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, 2015

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

February 26, 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.

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, 2014. The total pension liability was rolled-forward from the valuation date to the plan year ending June 30, 2015 using generally accepted actuarial principles. The asset information as of June 30, 2015 was provided by the System. This information was checked for internal consistency, but it was not otherwise audited by GRS. GRS is not responsible for the accuracy of the member or financial data. Since the effective date of this plan is July 1, 2014, the Total Pension Liability is zero at the beginning of the year.

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 7.47% net of investment expenses as of June 30, 2015, up from 7.20% net of investment expenses as of June 30, 2014. Due to time constraints, scope of project, and available data, we are unable to review this assumption for reasonableness.

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, 2015.

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 actuaries are independent of the plan sponsor.

David T. Kausch and Brian B. Murphy 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 Brian B Murphy
Brian B. Murphy, FSA, EA, FCA, MAAA

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SECTION A

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY
AS OF JUNE 30, 2015

Actuarial Valuation Date		June 30, 2014
Pension Plan's Fiscal Year Ending Date (Measurement Date & Reporting Date)		June 30, 2015
Membership		
Number of		
- Retirees and Beneficiaries		-
- DROP Members		-
- Inactive, Nonretired Members		-
- Active Members		2,608
- Total		2,608
Covered Payroll (excluding DROP)	$	132,566,687
Net Pension Liability		
Total Pension Liability	$	24,736,154
Plan Fiduciary Net Position		21,327,464
Net Pension Liability	$	3,408,690
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		86.22%
Net Pension Liability as a Percentage of Covered Payroll		2.57%
Development of the Single Discount Rate as of June 30, 2015		
Single Discount Rate		7.47%
Long-Term Expected Rate of Return		7.47%
Long-Term Municipal Bond Rate *		3.80%
Last Year Ending June 30 in the 2016 to 2115 Projection Period for which Projected Benefit Payments are Fully Funded		2115

**Source:* *"State & local bonds" rate from Federal Reserve statistical release (H.15) as of June 25, 2015. The statistical release describes this rate as "Bond Buyer Index, general obligation, 20 years to maturity, mixed quality." In describing this index, the Bond Buyer notes that the bonds' average credit quality is roughly equivalent to Moody's Investors Service's Aa2 rating and Standard & Poor's Corp.'s AA.*

DISCUSSION

Implementation of GASB Statement No. 67

The System is implementing GASB Statement No. 67 for the plan year ending June 30, 2015 (the measurement date). This is the first plan year. Therefore, since credited service begins July 1, 2014, the TPL is zero at the beginning of the year.

Changes to the Actuarial Assumptions

The SDR changed to 7.47% at the end of the year from 7.20% at the beginning of the year.

Other economic and demographic assumptions are the same as those used in the funding valuation as of June 30, 2014 and are subject to approval by the Boards. The assumptions were chosen for consistency with the Component II assumptions adopted by the Boards and modified, as necessary, to account for differences in benefit eligibility between Component II and Component I. The wage inflation assumption was 2.0% for five years, 2.5% for the next five years and 3.0% thereafter and is consistent with assumptions used when the plan was designed.

Changes to the Plan Provisions

Fiscal Year 2015 was the first year of existence for the Component I Plan (Hybrid Plan). Therefore, the Total Pension Liability was $0 at the beginning of the year. There were no changes in benefit provisions during the year affecting the Total Pension Liability.

Funding

Employee contributions are initially set to 6.0% but can be increased if necessary to maintain funding levels at 100%. Employer contributions are initially set at 12.25% of payroll beginning November 6, 2014. 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. Beginning in Fiscal 2024, employer contributions will be actuarially determined. 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, 2015 to model the potential average COLA over time. In the notes section we indicate the TPL based on 1) 0% VPIF and 2) 1% compound VPIF beginning July 1, 2015.

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 are not available and are not included. These balances are 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, 2014 rolled to the plan year end of June 30, 2015.

Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating (which is published by the Federal Reserve) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.47%; the municipal bond rate is 3.80% (based on the weekly rate closest to but not later than the plan year end of the "state & local bonds" rate from Federal Reserve statistical release (H.15)); and the resulting Single Discount Rate is 7.47% as of June 30, 2015.

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%.
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 (86.22% as of June 30, 2015). 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.

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, 2015

Assets		
Cash and Deposits	$	22,037,558
Total Assets	$	22,037,558
Liabilities		
Payables		
Accounts Payable	$	710,094
Total Liabilities	$	710,094
Total Fund Balances	$	21,327,464

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

Additions		
Contributions		
Employer	$	14,606,971
Member Pension Fund Contributions		7,390,335
Voluntary Member Contributions		14,370
Total Contributions	$	22,011,676
Investment Income		
Net Appreciation in Fair Value of Investments	$	-
Interest and Dividends		21,019
Less Investment Expense		-
Net Investment Income	$	21,019
Other	$	-
Total Additions	$	22,032,695
Deductions		
Benefit Payments, including Refunds of Employee Contributions	$	-
Pension Plan Administrative Expense		685,677
Other		19,554
Total Deductions	$	705,231
Net Increase in Net Position	$	21,327,464
Total Fund Balances Beginning of Year	$	-
Total Fund Balances End of Year	$	21,327,464

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,	2015
Total Pension Liability	
Service Cost	$ 24,835,814
Interest on the Total Pension Liability (and Service Cost)	894,089
Benefit Changes	-
Difference between Expected and Actual Experience	-
Assumption Changes	(1,008,119)
Benefit Payments*	-
Refunds	-
Voluntary Contributions Benefit Payments and Refunds	-
Voluntary Employee Contributions	14,370
Net Change in Total Pension Liability	24,736,154
Total Pension Liability - Beginning	-
Total Pension Liability - Ending (a)	$ 24,736,154
Plan Fiduciary Net Position	
Employer Contributions	$ 14,606,971
Employee Contributions	7,390,335
Pension Plan Net Investment Income	21,019
Benefit Payments	(19,554)
Refunds	-
Pension Plan Administrative Expense	(685,677)
Voluntary Employee Contributions	14,370
Net Change in Plan Fiduciary Net Position	21,327,464
Plan Fiduciary Net Position - Beginning	-
Plan Fiduciary Net Position - Ending (b)	$ 21,327,464
Net Pension Liability - Ending (a) - (b)	3,408,690
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	86.22 %
Covered-Employee Payroll (excluding DROP)	$ 132,566,687
Net Pension Liability as a Percentage of Covered-Employee Payroll	2.57 %

* *We were informed that there were no retirees during the year. Therefore any benefit payments listed in the assets did not result in a reduction of the Plan's Total Pension Liability.*

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%

* *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 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%

* *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

Employer Contribution: 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.

