Plan Net Investment Income	252,426	21,019
Benefit Payments	(63,882)	(19,554)
Refunds	(37,369)	-
Pension Plan Administrative Expense	(3,000,369)	(685,677)
Net Change in Plan Fiduciary Net Position	20,956,299	21,327,464
Plan Fiduciary Net Position - Beginning	21,327,464	-
Plan Fiduciary Net Position - Ending (b)	$ 42,283,763	$ 21,327,464
Net Pension Liability - Ending (a) - (b)	7,515,568	3,408,690
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	84.91 %	86.22 %
Covered-Employee Payroll (excluding DROP)	$ 131,695,469	$ 132,566,687
Net Pension Liability as a Percentage of Covered-Employee Payroll	5.71 %	2.57 %

Notes to Schedule:

\# *Voluntary employee contributions made during the year are added to the service cost and included in the employee contribution total.*

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

Ultimately 10 Fiscal Years will be Displayed

FY Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll*	Net Pension Liability as a % of Covered Payroll
2015	$ 24,736,154	$ 21,327,464	$ 3,408,690	86.22%	$ 132,566,687	2.57%
2016	$ 49,799,331	$ 42,283,763	$ 7,515,568	84.91%	$ 131,695,469	5.71%

* *Covered payroll shown is the reported payroll from the actuarial valuation date (census date). For 2015, covered payroll was based on payroll reported for Component II. For 2016, covered payroll was based on payroll reported for Component I.*

SCHEDULE OF CONTRIBUTIONS MULTIYEAR

FY Ending June 30,	Actuarially Determined Contribution#	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll*	Actual Contribution as a % of Covered Payroll
2015	N/A	$ 14,606,971	N/A	$ 132,566,687	11.02%
2016	N/A	$ 15,831,763	N/A	$ 131,695,469	12.02%

* *Covered payroll shown is the reported payroll from the actuarial valuation date (census date). For 2015, covered payroll was based on payroll reported for Component II. For 2016, covered payroll was based on payroll reported for Component I.*

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

NOTES TO SCHEDULE OF CONTRIBUTIONS

Employer Contribution: 12.25% until FY 2024. Actuarially determined beginning in FY 2024.

SCHEDULE OF INVESTMENT RETURNS

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

CONTRIBUTION STABILIZATION RESERVE (CSR)

The CSR is currently $0.

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

A Single Discount Rate of 7.15% 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 7.15% as directed by the System and 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 6% of compensation for members hired before June 30, 2014 and 8% for members hired after June 30, 2014 and that employer contributions will be made at 12.25% 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 19.86% 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 projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the net pension liability to changes in the Single Discount Rate, the following presents the plan's net pension liability, calculated using a Single Discount Rate of 7.15%, 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 6.15%	Current Single Discount Rate Assumption 7.15%	1% Increase 8.15%
Total Pension Liability (TPL)	$58,576,068	$49,799,331	$42,826,970
Net Position Restricted for Pensions	42,283,763	42,283,763	42,283,763
Net Pension Liability (NPL)	$16,292,305	$ 7,515,568	$ 543,207

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	67
DROP Members	118
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	63
Active Plan Members	2,484
Total Plan Members	2,732

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 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: 0% and 1% beginning July 1, 2015 (the maximum amount payable). All scenarios are based on a 7.15% discount rate.

VPIF ASSUMPTION

	Minimum 0%	Current Assumption 0.5%	Maximum 1%
Total Pension Liability (TPL)	$47,303,778	$49,799,331	$52,519,549
Net Position Restricted for Pensions	42,283,763	42,283,763	42,283,763
Net Pension Liability (NPL)	$ 5,020,015	$ 7,515,568	$10,235,786

SECTION E

SUMMARY OF BENEFITS

SUMMARY OF BENEFIT PROVISIONS (JULY 1, 2015)

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.

Plan Membership

Employee means an employee of the City's Police Department who has taken an oath of office or a Firefighter providing services to the City, excluding individuals who are compensated on a contractual or fee basis, any person who is classified as a non-common law employee or an independent contractor for federal income tax and withholding, and also excluding the medical Director of the Retirement System.

The membership of the Retirement System shall consist of all employees of the Fire Department of the City of Detroit and of the Police Department of the City of Detroit who are employed as Firefighters or Police Officers according to the rules and regulations of the respective departments.

Appointed Officials of the Police Department or the Fire Department who are appointed from the membership are permitted to remain members. A Police Officer or Firefighter who is **killed or totally disabled prior to being confirmed**, shall be deemed to have been a member as of the date of his or her death. Any Member who is **transferred to a civilian position** in his or her department shall continue as a member.

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 a member. Credited Service is recorded from the later of July 1, 2014, or the date of employment with the City as a Police Officer or Firefighter. A member also receives 1 month of Credited Service for each month the member is eligible to receive duty disability benefits, until such time as the member has 25 years of credited service.

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.

SUMMARY OF BENEFIT PROVISIONS (CONTINUED)

Average Final Compensation

Compensation: Compensation is base salary, excluding bonuses, overtime, sick leave, longevity pay, unused vacation time, etc. 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 5 consecutive years of Credited Service (including Prior Service) immediately preceding the date of the member’s last termination of City employment as a Police Officer or Firefighter. If the member has less than 5 years of Credited Service (including Prior Service), the Average Final Compensation is the average of the compensation received during all years of Credited Service.

Final Compensation means the annual compensation of a member at the time of last termination of employment.

Normal Retirement

Normal Retirement Age: The Normal Retirement Age is 50 with 25 or more years of Credited Service (including prior service), with the following transition period.

Fiscal Year	Age and Elgibility Service
2015	43 and 20
2016	43 and 20
2017	44 and 21
2018	45 and 22
2019	46 and 23
2020	47 and 24
2021 and later	50 and 25

Normal Retirement Amount: The retirement allowance payable to a member who retires on or after the normal retirement age is 2.0% times average final compensation times Credited Service (after June 30, 2014) measured to the nearest month.