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

A Single Discount Rate of 7.47% was used to measure the total pension liability as of June 30, 2015. This Single Discount Rate was based on the expected rate of return on pension plan investments of 7.47% 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 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 12.72% 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 7.47%, 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 6.47%	Current Single Discount Rate Assumption 7.47%	1% Increase 8.47%
Total Pension Liability (TPL)	$28,777,327	$24,736,154	$21,478,061
Net Position Restricted for Pensions	21,327,464	21,327,464	21,327,464
Net Pension Liability (NPL)	$ 7,449,863	$ 3,408,690	$ 150,597

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	-
DROP Members	-
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	-
Active Plan Members	2,608
Total Plan Members	2,608

Additional information regarding the plan population may be found in the June 30, 2014 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:1) 0% and 2) 1% beginning July 1, 2015 (the maximum amount payable).

VPIF ASSUMPTION

	Minimum 0%	Current Assumption 0.5%	Maximum 1%
Total Pension Liability (TPL)	$23,569,508	$24,736,154	$26,013,909
Net Position Restricted for Pensions	21,327,464	21,327,464	21,327,464
Net Pension Liability (NPL)	$ 2,242,044	$ 3,408,690	$ 4,686,445

SECTION E

SUMMARY OF BENEFITS

SUMMARY OF BENEFIT PROVISIONS (JULY 1, 2014)

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 members 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 1/3rd 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, 2015 TPL:

The investment return rate used in the valuation was 7.47% per year, compounded annually (net after expenses). This is a prescribed assumption set by the Retirement System. We did not receive supporting information necessary to assess the reasonableness of this assumption and, therefore, made no such assessment.

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 (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: End of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year beginning the day after 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. 10% of administrative expenses were allocated to Component I and 90% 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 (CONTINUED)

DROP Assumption:	All active members not in the DROP are assumed to have a 40% chance of retiring or entering the DROP in their first five years of retirement eligibility with a 60% chance of entering the DROP.
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 requirements in Component I.
Workers Compensation Offset:	No Workers compensation offsets are assumed for duty disability benefits.
DROP Account:	DROP account balances are not reported. No liability is included for DROP account balances.
Class Codes:	For valuation purposes, members are categorized as DPOA, DFFA or LSA based on class codes provided by the Retirement System and are primarily used in the valuation to determine deferred retirement commencement.
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.

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

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. 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 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 2014	Future Life Expectancy (years)	
	Males	Females
45	39.15	42.53
50	34.17	37.47
55	29.40	32.57
60	24.86	27.80
65	20.53	23.20
70	16.49	18.83
75	12.79	14.82
80	9.53	11.24

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

	Percent of Eligible Active Members Retiring Within Next Year	
Age	**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 7.47%; the municipal bond rate is 3.80%; and the resulting Single Discount Rate is 7.47% as of June 30, 2015.

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, 2015, 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 12.72% of 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. Member contributions were set at 6% for the entire period. 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, 2015, the benefit payments reflect the plan provisions in force as of June 30, 2015.

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
2016	115,618,076	$ 6,937,085	$ 13,494,922	$ 346,854	$ 321,438	$ 21,100,299
2017	108,077,372	6,484,642	12,818,160	324,232	97,086	19,724,120
2018	101,273,966	6,076,438	12,140,593	303,822	(38,354)	18,482,499
2019	93,912,430	5,634,746	11,318,479	281,737	(95,943)	17,139,018
2020	86,514,047	5,190,843	10,451,610	259,542	(113,181)	15,788,814
2021	80,383,432	4,823,006	9,745,957	241,150	(140,137)	14,669,976
2022	75,470,974	4,528,258	9,134,026	226,413	(115,244)	13,773,453
2023	71,603,592	4,296,216	8,587,624	214,811	(30,995)	13,067,656
2024	67,776,691	4,066,601	8,033,129	203,330	385,795	12,688,855
2025	63,874,149	3,832,449	7,479,610	191,622	454,558	11,958,238
2026	59,988,239	3,599,294	6,927,945	179,965	523,531	11,230,735
2027	55,896,854	3,353,811	6,352,050	167,691	591,212	10,464,764
2028	51,702,198	3,102,132	5,774,472	155,107	647,748	9,679,459
2029	47,535,259	2,852,116	5,222,345	142,606	682,277	8,899,343
2030	43,611,969	2,616,718	4,719,208	130,836	698,080	8,164,842
2031	39,709,683	2,382,581	4,231,081	119,129	701,481	7,434,273
2032	35,714,634	2,142,878	3,732,530	107,144	703,785	6,686,337
2033	31,817,943	1,909,077	3,250,213	95,454	702,073	5,956,816
2034	27,829,395	1,669,764	2,771,164	83,488	685,682	5,210,097
2035	23,918,721	1,435,123	2,317,737	71,756	653,342	4,477,958
2036	20,681,417	1,240,885	1,955,270	62,044	613,685	3,871,884
2037	17,826,560	1,069,594	1,644,286	53,480	570,051	3,337,411
2038	15,341,082	920,465	1,387,247	46,023	518,356	2,872,090
2039	12,721,191	763,271	1,123,521	38,164	456,649	2,381,606
2040	9,965,334	597,920	853,220	29,896	384,630	1,865,666
2041	7,771,867	466,312	649,280	23,316	316,107	1,455,015
2042	5,975,979	358,559	488,140	17,928	254,170	1,118,797
2043	4,551,659	273,100	365,874	13,655	199,514	852,142
2044	3,505,058	210,303	280,018	10,515	155,365	656,202
2045	2,620,482	157,229	207,644	7,861	117,861	490,595
2046	1,899,658	113,979	148,915	5,699	87,052	355,646
2047	1,373,398	82,404	106,977	4,120	63,621	257,122
2048	967,262	58,036	74,706	2,902	45,443	181,087
2049	672,226	40,334	51,310	2,017	32,191	125,851
2050	456,375	27,382	34,397	1,369	22,292	85,440
2051	305,051	18,303	22,720	915	15,172	57,110
2052	194,534	11,672	14,375	584	9,789	36,420
2053	111,102	6,666	8,001	333	5,800	20,800
2054	62,495	3,750	4,417	187	3,347	11,700
2055	24,380	1,463	1,658	73	1,370	4,564
2056	5,504	330	373	17	310	1,030
2057	-	-	-	-	-	-
2058	-	-	-	-	-	-
2059	-	-	-	-	-	-
2060	-	-	-	-	-	-
2061	-	-	-	-	-	-
2062	-	-	-	-	-	-
2063	-	-	-	-	-	-
2064	-	-	-	-	-	-
2065	-	-	-	-	-	-

 # 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 7.47%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2016	$ 21,313,094	$ 21,100,299	$ 1,103,978	$ 346,854	$ 2,312,779	$ 43,275,340
2017	43,275,340	19,724,120	1,859,350	324,232	3,876,009	64,691,887
2018	64,691,887	18,482,499	2,614,830	303,822	5,403,325	85,659,058
2019	85,659,058	17,139,018	3,385,591	281,737	6,892,838	106,023,587
2020	106,023,587	15,788,814	4,116,693	259,542	8,338,545	125,774,711
2021	125,774,711	14,669,976	4,750,158	241,150	9,750,359	145,203,738
2022	145,203,738	13,773,453	5,337,695	226,413	11,147,816	164,560,899
2023	164,560,899	13,067,656	5,971,218	214,811	12,545,099	183,987,624
2024	183,987,624	12,688,855	6,588,204	203,330	13,960,174	203,845,119
2025	203,845,119	11,958,238	7,253,601	191,622	15,392,756	223,750,891
2026	223,750,891	11,230,735	8,034,459	179,965	16,824,822	243,592,024
2027	243,592,024	10,464,764	9,054,282	167,691	18,241,907	263,076,722
2028	263,076,722	9,679,459	10,342,047	155,107	19,621,840	281,880,868
2029	281,880,868	8,899,343	11,864,436	142,606	20,942,519	299,715,688
2030	299,715,688	8,164,842	13,490,851	130,836	22,188,619	316,447,461
2031	316,447,461	7,434,273	15,209,949	119,129	23,349,065	331,901,721
2032	331,901,721	6,686,337	17,113,107	107,144	24,406,702	345,774,509
2033	345,774,509	5,956,816	19,098,911	95,454	25,343,837	357,880,797
2034	357,880,797	5,210,097	20,945,258	83,488	26,153,509	368,215,657
2035	368,215,657	4,477,958	22,619,382	71,756	26,837,698	376,840,175
2036	376,840,175	3,871,884	24,166,551	62,044	27,403,330	383,886,794
2037	383,886,794	3,337,411	25,612,437	53,480	27,857,392	389,415,680
2038	389,415,680	2,872,090	26,947,764	46,023	28,204,631	393,498,613
2039	393,498,613	2,381,606	28,298,376	38,164	28,442,387	395,986,066
2040	395,986,066	1,865,666	29,647,291	29,896	28,560,105	396,734,651
2041	396,734,651	1,455,015	30,797,596	23,316	28,559,014	395,927,768
2042	395,927,768	1,118,797	31,784,925	17,928	28,450,393	393,694,105
2043	393,694,105	852,142	32,588,035	13,655	28,244,459	390,189,016
2044	390,189,016	656,202	33,225,067	10,515	27,952,193	385,561,828
2045	385,561,828	490,595	33,759,754	7,861	27,580,955	379,865,763
2046	379,865,763	355,646	34,138,374	5,699	27,136,701	373,214,036
2047	373,214,036	257,122	34,386,392	4,120	26,627,165	365,707,810
2048	365,707,810	181,087	34,496,446	2,902	26,059,669	357,449,219
2049	357,449,219	125,851	34,479,928	2,017	25,441,365	348,534,490
2050	348,534,490	85,440	34,395,819	1,369	24,777,061	338,999,803
2051	338,999,803	57,110	34,210,144	915	24,070,608	328,916,462
2052	328,916,462	36,420	33,946,676	584	23,326,299	318,331,921
2053	318,331,921	20,800	33,601,281	333	22,547,738	307,298,845
2054	307,298,845	11,700	33,164,787	187	21,739,248	295,884,820
2055	295,884,820	4,564	32,656,616	73	20,905,001	284,137,696
2056	284,137,696	1,030	32,060,560	17	20,049,226	272,127,375
2057	272,127,375	-	31,400,602	-	19,176,223	259,902,996
2058	259,902,996	-	30,676,758	-	18,289,611	247,515,849
2059	247,515,849	-	29,886,967	-	17,393,258	235,022,140
2060	235,022,140	-	29,041,520	-	16,490,987	222,471,607
2061	222,471,607	-	28,144,227	-	15,586,372	209,913,753
2062	209,913,753	-	27,197,004	-	14,683,042	197,399,791
2063	197,399,791	-	26,202,748	-	13,784,716	184,981,759
2064	184,981,759	-	25,164,892	-	12,895,155	172,712,022
2065	172,712,022	-	24,087,169	-	12,018,134	160,642,987