Deferred Retirement (Vested Benefit)

Eligibility: 10 years of Vesting Service.

Benefit Commencement: Age 55.

Annual Amount: Same as Normal Retirement but based on Average Final Compensation and Credited Service at the time of termination. An actuarial reduction from age 62 is applicable if benefits are taken prior to age 62 (*waived for DPLSA and DPCOA members*).

SUMMARY OF BENEFIT PROVISIONS (CONTINUED)

Duty Disability Retirement

Eligibility: The individual must be totally disabled for duty by reason of illness, injury, or disease resulting from performance of duty.

Amount: For the first 24 months, the member shall receive a basic benefit equal to 50% of his or her final compensation plus a supplemental benefit equal to 16-2/3 % of final compensation. After 24 months, if the Board finds that the member is disabled from any occupation, the member shall continue to receive both the 50% and the 16-2/3% benefit until the member would have achieved 25 years of service. The 16-2/3% benefit ceases at the time the member would have had 25 years of service, or if the member is found not to be disabled from any occupation after the 24 month review. Duty disability benefits continue to be paid until age 65, unless the member is found not to be disabled prior to that date. Upon termination of disability, or the attainment of age 65, the member's benefit is reduced to the 50% basic benefit. Earned Income in any year acts to reduce the disability benefit in the following year, to the extent that earned income combined with the disability benefit exceeds the compensation at the time of disability (after adjustment for the Variable Improvement factor). Amounts payable from Worker's Comp or similar programs are offset against the amount otherwise payable.

Non-Duty Disability Retirement

Eligibility: Total and permanent disability that is not duty related but that occurred while in the employ of the City.

Amount: If the member has less than 5 years of Credited service, accumulated contributions are refunded or, at the members option, may be payable in the form of a cash refund annuity. No other benefits are payable. Members with 5 or more years of credited service at the time of disability may receive a benefit computed as a Normal Retirement benefit, but not less than 20% of Average Final Compensation. Earned Income in any year acts to reduce the disability benefit in the following year, to the extent that earned income combined with the disability benefit (after adjustment for the Variable Improvement factor) exceeds the compensation at the time of disability. Amounts payable from Worker's Comp or similar programs are offset against the amount otherwise payable.

SUMMARY OF BENEFIT PROVISIONS (CONTINUED)

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: Accumulated Mandatory Employee Contributions are refunded. If there is a surviving spouse, the surviving spouse receives a lifetime pension of 5/11ths of the member's final compensation. Each surviving child under age 18 receives a pension of $1/10^{th}$ of final compensation payable until age 18. If there are more than two surviving children, each receives an equal share of 7/33rds of final compensation, payable to age 18 and redistributed to the remaining children upon attainment of age 18. The sum of all benefits payable shall not exceed 2/3rds of the member's Final Compensation. If there is no surviving spouse, each surviving child under age 18 receives a pension of $1/4^{th}$ of the member's final compensation, subject to a maximum total of ½ of final compensation. If there is neither surviving spouse nor surviving children under the age of 18, each dependent parent, if any, shall receive a pension of $1/6^{th}$ of the member's Final Compensation.

Ordinary (Other than Line of Duty) Death Before Retirement

Eligibility: 10 or more years of Vesting Service. 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.

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: In receipt of a retirement allowance for at least 12 months as of the first day of the plan year.

Amount: Beginning July 1, 2015 and effective the first date of each Plan year thereafter, the Board may determine that the Component I Retirement Allowance shall be increased by 1% of the then current (i.e., compounded to include prior VPIF's) 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 90%.

Summary of Benefit Provisions (Continued)

Deferred Retirement Option Program "DROP"

Eligibility: Eligible for immediate retirement under Component I and either a non-union executive or covered by a collective bargaining agreement permitting participation in the DROP.

Amount: Upon entry into the DROP, the member ceases to accrue additional retirement benefits and must elect the optional form under which the retirement allowance will ultimately be paid. 75% of that amount, including VPIF, is paid into the DROP account.

Investment: ING is currently responsible for the administration and investment of the DROP accounts. As soon as possible after July 1, 2014, the Board shall determine whether or not it is feasible for the Board to administer and invest the DROP accounts, in which case DROP assets would be commingled with Retirement System assets for investment purposes.

Earnings Credits: If the Board administers and invests the accounts, earnings credits shall be 75% of actual net Retirement System earnings rates, but neither less than 0% nor more than 7.75%.

Fees: Fees associated with maintenance of the DROP accounts outside the Retirement System shall be charged directly to DROP participants by means of deductions from their accounts.

Distribution: Upon termination of employment for any reason (including disability), the member's DROP account may be distributed in the form of a lump sum or an annuity. Any such annuity shall be subject to market rates of interest and other market related assumptions. At the same time, the member's monthly retirement allowance shall commence in the amount that would have been paid at the time the member entered the DROP, together with any applicable VPIF increases.

Death While in DROP: In the case of a member who dies during DROP participation, the DROP account balance is paid either to the named beneficiary or to the estate. Further, the DROP election is then rescinded and 100% of the retirement allowance that would have been paid but for participation in the DROP is restored. Survivor benefits are then payable in accordance with the payment option elected by the deceased member at the time the member elected to participate in the DROP.

Termination of DROP: The DROP can be terminated if it is determined that it is not cost neutral and cannot be amended to make it so.

Contributions

Members: Members who were active as of June 30, 2014 contribute 6% of Compensation. Members who are hired or rehired after that date contribute 8% of compensation. DROP participants do not make employee contributions. Member contributions are "picked up" in accordance with IRC 414(h).

Employers: 11.2% of compensation for members of the DPOA until October 3, 2014; 11.2% of Compensation of active employees who are members of the DFFA until November 6, 2014; 12.25% of Compensation of Active employees who are members of the DPCOA, DPLSA, and DPOA from and after October 3, 2014 until June 30, 2023; 12.25% of Compensation of DFFA members from and after November 6, 2014 until June 30, 2023, to be split between the Pension Accumulation Fund and the Rate Stabilization reserve. 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.

SUMMARY OF BENEFIT PROVISIONS (CONTINUED)

Voluntary Employee Contributions

Eligibility: Coverage by a collective bargaining agreement that permits the Member to make Voluntary Employee Contributions to Component I. Cannot be a current participant in the DROP.

Amount: Not less than 1% of Compensation nor more than 10% of Compensation. DPOA members can elect to have a whole % of the amount the City pays him or her for accumulated sick leave in excess of 400 hours paid to the voluntary employee account. 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 on Retirement System Assets for the second fiscal year immediately preceding the fiscal 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.

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 in either 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.

SUMMARY OF BENEFIT PROVISIONS (CONTINUED)

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.
>
> ***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.

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.

SUMMARY OF BENEFIT PROVISIONS (CONCLUDED)

Rehire Before or After Retirement

A former member who is vested and is not a DROP participant and who later becomes a Police Officer or Firefighter (but not a Police Assistant) shall have his or her 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.

Retirement benefits for a Retiree who returns to active full time employment other than as a Police Assistant 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.

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

For the Determination of the June 30, 2016 TPL:

The investment return rate used in the valuation was 7.15% per year, compounded annually (net after expenses). This is a prescribed assumption set by the Retirement System. We believe it is reasonable when using a 2.25% assumed **price inflation**.

Pay increase assumptions for individual active members are shown on page 27. 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.

NON-ECONOMIC ASSUMPTIONS

The mortality table used to measure retired life mortality is the RP-2014 Blue Collar Annuitant Table for males and females. Tables were extended below age 50 with a cubic spline to the published Juvenile rates. Pre-retirement mortality is the RP-2014 Blue Collar Employee Tables for males and females. 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). The rationale for the mortality assumption is based on the 2008-2013 Mortality Experience Study issued February 13, 2015.

The probabilities of age/service retirement for members eligible to retire are shown on pages 28 and 29. 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 are shown for sample ages on page 30.

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

Marriage Assumption: 100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. This assumption accounts for potential dependent children/dependent parent death benefits. No other assumption is made for surviving children/dependent parents. Male spouses are assumed to be three years older than female spouses.

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.

Decrement Timing: Decrements 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 of decrement.

Decrement Operation: Disability and mortality decrements do not operate during the first 5 years of service. Disability and withdrawal do not operate during retirement eligibility.

Longevity in AFC: None

Unused Sick Leave Payout: None

Administrative Expense: 3.0% of payroll. 50% of administrative expenses were allocated to Component I and 50% to Component II based on actual administrative expenses paid.

Post-Retirement COLA: A 0.5% COLA was used to determine the SDR and TPL.

Disability Change Age: The duty disability benefit is assumed to change at the earlier of age 65 or the time the member would have had 25 years of credited service (including prior service). The benefit at change age was assumed to be 2.0% times final compensation times projected benefit service.

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS (CONCLUDED)

DROP Assumption:	Members are assumed to retire or DROP based on assumed rates. 60% of members leaving active service in accordance with the Ret/DROP rates are assumed to DROP/40% and are assumed to retire. Members entering the DROP are assumed to retire 5 years after entering the DROP. Employer contributions are assumed not to be made on DROP payroll. DROP account balances are assumed to grow at 6.75% per year.
Service Credit Accruals:	Service accruals for calculating benefits begin as of June 30, 2014 for Component I liabilities. However, service prior to June 30, 2014 is used to satisfy benefit eligibility requirements.
Workers Compensation Offset:	No Workers compensation offsets are assumed for duty disability benefits.
Form of Payment:	No adjustment has been made for alternate forms of payment elections.
Disability Load:	Duty Disability benefits were increased by 2.0% to account for the Death While Disabled provision based on an analysis of the estimated impact for a sample set of individuals.
IRC Section 415 Limit:	We assumed that no benefits will be limited by IRC Section 415. The limit is assumed to grow with wage inflation.
IRC Section 401(a)(17) Limit:	All of the member salary provided falls below the current 401(a)(17) limit. The limit is assumed to grow with wage inflation.
IRC Section 401(h) Limit:	We did not test for the 401(h) limit on employer contributions for medical benefits. No employer contributions are anticipated in this valuation.
Data adjustments:	Benefits for newly identified DROP, retired, and deferred members were estimated based on previously reported active member data.

The rationale for the miscellaneous and technical assumptions is the 2002-2007 Experience Study, modified as necessary for changes in data, administration, or plan provisions.

FUNDING METHODS

The entry age actuarial cost method was used in determining age and service liabilities and normal cost, vesting liabilities and normal cost, and casualty 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. Retirement is the earlier of DROP or termination of active service. This method is used in this report to comply with the GASB Standards and may differ from the method used for funding the plan.

Unfunded Actuarial Accrued Liabilities. Actual employer contributions through June 30, 2023 are set at 12.25% of compensation. The amortization period and method after 2023 has not yet been established by the Board. For the purposes of the GASB projections only, the employer contribution shown in this report is the rate which, when applied to the closed group projected payroll, is sufficient to fund the benefits.

Present assets are set equal to the Market Value.