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

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

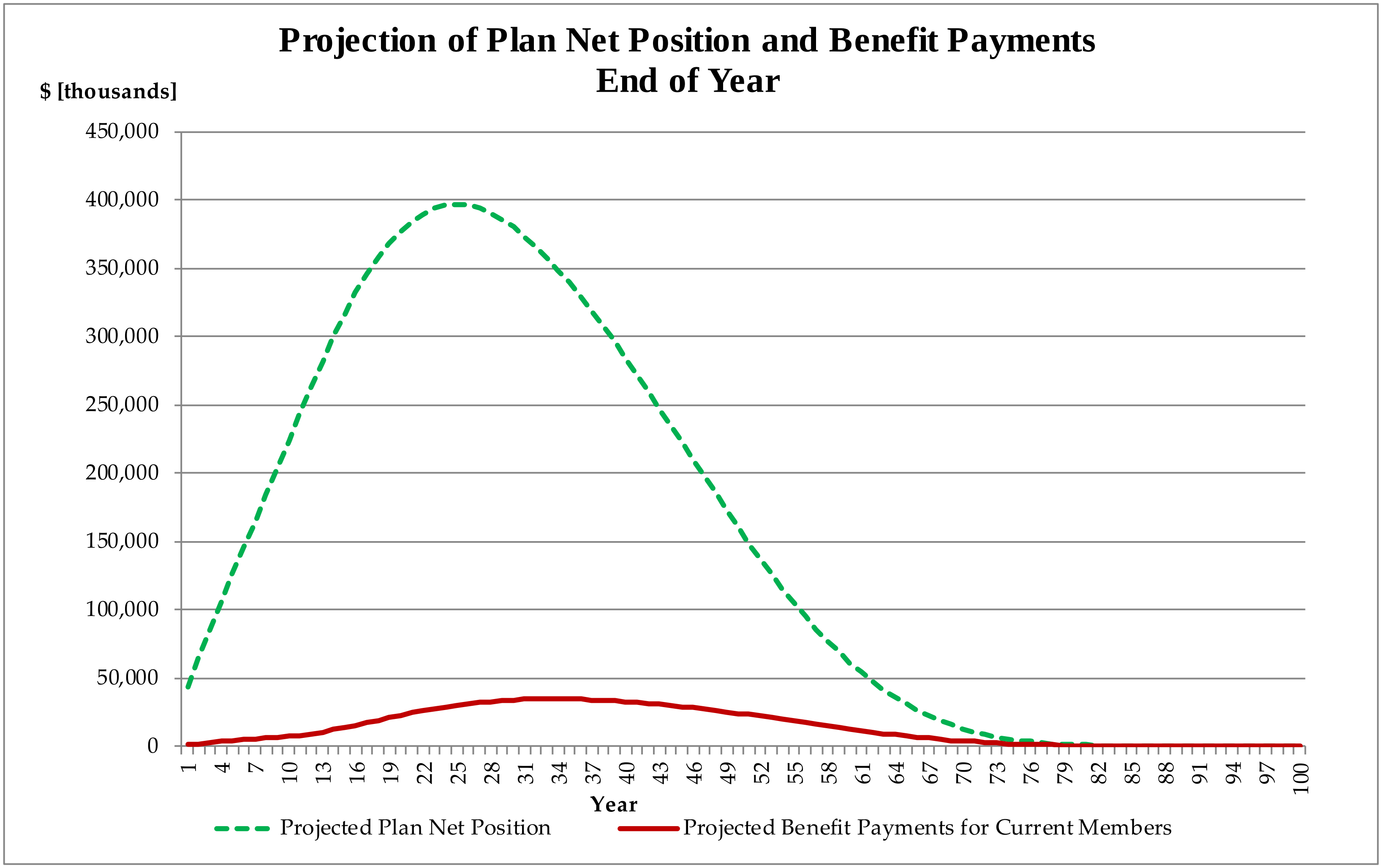
Fiscal Year Ending June 30,	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.47%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2066	$ 160,642,987	$ -	$ 22,974,123	$ -	$ 11,157,400	$ 148,826,263
2067	148,826,263	-	21,830,992	-	10,316,618	137,311,890
2068	137,311,890	-	20,663,555	-	9,499,313	126,147,649
2069	126,147,649	-	19,478,168	-	8,708,821	115,378,302
2070	115,378,302	-	18,281,888	-	7,948,227	105,044,641
2071	105,044,641	-	17,082,360	-	7,220,298	95,182,579
2072	95,182,579	-	15,887,547	-	6,527,425	85,822,457
2073	85,822,457	-	14,705,476	-	5,871,579	76,988,560
2074	76,988,560	-	13,543,921	-	5,254,290	68,698,928
2075	68,698,928	-	12,410,202	-	4,676,636	60,965,363
2076	60,965,363	-	11,311,111	-	4,139,251	53,793,502
2077	53,793,502	-	10,252,701	-	3,642,332	47,183,133
2078	47,183,133	-	9,240,188	-	3,185,674	41,128,619
2079	41,128,619	-	8,278,105	-	2,768,689	35,619,203
2080	35,619,203	-	7,370,379	-	2,390,428	30,639,252
2081	30,639,252	-	6,520,097	-	2,049,612	26,168,767
2082	26,168,767	-	5,729,445	-	1,744,666	22,183,988
2083	22,183,988	-	4,999,723	-	1,473,767	18,658,032
2084	18,658,032	-	4,331,246	-	1,234,896	15,561,682
2085	15,561,682	-	3,723,533	-	1,025,888	12,864,037
2086	12,864,037	-	3,175,266	-	844,483	10,533,254
2087	10,533,254	-	2,684,407	-	688,377	8,537,224
2088	8,537,224	-	2,248,464	-	555,263	6,844,023
2089	6,844,023	-	1,864,549	-	442,862	5,422,335
2090	5,422,335	-	1,529,490	-	348,951	4,241,796
2091	4,241,796	-	1,239,891	-	271,386	3,273,291
2092	3,273,291	-	992,250	-	208,122	2,489,162
2093	2,489,162	-	783,022	-	157,221	1,863,362
2094	1,863,362	-	608,589	-	116,872	1,371,645
2095	1,371,645	-	465,304	-	85,396	991,736
2096	991,736	-	349,524	-	61,263	703,476
2097	703,476	-	257,611	-	43,101	488,966
2098	488,966	-	186,031	-	29,703	332,637
2099	332,637	-	131,448	-	20,027	221,216
2100	221,216	-	90,766	-	13,196	143,645
2101	143,645	-	61,165	-	8,487	90,967
2102	90,967	-	40,166	-	5,322	56,123
2103	56,123	-	25,674	-	3,251	33,700
2104	33,700	-	15,957	-	1,932	19,675
2105	19,675	-	9,629	-	1,117	11,162
2106	11,162	-	5,638	-	627	6,152
2107	6,152	-	3,203	-	342	3,291
2108	3,291	-	1,764	-	181	1,708
2109	1,708	-	945	-	93	856
2110	856	-	490	-	46	413
2111	413	-	245	-	22	190
2112	190	-	118	-	10	82
2113	82	-	54	-	4	32
2114	32	-	33	-	1	0
2115	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)
2016	$ 21,313,094	$ 1,103,978	$ 1,103,978	$ -	$ 1,064,920	$ -	$ 1,064,920
2017	43,275,340	1,859,350	1,859,350	-	1,668,900	-	1,668,900
2018	64,691,887	2,614,830	2,614,830	-	2,183,863	-	2,183,863
2019	85,659,058	3,385,591	3,385,591	-	2,631,050	-	2,631,050
2020	106,023,587	4,116,693	4,116,693	-	2,976,843	-	2,976,843
2021	125,774,711	4,750,158	4,750,158	-	3,196,158	-	3,196,158
2022	145,203,738	5,337,695	5,337,695	-	3,341,847	-	3,341,847
2023	164,560,899	5,971,218	5,971,218	-	3,478,633	-	3,478,633
2024	183,987,624	6,588,204	6,588,204	-	3,571,293	-	3,571,293
2025	203,845,119	7,253,601	7,253,601	-	3,658,683	-	3,658,683
2026	223,750,891	8,034,459	8,034,459	-	3,770,861	-	3,770,861
2027	243,592,024	9,054,282	9,054,282	-	3,954,127	-	3,954,127
2028	263,076,722	10,342,047	10,342,047	-	4,202,579	-	4,202,579
2029	281,880,868	11,864,436	11,864,436	-	4,486,103	-	4,486,103
2030	299,715,688	13,490,851	13,490,851	-	4,746,508	-	4,746,508
2031	316,447,461	15,209,949	15,209,949	-	4,979,381	-	4,979,381
2032	331,901,721	17,113,107	17,113,107	-	5,213,019	-	5,213,019
2033	345,774,509	19,098,911	19,098,911	-	5,413,545	-	5,413,545
2034	357,880,797	20,945,258	20,945,258	-	5,524,228	-	5,524,228
2035	368,215,657	22,619,382	22,619,382	-	5,551,104	-	5,551,104
2036	376,840,175	24,166,551	24,166,551	-	5,518,564	-	5,518,564
2037	383,886,794	25,612,437	25,612,437	-	5,442,207	-	5,442,207
2038	389,415,680	26,947,764	26,947,764	-	5,327,944	-	5,327,944
2039	393,498,613	28,298,376	28,298,376	-	5,206,084	-	5,206,084
2040	395,986,066	29,647,291	29,647,291	-	5,075,133	-	5,075,133
2041	396,734,651	30,797,596	30,797,596	-	4,905,598	-	4,905,598
2042	395,927,768	31,784,925	31,784,925	-	4,710,956	-	4,710,956
2043	393,694,105	32,588,035	32,588,035	-	4,494,267	-	4,494,267
2044	390,189,016	33,225,067	33,225,067	-	4,263,628	-	4,263,628
2045	385,561,828	33,759,754	33,759,754	-	4,031,117	-	4,031,117
2046	379,865,763	34,138,374	34,138,374	-	3,792,990	-	3,792,990
2047	373,214,036	34,386,392	34,386,392	-	3,554,989	-	3,554,989
2048	365,707,810	34,496,446	34,496,446	-	3,318,477	-	3,318,477
2049	357,449,219	34,479,928	34,479,928	-	3,086,338	-	3,086,338
2050	348,534,490	34,395,819	34,395,819	-	2,864,808	-	2,864,808
2051	338,999,803	34,210,144	34,210,144	-	2,651,292	-	2,651,292
2052	328,916,462	33,946,676	33,946,676	-	2,448,007	-	2,448,007
2053	318,331,921	33,601,281	33,601,281	-	2,254,675	-	2,254,675
2054	307,298,845	33,164,787	33,164,787	-	2,070,704	-	2,070,704
2055	295,884,820	32,656,616	32,656,616	-	1,897,251	-	1,897,251
2056	284,137,696	32,060,560	32,060,560	-	1,733,156	-	1,733,156
2057	272,127,375	31,400,602	31,400,602	-	1,579,491	-	1,579,491
2058	259,902,996	30,676,758	30,676,758	-	1,435,825	-	1,435,825
2059	247,515,849	29,886,967	29,886,967	-	1,301,627	-	1,301,627
2060	235,022,140	29,041,520	29,041,520	-	1,176,892	-	1,176,892
2061	222,471,607	28,144,227	28,144,227	-	1,061,254	-	1,061,254
2062	209,913,753	27,197,004	27,197,004	-	954,254	-	954,254
2063	197,399,791	26,202,748	26,202,748	-	855,466	-	855,466
2064	184,981,759	25,164,892	25,164,892	-	764,475	-	764,475
2065	172,712,022	24,087,169	24,087,169	-	680,874	-	680,874