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

SAMPLE SALARY ADJUSTMENT RATES

Service	Salary Increase Assumptions for an Individual Member: Merit & Seniority	Base (Economic)	Increase Next Year
5	5.20%	3.00%	8.20%
10	1.70%	3.00%	4.70%
15	1.00%	3.00%	4.00%
20	1.00%	3.00%	4.00%
25	1.00%	3.00%	4.00%
30	1.00%	3.00%	4.00%
35	1.00%	3.00%	4.00%
Ref			306 + 3.00%

Base (Economic) salary increase 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 FOR MALES AND FEMALES

Sample Attained Ages in 2015	Future Life Expectancy (years): Males	Females
45	39.26	42.64
50	34.29	37.57
55	29.50	32.66
60	24.95	27.90
65	20.62	23.29
70	16.58	18.93
75	12.88	14.91
80	9.62	11.33

PROBABILITIES OF SERVICE RETIREMENT FOR MEMBERS OLDER THAN AGE 43 OR WITH 17 OR MORE YEARS OF CREDITED SERVICE (INCLUDING PRIOR SERVICE)

Service	Percent of Eligible Active Members Retiring Within Next Year			
	Police		Fire	
	20&Out	25 &Out	20&Out	25 &Out
19	40%		40%	
20	40%		40%	
21	40%		40%	
22	40%		40%	
23	40%		40%	
24	100%	40%	100%	40%
25	100%	40%	100%	40%
26	100%	40%	100%	40%
27	100%	40%	100%	40%
28	100%	40%	100%	40%
29	100%	100%	100%	100%
30	100%	100%	100%	100%
31	100%	100%	100%	100%
32	100%	100%	100%	100%
33	100%	100%	100%	100%
34	100%	100%	100%	100%
35	100%	100%	100%	100%
36	100%	100%	100%	100%
37	100%	100%	100%	100%
38	100%	100%	100%	100%
39	100%	100%	100%	100%
40	100%	100%	100%	100%
Ref	922	922	922	922

Age	Percent of Eligible Active Members Retiring Within Next Year	
	Police	Fire
60	40%	100%
61	40%	100%
62	40%	100%
63	40%	100%
64	40%	100%
65	100%	100%
66	100%	100%
67	100%	100%
68	100%	100%
69	100%	100%
70	100%	100%
Ref	922	1

Members eligible for 20 & Out are assumed to be first eligible for normal retirement after 19 years of service due to their ability to purchase service. Members eligible for 25 & Out are assumed to be eligible for normal retirement after 24 years of service due to their ability to purchase service. Members are also eligible to retire at age 60 with no service requirement.

PROBABILITIES OF SERVICE RETIREMENT FOR MEMBERS AGE 43 OR YOUNGER AND WITH LESS THAN 17 YEARS OF SERVICE ON JUNE 30, 2014

Age	Percent of Eligible Active Members Retiring Within Next Year	
	Police	Fire
50	30%	20%
51	30%	20%
52	30%	20%
53	30%	20%
54	30%	20%
55	30%	20%
56	30%	20%
57	30%	20%
58	30%	20%
59	30%	20%
60	100%	100%

PROBABILITIES OF SEPARATION

Sample Ages	Years of Service	% of Active Members Withdrawing within Next Year	
		Police	Fire
ALL	0	8.50%	5.00%
	1	7.50%	4.00%
	2	6.00%	3.00%
	3	5.00%	2.00%
	4	4.50%	2.00%
25	5 & Over	4.50%	1.96%
30		3.30%	1.62%
35		2.30%	1.11%
40		1.70%	0.77%
45		1.50%	0.60%
50		1.10%	0.51%
55		0.80%	0.51%
60		0.80%	0.51%
Ref		566	230
		207	113 x .85

Sample Ages	% of Active Members Becoming Disabled within Next Year			
	Police		Fire	
	Ordinary	Duty	Ordinary	Duty
25	0.06%	0.13%	0.07%	0.34%
30	0.07%	0.19%	0.08%	0.52%
35	0.08%	0.34%	0.09%	0.90%
40	0.11%	0.49%	0.12%	1.30%
45	0.16%	0.73%	0.18%	1.92%
50	0.47%	1.16%	0.53%	3.06%
55	0.73%	1.96%	0.82%	5.18%
60	0.83%	2.82%	0.94%	7.47%
Ref	105 x 0.75	90 x 0.85	105 x 0.85	90 x 2.25

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 (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 7.15%; the municipal bond rate is 2.85%; and the resulting Single Discount Rate is 7.15% 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 12.25% of payroll. Subsequent employer contributions were set at 19.86% of the closed group payroll including contributions for expenses. The actual employer rate will be determined by future funding valuations and is expected to be lower when based on open group payroll. The estimated employer contribution rate of 19.86% exceeds the estimated rate from the 2015 GASB report. The primary factor increasing this estimate was the administrative change related to splitting administrative expenses 50/50 between Component I and Component II plans. Member contributions were set at 6% for members hired before June 30, 2014 and at 8% for members hired after June 30, 2014. The voluntary member contributions were excluded for the projections (and assets). The VPIF was assumed to be 0.50% compound each year beginning in fiscal year 2016. The VPIF reduction under Section 9.5 of the plan was assumed not to occur.

Note that these projections are specifically used to determine the GASB discount rate and should not be interpreted as a funding projection or recommendation.