SINGLE DISCOUNT RATE DEVELOPMENT
PRESENT VALUES OF PROJECTED BENEFITS (CONCLUDED)
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)
2066	$ 160,642,987	$ 22,974,123	$ 22,974,123	$ -	$ 604,273	$ -	$ 604,273
2067	148,826,263	21,830,992	21,830,992	-	534,294	-	534,294
2068	137,311,890	20,663,555	20,663,555	-	470,570	-	470,570
2069	126,147,649	19,478,168	19,478,168	-	412,744	-	412,744
2070	115,378,302	18,281,888	18,281,888	-	360,467	-	360,467
2071	105,044,641	17,082,360	17,082,360	-	313,405	-	313,405
2072	95,182,579	15,887,547	15,887,547	-	271,223	-	271,223
2073	85,822,457	14,705,476	14,705,476	-	233,594	-	233,594
2074	76,988,560	13,543,921	13,543,921	-	200,189	-	200,189
2075	68,698,928	12,410,202	12,410,202	-	170,682	-	170,682
2076	60,965,363	11,311,111	11,311,111	-	144,753	-	144,753
2077	53,793,502	10,252,701	10,252,701	-	122,088	-	122,088
2078	47,183,133	9,240,188	9,240,188	-	102,383	-	102,383
2079	41,128,619	8,278,105	8,278,105	-	85,347	-	85,347
2080	35,619,203	7,370,379	7,370,379	-	70,707	-	70,707
2081	30,639,252	6,520,097	6,520,097	-	58,202	-	58,202
2082	26,168,767	5,729,445	5,729,445	-	47,589	-	47,589
2083	22,183,988	4,999,723	4,999,723	-	38,642	-	38,642
2084	18,658,032	4,331,246	4,331,246	-	31,148	-	31,148
2085	15,561,682	3,723,533	3,723,533	-	24,917	-	24,917
2086	12,864,037	3,175,266	3,175,266	-	19,771	-	19,771
2087	10,533,254	2,684,407	2,684,407	-	15,553	-	15,553
2088	8,537,224	2,248,464	2,248,464	-	12,122	-	12,122
2089	6,844,023	1,864,549	1,864,549	-	9,353	-	9,353
2090	5,422,335	1,529,490	1,529,490	-	7,139	-	7,139
2091	4,241,796	1,239,891	1,239,891	-	5,385	-	5,385
2092	3,273,291	992,250	992,250	-	4,010	-	4,010
2093	2,489,162	783,022	783,022	-	2,945	-	2,945
2094	1,863,362	608,589	608,589	-	2,129	-	2,129
2095	1,371,645	465,304	465,304	-	1,515	-	1,515
2096	991,736	349,524	349,524	-	1,059	-	1,059
2097	703,476	257,611	257,611	-	726	-	726
2098	488,966	186,031	186,031	-	488	-	488
2099	332,637	131,448	131,448	-	321	-	321
2100	221,216	90,766	90,766	-	206	-	206
2101	143,645	61,165	61,165	-	129	-	129
2102	90,967	40,166	40,166	-	79	-	79
2103	56,123	25,674	25,674	-	47	-	47
2104	33,700	15,957	15,957	-	27	-	27
2105	19,675	9,629	9,629	-	15	-	15
2106	11,162	5,638	5,638	-	8	-	8
2107	6,152	3,203	3,203	-	4	-	4
2108	3,291	1,764	1,764	-	2	-	2
2109	1,708	945	945	-	1	-	1
2110	856	490	490	-	1	-	1
2111	413	245	245	-	0	-	0
2112	190	118	118	-	0	-	0
2113	82	54	54	-	0	-	0
2114	32	33	33	-	0	-	0
2115	0	-	-	-	-	-	-
				Totals	$ 168,452,244	$ -	$ 168,452,244