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

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

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	$ 119,587,163	$ 7,244,848	$ 15,445,883	$ 1,793,807	$ (2,590,262)	$ 21,894,275
2018	112,501,578	6,822,504	14,676,701	1,687,524	(2,582,782)	20,603,948
2019	105,184,992	6,386,531	13,788,676	1,577,775	(2,481,289)	19,271,693
2020	98,094,560	5,964,360	12,897,395	1,471,418	(2,352,230)	17,980,943
2021	91,452,077	5,568,773	12,065,861	1,371,781	(2,234,762)	16,771,652
2022	86,018,221	5,245,324	11,333,105	1,290,273	(2,086,146)	15,782,556
2023	81,553,020	4,979,539	10,649,797	1,223,295	(1,882,847)	14,969,784
2024	77,099,592	4,713,944	9,947,736	1,156,494	4,209,435	20,027,608 #
2025	72,918,112	4,464,530	9,293,577	1,093,772	4,095,782	18,947,661
2026	68,477,879	4,199,390	8,607,259	1,027,168	3,966,776	17,800,593
2027	63,989,749	3,931,368	7,915,753	959,846	3,834,164	16,641,131
2028	59,545,256	3,665,942	7,242,295	893,179	3,691,515	15,492,932
2029	55,186,617	3,405,618	6,602,197	827,799	3,531,273	14,366,887
2030	51,128,338	3,163,238	6,024,837	766,925	3,363,443	13,318,443
2031	47,150,485	2,925,588	5,471,267	707,257	3,186,593	12,290,705
2032	43,081,959	2,682,383	4,907,170	646,229	3,003,619	11,239,402
2033	39,065,305	2,442,148	4,354,441	585,980	2,818,803	10,201,371
2034	34,890,456	2,192,250	3,796,764	523,357	2,609,887	9,122,258
2035	30,841,030	1,949,683	3,272,702	462,615	2,390,386	8,075,386
2036	27,519,661	1,750,583	2,856,864	412,795	2,196,348	7,216,589
2037	24,537,491	1,571,596	2,493,965	368,062	2,011,655	6,445,278
2038	21,872,971	1,411,405	2,183,464	328,095	1,832,891	5,755,855
2039	19,014,987	1,239,334	1,860,425	285,225	1,631,142	5,016,126
2040	15,558,314	1,022,437	1,482,409	233,375	1,374,438	4,112,658
2041	12,297,212	810,098	1,141,782	184,458	1,116,255	3,252,593
2042	9,587,400	633,551	870,621	143,811	889,836	2,537,818
2043	7,407,648	491,136	660,848	111,115	699,358	1,962,457
2044	5,778,139	384,284	512,017	86,672	548,976	1,531,949
2045	4,366,178	291,262	383,763	65,493	417,962	1,158,480
2046	3,189,008	213,248	276,542	47,835	309,030	846,655
2047	2,302,651	154,065	197,022	34,540	225,795	611,422
2048	1,627,518	108,995	137,401	24,413	161,446	432,256
2049	1,113,687	74,372	92,255	16,705	112,243	295,574
2050	743,106	49,507	60,086	11,147	76,364	197,104
2051	496,265	33,111	39,729	7,444	51,396	131,680
2052	309,085	20,438	24,433	4,636	32,322	81,829
2053	180,949	11,900	13,952	2,714	19,275	47,841
2054	104,468	6,935	7,913	1,567	11,270	27,685
2055	44,318	3,005	3,209	665	4,929	11,808
2056	16,096	1,162	1,105	241	1,851	4,359
2057	4,587	367	287	69	555	1,278
2058	-	-	-	-	-	-
2059	-	-	-	-	-	-
2060	-	-	-	-	-	-
2061	-	-	-	-	-	-
2062	-	-	-	-	-	-
2063	-	-	-	-	-	-
2064	-	-	-	-	-	-
2065	-	-	-	-	-	-
2066	-	-	-	-	-	-

\# *Expenses assumed to be paid by employer.*

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
(Net of Voluntary Employee Contribution)

Fiscal Year Ending June 30,	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.15%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2017	$ 42,262,700	$ 21,894,275	$ 1,482,109	$ 1,793,807	$ 3,675,899	$ 64,556,959
2018	64,556,959	20,603,948	2,317,556	1,687,524	5,198,988	86,354,814
2019	86,354,814	19,271,693	3,172,173	1,577,775	6,684,559	107,561,118
2020	107,561,118	17,980,943	3,999,489	1,471,418	8,130,133	128,201,287
2021	128,201,287	16,771,652	4,776,059	1,371,781	9,539,637	148,364,736
2022	148,364,736	15,782,556	5,489,824	1,290,273	10,924,361	168,291,556
2023	168,291,556	14,969,784	6,281,351	1,223,295	12,295,118	188,051,811
2024	188,051,811	20,027,608	7,065,182	1,156,494	13,860,480	213,718,224
2025	213,718,224	18,947,661	7,888,791	1,093,772	15,630,955	239,314,277
2026	239,314,277	17,800,593	8,884,583	1,027,168	17,388,128	264,591,247
2027	264,591,247	16,641,131	10,112,624	959,846	19,113,917	289,273,824
2028	289,273,824	15,492,932	11,570,106	893,179	20,789,519	313,092,989
2029	313,092,989	14,366,887	13,257,150	827,799	22,396,054	335,770,981
2030	335,770,981	13,318,443	15,066,216	766,925	23,919,277	357,175,560
2031	357,175,560	12,290,705	16,961,084	707,257	25,349,121	377,147,044
2032	377,147,044	11,239,402	19,000,429	646,229	26,670,643	395,410,431
2033	395,410,431	10,201,371	21,112,421	585,980	27,867,923	411,781,324
2034	411,781,324	9,122,258	23,119,946	523,357	28,932,199	426,192,479
2035	426,192,479	8,075,386	24,957,169	462,615	29,863,404	438,711,485
2036	438,711,485	7,216,589	26,666,923	412,795	30,670,023	449,518,379
2037	449,518,379	6,445,278	28,287,788	368,062	31,360,244	458,668,050
2038	458,668,050	5,755,855	29,811,163	328,095	31,938,107	466,222,754
2039	466,222,754	5,016,126	31,351,492	285,225	32,399,670	472,001,832
2040	472,001,832	4,112,658	32,948,929	233,375	32,726,832	475,659,019
2041	475,659,019	3,252,593	34,482,631	184,458	32,905,939	477,150,462
2042	477,150,462	2,537,818	35,910,908	143,811	32,938,714	476,572,276
2043	476,572,276	1,962,457	37,089,373	111,115	32,836,906	474,171,151
2044	474,171,151	1,531,949	38,027,850	86,672	32,617,988	470,206,566
2045	470,206,566	1,158,480	38,875,796	65,493	32,292,352	464,716,108
2046	464,716,108	846,655	39,564,344	47,835	31,865,259	457,815,843
2047	457,815,843	611,422	40,060,133	34,540	31,346,674	449,679,266
2048	449,679,266	432,256	40,362,400	24,413	30,748,350	440,473,059
2049	440,473,059	295,574	40,501,226	16,705	30,080,698	430,331,400
2050	430,331,400	197,104	40,526,614	11,147	29,351,413	419,342,156
2051	419,342,156	131,680	40,413,332	7,444	28,567,494	407,620,554
2052	407,620,554	81,829	40,208,452	4,636	27,734,944	395,224,240
2053	395,224,240	47,841	39,898,689	2,714	26,858,364	382,229,042
2054	382,229,042	27,685	39,471,631	1,567	25,943,544	368,727,072
2055	368,727,072	11,808	38,942,900	665	24,996,202	354,791,517
2056	354,791,517	4,359	38,306,554	241	24,021,920	340,511,001
2057	340,511,001	1,278	37,592,181	69	23,025,859	325,945,888
2058	325,945,888	-	36,792,274	-	22,012,514	311,166,128
2059	311,166,128	-	35,913,435	-	20,986,637	296,239,329
2060	296,239,329	-	34,970,472	-	19,952,500	281,221,358
2061	281,221,358	-	33,965,452	-	18,914,024	266,169,930
2062	266,169,930	-	32,902,867	-	17,875,179	251,142,241
2063	251,142,241	-	31,785,729	-	16,839,947	236,196,459
2064	236,196,459	-	30,617,220	-	15,812,377	221,391,617
2065	221,391,617	-	29,401,673	-	14,796,536	206,786,479
2066	206,786,479	-	28,143,752	-	13,796,463	192,439,191