Projection of Plan Net Position and Benefit Payments
End of Year
$ [thousands]
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
Year
Projected Plan Net Position
Projected Benefit Payments for Current Members

SECTION H

GLOSSARY OF TERMS

GLOSSARY OF TERMS

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

GLOSSARY OF TERMS

Amortization Payment	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
Amortization Method	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be "open" (meaning, reset each year) or "closed" (the number of years remaining will decline each year).
Cost-of-Living Adjustments (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.

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 II

JUNE 30, 2015

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

February 11, 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.

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.

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, 2014. The total pension liability was rolled-forward from the valuation date to the plan year ending June 30, 2015 using generally accepted actuarial principles. The asset information as of June 30, 2015 was provided by the System. This information was checked for internal consistency, but it was not otherwise audited by GRS. A description of the adjustments made to the data is included in this report. GRS is not responsible for the accuracy of the member or financial data. This report is based upon estimates of frozen accrued benefits. Final calculations are not available. Future measurements based on final calculation of benefit amounts will differ.

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 7.47% as of June 30, 2015, up from 7.20% as of June 30, 2014. Due to time constraints, scope of project, and available data, we are unable to review this assumption for reasonableness.

The benefit provisions reflected in this valuation for the development of the end of year TPL are those in effect for Component II as of the end of the plan year on June 30, 2015 and reflect the changes adopted through the City's Plan of Adjustment, including freezing benefits as of June 30, 2014 and reducing the post-retirement increases to 1.0125%. We understand that Component I is a separate plan for GASB No. 67 purposes and will, therefore, be treated in a separate report.

To the best of our knowledge, the information contained with 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 Brian B. Murphy 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 Brian B. Murphy
Brian B. Murphy, FSA, EA, FCA, MAAA

By Kenneth G. Alberts
Kenneth G. Alberts
Consultant

DTK/BBM/KGA:mrb

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SECTION A

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY
AS OF JUNE 30, 2015

Actuarial Valuation Date		June 30, 2014
Pension Plan's Fiscal Year Ending Date (Measurement Date & Reporting Date)		June 30, 2015
Membership		
Number of		
- Retirees and Beneficiaries		8,395
- DROP Members		625
- Inactive, Nonretired Members		272
- Active Members		2,608
- Total		11,900
Covered Payroll (excluding DROP)	$	132,566,687
Net Pension Liability		
Total Pension Liability	$	3,689,500,271
Plan Fiduciary Net Position		3,194,754,441
Net Pension Liability	$	494,745,830
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		86.59%
Net Pension Liability as a Percentage of Covered Payroll		373.21%
Development of the Single Discount Rate as of June 30, 2015		
Single Discount Rate		7.47%
Long-Term Expected Rate of Return		7.47%
Long-Term Municipal Bond Rate *		3.80%
Last Year Ending June 30 in the 2016 to 2115 Projection Period for which Projected Benefit Payments are Fully Funded		2115

**Source: "State & local bonds" rate from Federal Reserve statistical release (H.15) as of June 25, 2015. The statistical release describes this rate as "Bond Buyer Index, general obligation, 20 years to maturity, mixed quality." In describing this index, the Bond Buyer notes that the bonds' average credit quality is roughly equivalent to Moody's Investors Service's Aa2 rating and Standard & Poor's Corp.'s AA.*

DISCUSSION

Implementation of GASB Statement No. 67

The System first implemented GASB Statement No. 67 for the plan year ending June 30, 2014.

Changes to the Actuarial Assumptions

For purposes of determining the total pension liability as of June 30, 2015, the following actuarial assumptions were changed/modified from those used in the June 30, 2014 funding valuation:

- At the direction of the System and approval of the Systems' Auditor, the long-term expected return on assets was 7.47% as of June 30, 2015 (it was 6.75% in the June 30, 2014 funding valuation, as required by the Plan of Adjustment).
- All other actuarial assumptions were the same as those used in the June 30, 2014 actuarial valuation (the funding valuation).

The Single Discount Rate (SDR) changed to 7.47% from 7.20% when compared to the June 30, 2014 GASB 67 valuation.

Changes to the Benefit Provisions

The total pension liability as of the beginning of the year was based on the plan provisions and actuarial assumptions as of June 30, 2014 (including the plan freeze of benefit accruals but not the reduction of the COLA). Except for the long-term investment return assumption, the total pension liability as of the end of the year was based on the plan provisions and actuarial assumptions as used in the June 30, 2014 funding valuation (including the reduction of the COLA).The projection of contributions used to determine this Single Discount Rate assumed that plan member contributions ceased as of June 30, 2014 and that employer contributions will be made at rates equal to those set by the final Plan of Adjustment through June 30, 2023 and a 30-year closed level dollar amortization thereafter. 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 of 7.47% was applied to all periods of projected benefit payments to determine the total pension liability. Note projections are shown on two investment return rates: 6.75% (the rate mandated in the POA) and 7.47% (the current long-term expected rate provided by the Retirement System).

The 30-year period, beginning July 1, 2023, was chosen to illustrate the projection of net plan position due to its use in the City's 40-year forecasting included in the Plan of adjustment and the State requirements under the Michigan Constitution and the Public Employees Retirement System Investment Act (PERSIA). There have been a number of changes resulting from the Bankruptcy and the Board has not yet determined if changes to the funding policy are warranted and what those changes might be. The amortization method used in the projections is unchanged from the June 30, 2014 GASB Statement No. 67 report. In the June 30, 2014 actuarial valuation of Component II, we recommended alternate funding policies.

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." The 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. ***Current DROP balances for members of this plan are not available and are not included. These balances are 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, 2014 rolled to the plan year end of June 30, 2015.

Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating (which is published by the Federal Reserve) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.47%; the municipal bond rate is 3.80% (based on the weekly rate closest to but not later than the plan year end of the "state & local bonds" rate from Federal Reserve statistical release (H.15)); and the resulting Single Discount Rate is 7.47% as of June 30, 2015.

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 (86.59% as of June 30, 2015). 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. Consequently, we have not made such an evaluation.

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 II. The liabilities and reported assets of Component I will be detailed in a separate report.

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, 2015

Assets		
Cash and Deposits	$	134,996,993
Receivables		
Accounts Receivable - Sale of Investments	$	113,836,353
Accrued Interest and Other Dividends		-
Contributions		-
Accounts Receivable - Other		-
Total Receivables	$	113,836,353
Investments		
Fixed Income	$	650,071,196
Domestic Equities		1,011,781,651
International Equities		-
Real Estate		443,516,083
Other		1,247,849,203
Total Investments	$	3,353,218,133
Total Assets	$	3,602,051,479
Liabilities		
Payables		
Accounts Payable - Purchase of Investments	$	-
Accrued Expenses		-
Accounts Payable - Other		407,297,038
Total Liabilities	$	407,297,038
Net Position Restricted for Pensions	$	3,194,754,441

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

Additions		
Contributions		
Employer	$	114,300,000
Employee		42,576
Other		-
Total Contributions	$	114,342,576
Investment Income		
Net Appreciation in Fair Value of Investments	$	122,736,820
Interest and Dividends		-
Less Investment Expense		-
Net Investment Income	$	122,736,820
Other	$	2,919,354
Total Additions	$	239,998,750
Deductions		
Benefit Payments, including Refunds of Employee Contributions	$	313,816,916
Pension Plan Administrative Expense		7,630,692
Other		-
Total Deductions	$	321,447,608
Net Increase in Net Position	$	(81,448,858)
Net Position Restricted for Pensions		
Beginning of Year	$	3,276,203,299
End of Year	$	3,194,754,441

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,	2015	2014
Total Pension Liability		
Service Cost	$ -	$ 34,967,708
Interest on the Total Pension Liability	306,063,331	304,737,368
Benefit Changes	(555,898,068)	(102,236,878)
Difference between Expected and Actual Experience	(59,621,651)	-
Assumption Changes	(95,014,469)	540,356,835
Benefit Payments	(313,816,916)	(285,512,629)
Refunds	-	(38,027,844)
Net Change in Total Pension Liability	(718,287,774)	454,284,561
Total Pension Liability - Beginning	4,407,788,045	3,953,503,484
Total Pension Liability - Ending (a)	$ 3,689,500,271	$ 4,407,788,045
Plan Fiduciary Net Position		
Employer Contributions	$ 114,300,000	$ -
Employee Contributions	42,576	7,783,141
Pension Plan Net Investment Income	122,736,820	568,760,793
Benefit Payments	(313,816,916)	(285,512,629)
Refunds	-	(38,027,844)
Pension Plan Administrative Expense	(7,630,692)	(11,373,226)
Other	2,919,354	-
Net Change in Plan Fiduciary Net Position	(81,448,858)	241,630,235
Plan Fiduciary Net Position - Beginning	3,276,203,299	3,034,573,064
Plan Fiduciary Net Position - Ending (b)	$ 3,194,754,441	$ 3,276,203,299
Net Pension Liability - Ending (a) - (b)	494,745,830	1,131,584,746
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	86.59 %	74.33 %
Covered Employee Payroll (excluding DROP)	$ 132,566,687	$ 150,176,596
Net Pension Liability as a Percentage of Covered Employee Payroll	373.21 %	753.50 %

Notes to Schedule:

N/A

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

SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF THE NET PENSION LIABILITY MULTIYEAR

Ultimately 10 Fiscal Years will be Displayed

FY Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll*	Net Pension Liability as a % of Covered Payroll
2014	$ 4,407,788,045	$ 3,276,203,299	$ 1,131,584,746	74.33%	$ 150,176,596	753.50%
2015	3,689,500,271	3,194,754,441	494,745,830	86.59%	132,566,687	373.21%

* *Covered payroll shown is the reported payroll on the actuarial valuation date (census date). Actual covered payroll paid during the year was unavailable. Covered payroll for this purpose excludes DROP member payroll.*

SCHEDULE OF CONTRIBUTIONS MULTIYEAR

FY Ending June 30,	Actuarially Determined Contribution#	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2014	$ 62,954,305	$ -	$ 62,954,305	$ 186,694,166 *	0.00%
2015	N/A	114,300,000	N/A	132,566,687	86.22%

* *Includes DROP members, consistent with Plan Funding.*

\# *Beginning with FY 2015, employer contributions are set forth in the POA through 2023 and are not actuarially determined. Employer contributions will again be actuarially determined in FY 2024 and beyond.*

NOTES TO SCHEDULE OF CONTRIBUTIONS

Contribution Requirement: The employer contributions for Fiscal Years 2015 to 2023 are set by the POA and not actuarially determined. The schedule of POA mandated contributions are shown below:

Fiscal Year	Contribution Source (Millions)		Total
	State	DIA	
2015	$ 96.0	$ 18.3	$ 114.3
2016	-	18.3	18.3
2017	-	18.3	18.3
2018	-	18.3	18.3
2019	-	18.3	18.3
2020	-	18.3	18.3
2021	-	18.3	18.3
2022	-	18.3	18.3
2023	-	18.3	18.3
Total	**$ 96.0**	**$ 164.7**	**$ 260.7**