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)

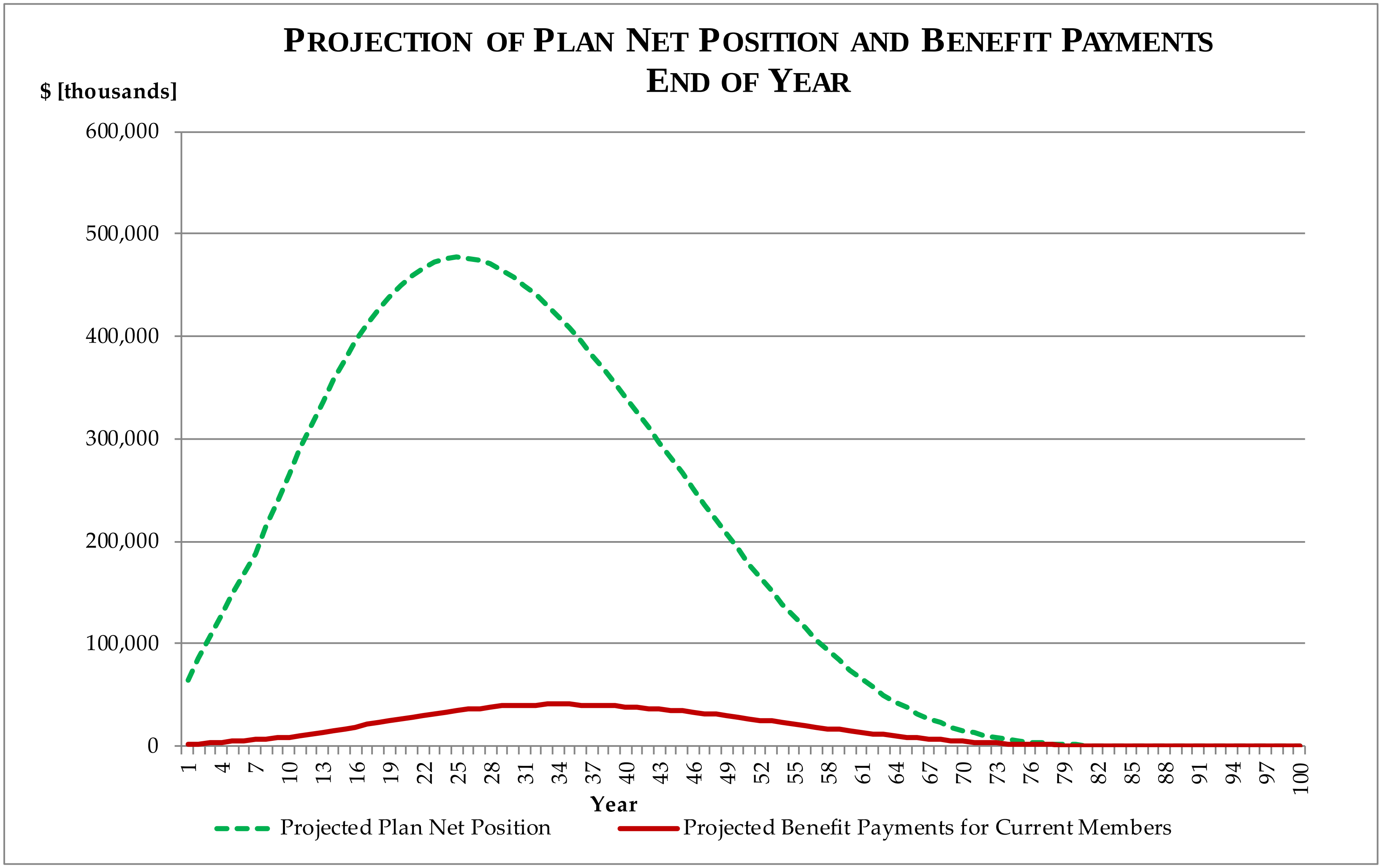
Fiscal Year Ending June 30,	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.15%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2067	$ 192,439,191	$ -	$ 26,848,819	$ -	$ 12,816,127	$ 178,406,499
2068	178,406,499	-	25,522,766	-	11,859,377	164,743,110
2069	164,743,110	-	24,172,054	-	10,929,899	151,500,955
2070	151,500,955	-	22,803,919	-	10,031,152	138,728,188
2071	138,728,188	-	21,426,267	-	9,166,300	126,468,221
2072	126,468,221	-	20,047,353	-	8,338,157	114,759,025
2073	114,759,025	-	18,675,551	-	7,549,145	103,632,619
2074	103,632,619	-	17,319,071	-	6,801,264	93,114,812
2075	93,114,812	-	15,985,762	-	6,096,084	83,225,133
2076	83,225,133	-	14,683,057	-	5,434,739	73,976,815
2077	73,976,815	-	13,417,737	-	4,817,939	65,377,017
2078	65,377,017	-	12,195,834	-	4,245,982	57,427,166
2079	57,427,166	-	11,022,874	-	3,718,777	50,123,069
2080	50,123,069	-	9,904,012	-	3,235,843	43,454,900
2081	43,454,900	-	8,843,719	-	2,796,320	37,407,501
2082	37,407,501	-	7,845,682	-	2,398,995	31,960,814
2083	31,960,814	-	6,912,759	-	2,042,333	27,090,389
2084	27,090,389	-	6,046,827	-	1,724,521	22,768,082
2085	22,768,082	-	5,248,917	-	1,443,509	18,962,673
2086	18,962,673	-	4,519,148	-	1,197,061	15,640,586
2087	15,640,586	-	3,856,747	-	982,803	12,766,643
2088	12,766,643	-	3,260,282	-	798,272	10,304,633
2089	10,304,633	-	2,727,804	-	640,946	8,217,775
2090	8,217,775	-	2,256,890	-	508,280	6,469,165
2091	6,469,165	-	1,844,638	-	397,738	5,022,265
2092	5,022,265	-	1,487,795	-	306,821	3,841,291
2093	3,841,291	-	1,182,816	-	233,097	2,891,572
2094	2,891,572	-	925,818	-	174,221	2,139,974
2095	2,139,974	-	712,612	-	127,972	1,555,335
2096	1,555,335	-	538,729	-	92,279	1,108,885
2097	1,108,885	-	399,499	-	65,250	774,636
2098	774,636	-	290,207	-	45,191	529,619
2099	529,619	-	206,250	-	30,622	353,990
2100	353,990	-	143,230	-	20,278	231,038
2101	231,038	-	97,063	-	13,109	147,084
2102	147,084	-	64,103	-	8,264	91,245
2103	91,245	-	41,214	-	5,076	55,108
2104	55,108	-	25,768	-	3,035	32,374
2105	32,374	-	15,646	-	1,765	18,493
2106	18,493	-	9,221	-	998	10,271
2107	10,271	-	5,277	-	549	5,542
2108	5,542	-	2,932	-	293	2,903
2109	2,903	-	1,584	-	152	1,471
2110	1,471	-	830	-	76	718
2111	718	-	420	-	37	334
2112	334	-	204	-	17	147
2113	147	-	94	-	7	60
2114	60	-	41	-	3	21
2115	21	-	22	-	1	0
2116	0	-	-	-	0	0

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	$ 42,262,700	$ 1,482,109	$ 1,482,109	$ -	$ 1,431,805	$ -	$ 1,431,805
2018	64,556,959	2,317,556	2,317,556	-	2,089,498	-	2,089,498
2019	86,354,814	3,172,173	3,172,173	-	2,669,171	-	2,669,171
2020	107,561,118	3,999,489	3,999,489	-	3,140,739	-	3,140,739
2021	128,201,287	4,776,059	4,776,059	-	3,500,297	-	3,500,297
2022	148,364,736	5,489,824	5,489,824	-	3,754,927	-	3,754,927
2023	168,291,556	6,281,351	6,281,351	-	4,009,626	-	4,009,626
2024	188,051,811	7,065,182	7,065,182	-	4,209,030	-	4,209,030
2025	213,718,224	7,888,791	7,888,791	-	4,386,084	-	4,386,084
2026	239,314,277	8,884,583	8,884,583	-	4,610,111	-	4,610,111
2027	264,591,247	10,112,624	10,112,624	-	4,897,180	-	4,897,180
2028	289,273,824	11,570,106	11,570,106	-	5,229,105	-	5,229,105
2029	313,092,989	13,257,150	13,257,150	-	5,591,753	-	5,591,753
2030	335,770,981	15,066,216	15,066,216	-	5,930,753	-	5,930,753
2031	357,175,560	16,961,084	16,961,084	-	6,231,134	-	6,231,134
2032	377,147,044	19,000,429	19,000,429	-	6,514,554	-	6,514,554
2033	395,410,431	21,112,421	21,112,421	-	6,755,650	-	6,755,650
2034	411,781,324	23,119,946	23,119,946	-	6,904,365	-	6,904,365
2035	426,192,479	24,957,169	24,957,169	-	6,955,688	-	6,955,688
2036	438,711,485	26,666,923	26,666,923	-	6,936,262	-	6,936,262
2037	449,518,379	28,287,788	28,287,788	-	6,866,879	-	6,866,879
2038	458,668,050	29,811,163	29,811,163	-	6,753,784	-	6,753,784
2039	466,222,754	31,351,492	31,351,492	-	6,628,790	-	6,628,790
2040	472,001,832	32,948,929	32,948,929	-	6,501,674	-	6,501,674
2041	475,659,019	34,482,631	34,482,631	-	6,350,269	-	6,350,269
2042	477,150,462	35,910,908	35,910,908	-	6,172,000	-	6,172,000
2043	476,572,276	37,089,373	37,089,373	-	5,949,176	-	5,949,176
2044	474,171,151	38,027,850	38,027,850	-	5,692,682	-	5,692,682
2045	470,206,566	38,875,796	38,875,796	-	5,431,281	-	5,431,281
2046	464,716,108	39,564,344	39,564,344	-	5,158,635	-	5,158,635
2047	457,815,843	40,060,133	40,060,133	-	4,874,735	-	4,874,735
2048	449,679,266	40,362,400	40,362,400	-	4,583,777	-	4,583,777
2049	440,473,059	40,501,226	40,501,226	-	4,292,620	-	4,292,620
2050	430,331,400	40,526,614	40,526,614	-	4,008,690	-	4,008,690
2051	419,342,156	40,413,332	40,413,332	-	3,730,737	-	3,730,737
2052	407,620,554	40,208,452	40,208,452	-	3,464,138	-	3,464,138
2053	395,224,240	39,898,689	39,898,689	-	3,208,073	-	3,208,073
2054	382,229,042	39,471,631	39,471,631	-	2,961,955	-	2,961,955
2055	368,727,072	38,942,900	38,942,900	-	2,727,279	-	2,727,279
2056	354,791,517	38,306,554	38,306,554	-	2,503,699	-	2,503,699
2057	340,511,001	37,592,181	37,592,181	-	2,293,055	-	2,293,055
2058	325,945,888	36,792,274	36,792,274	-	2,094,505	-	2,094,505
2059	311,166,128	35,913,435	35,913,435	-	1,908,049	-	1,908,049
2060	296,239,329	34,970,472	34,970,472	-	1,733,971	-	1,733,971
2061	281,221,358	33,965,452	33,965,452	-	1,571,758	-	1,571,758
2062	266,169,930	32,902,867	32,902,867	-	1,420,986	-	1,420,986
2063	251,142,241	31,785,729	31,785,729	-	1,281,138	-	1,281,138
2064	236,196,459	30,617,220	30,617,220	-	1,151,695	-	1,151,695
2065	221,391,617	29,401,673	29,401,673	-	1,032,171	-	1,032,171
2066	206,786,479	28,143,752	28,143,752	-	922,081	-	922,081

SINGLE DISCOUNT RATE DEVELOPMENT
PRESENT VALUES OF PROJECTED BENEFITS
END OF YEAR (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	$ 192,439,191	$ 26,848,819	$ 26,848,819	$ -	$ 820,957	$ -	$ 820,957
2068	178,406,499	25,522,766	25,522,766	-	728,334	-	728,334
2069	164,743,110	24,172,054	24,172,054	-	643,761	-	643,761
2070	151,500,955	22,803,919	22,803,919	-	566,798	-	566,798
2071	138,728,188	21,426,267	21,426,267	-	497,019	-	497,019
2072	126,468,221	20,047,353	20,047,353	-	434,002	-	434,002
2073	114,759,025	18,675,551	18,675,551	-	377,325	-	377,325
2074	103,632,619	17,319,071	17,319,071	-	326,569	-	326,569
2075	93,114,812	15,985,762	15,985,762	-	281,314	-	281,314
2076	83,225,133	14,683,057	14,683,057	-	241,147	-	241,147
2077	73,976,815	13,417,737	13,417,737	-	205,661	-	205,661
2078	65,377,017	12,195,834	12,195,834	-	174,459	-	174,459
2079	57,427,166	11,022,874	11,022,874	-	147,158	-	147,158
2080	50,123,069	9,904,012	9,904,012	-	123,398	-	123,398
2081	43,454,900	8,843,719	8,843,719	-	102,835	-	102,835
2082	37,407,501	7,845,682	7,845,682	-	85,142	-	85,142
2083	31,960,814	6,912,759	6,912,759	-	70,012	-	70,012
2084	27,090,389	6,046,827	6,046,827	-	57,155	-	57,155
2085	22,768,082	5,248,917	5,248,917	-	46,303	-	46,303
2086	18,962,673	4,519,148	4,519,148	-	37,205	-	37,205
2087	15,640,586	3,856,747	3,856,747	-	29,633	-	29,633
2088	12,766,643	3,260,282	3,260,282	-	23,378	-	23,378
2089	10,304,633	2,727,804	2,727,804	-	18,255	-	18,255
2090	8,217,775	2,256,890	2,256,890	-	14,096	-	14,096
2091	6,469,165	1,844,638	1,844,638	-	10,752	-	10,752
2092	5,022,265	1,487,795	1,487,795	-	8,093	-	8,093
2093	3,841,291	1,182,816	1,182,816	-	6,005	-	6,005
2094	2,891,572	925,818	925,818	-	4,387	-	4,387
2095	2,139,974	712,612	712,612	-	3,151	-	3,151
2096	1,555,335	538,729	538,729	-	2,223	-	2,223
2097	1,108,885	399,499	399,499	-	1,539	-	1,539
2098	774,636	290,207	290,207	-	1,043	-	1,043
2099	529,619	206,250	206,250	-	692	-	692
2100	353,990	143,230	143,230	-	448	-	448
2101	231,038	97,063	97,063	-	284	-	284
2102	147,084	64,103	64,103	-	175	-	175
2103	91,245	41,214	41,214	-	105	-	105
2104	55,108	25,768	25,768	-	61	-	61
2105	32,374	15,646	15,646	-	35	-	35
2106	18,493	9,221	9,221	-	19	-	19
2107	10,271	5,277	5,277	-	10	-	10
2108	5,542	2,932	2,932	-	5	-	5
2109	2,903	1,584	1,584	-	3	-	3
2110	1,471	830	830	-	1	-	1
2111	718	420	420	-	1	-	1
2112	334	204	204	-	0	-	0
2113	147	94	94	-	0	-	0
2114	60	41	41	-	0	-	0
2115	21	22	22	-	0	-	0
2116	0	-	-	-	-	-	-
				Totals	$ 215,108,959	$ -	$ 215,108,959


PROJECTION OF PLAN NET POSITION AND BENEFIT PAYMENTS
END OF YEAR
$ [thousands]
600,000
500,000
400,000
300,000
200,000
100,000
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 (COLA)	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 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 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.
PERSIA	Public Employees Retirement System Investment Act.
POA	The 8th Amended Plan for the Adjustment of the Debt of the City of Detroit.
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.
Single Discount Rate (SDR)	The discount rate used in determining the Total Pension Liability.
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.
Variable Pension Improvement Factor (VPIF)	An increase on the Component I Retirement Allowance of 1% compound subject to plan restrictions.

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November 23, 2016

Mr. David Cetlinski
Executive Secretary
The Police and Fire Retirement System of the
City of Detroit
One Detroit Center
500 Woodward Avenue, Suite 3000
Detroit, MI 48226-3534

Dear Dave:

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

Sincerely,

Kenneth G. Alberts

KGA:sc
Enclosure

cc: Cynthia Thomas, City of Detroit Retirement Systems
David T. Kausch, GRS
Judith A. Kermans, GRS
Brian B. Murphy, GRS