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

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

A Single Discount Rate of 7.47% was used to measure the total pension liability as of June 30, 2015. This Single Discount Rate was based on the expected rate of return on pension plan investments of 7.47% 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 cease as of June 30, 2015 and that employer contributions will be made at rates equal to those set by the final Plan of Adjustment through June 30, 2023 and the System's funding policy thereafter. 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 7.47%, 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 6.47%	Current Single Discount Rate Assumption 7.47%	1% Increase 8.47%
Total Pension Liability (TPL)	$4,065,716,645	$3,689,500,271	$3,373,672,115
Net Position Restricted for Pensions	3,194,754,441	3,194,754,441	3,194,754,441
Net Pension Liability (NPL)	$870,962,204	$494,745,830	$178,917,674

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	8,395
DROP Members	625
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	272
Active Plan Members	2,608
Total Plan Members	11,900

Additional information regarding the plan population may be found in the June 30, 2014 actuarial valuation of the System.

Additional Note

The interest on the ASF was capped. If actual interest rate earned on the fund exceeds the cap, the excess (that would have been payable to the ASF if not for the cap) is transferred to Component I if needed to fund transition liabilities. We have assumed no future transfers of assets to Component I in this valuation. If future transfers to Component I are triggered, Component II liabilities and assets will be reduced in equal amounts.

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

The June 30, 2014 GASB Statement No. 67 report included a note indicating that the POA mandated change in the post-retirement COLA (from 2.25% to 1.0125%) resulted in a reduction of $540.2 million. That measurement was based on the 6/30/2013 census data (the most recent data available at the time). This valuation indicates the reduction is $555.9 million based on the 6/30/2014 census data. The difference in these amounts is mostly due to the updating of the census data and the difference in measurement dates.

SECTION E

SUMMARY OF BENEFITS

SUMMARY OF BENEFIT PROVISIONS (JULY 1, 2014)

Component II Frozen Benefits

All Component II benefits are frozen as of June 30, 2014 based on service and average final compensation accrued as of that date and the provisions of the Detroit Police and Fire Retirement System as it existed on June 30, 2014 and all future cost-of-living adjustments ("COLA's") were reduced from 2.25% to 1.0125%. The benefits evaluated in this report are the frozen reduced benefits. Component II benefits are payable after separation from service, upon meeting the eligibility conditions of the plan as it existed on June 30, 2014, regardless of whether the individual is eligible to receive a Component I benefit at that time.

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

Age and Service Retirement

Eligibility - 25 years of service regardless of age. 20 years of service regardless of age for eligible DPOA and DFFA members. DFFA members must retire by age 60.

Annual Amount - An annuity equal to the actuarial equivalent of the member's accumulated contribution account plus a defined benefit, which, when added to the annuity will provide the following:

Pre-1969 Members - For all service earned up to April 5, 2011 for LSA and Fire equivalent members, and up to September 1, 2011 for DPOA and Fire equivalent members, 2.5% of AFC times the first 25 years of service, with a maximum allowance of 15/22 of a police officer's or firefighter's annual rate of compensation (actuarially reduced to reflect early payment).

For all service earned after April 5, 2011 for LSA and Fire equivalent members, and after September 1, 2011 for DPOA and Fire equivalent members, 2.1% of AFC times the first 25 years of service, with a maximum allowance of 15/22 of a police officer's or firefighter's annual rate of compensation.

1969 Plan Members - For all service earned up to April 5, 2011 for LSA and Fire equivalent members, and up to September 1, 2011 for DPOA and Fire equivalent members, 2.5% of AFC times the first 25 years of service plus 2.1% of AFC times each of the next 10 years of service.

For all service earned after April 5, 2011 for LSA and Fire equivalent members, and after September 1, 2011 for DPOA and Fire equivalent members, 2.1% of AFC times each year of service, up to 35 years of service.

Members may elect to receive their accumulated contribution account in a lump sum after 25 years of service (20 years of service for eligible DPOA and DFFA members). The defined benefit at retirement is then reduced by the actuarial equivalent of the amount of principal withdrawn. No reduction is made with regard to the interest portion of the withdrawal. Pre-1969 plan members may elect 1969 plan benefits at the time of retirement.

SUMMARY OF BENEFIT PROVISIONS (CONTINUED)

Type of Average Final Compensation (AFC) - Average of the current compensation for the ranks held in each of last 5 years (last 3 years for DPCOA, Executive Members and their Fire equivalents). Pension benefits for non-union employees may not be diminished due to a reduction in compensation because of fiscal emergency. AFC includes prior longevity distributions during the averaging period in accordance with the following schedule: 1% of compensation after 5 years of service, 2% after 11 years, 3% after 16 years and 4% after 21 years. A member may elect that upon retirement or upon death before retirement either (i) a lump sum payment equal to 85% (100% for DPOA and DPCOA members) of the amount of his or her unused accumulated sick leave bank, or (ii) to have the 3-year average of 25% of the value of the accumulated unused sick leave bank added to his or her AFC. Any member electing the AFC adjustment option will also be paid a lump sum equal to the remaining value of the sick leave bank as provided in (i) above. Lump sum payments are not paid by the retirement system.

Deferred Retirement (vested benefit)

Eligibility - 10 years of service for DPOA and Fire equivalents, age 40 with 8 years of service for all others.

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

Benefit Commencement - DPOA and Fire equivalent members hired after 6/30/85: Unreduced benefit begins at age 62. ***All other members***: Unreduced benefit begins at the age when the member would have first been eligible for regular retirement had the member continued in City service. **All** members may elect a reduced benefit payable immediately.

Duty Disability Retirement

Eligibility - No age or service requirement.

Annual Amount – A basic benefit of 50% of final compensation and a supplemental benefit of 16-2/3% of final compensation is payable for 24 months. After 24 months, members disabled from any occupation continue to receive both benefits; otherwise, only the 50% benefit is then payable. Upon attaining 25 years of service, the disability benefit is 50% of final compensation. Members convert to regular retirement benefit at age 65. Worker's compensation payments are offset. Members who have already filed under the old duty disability plan will receive 66-2/3% of final compensation payable to eligibility date for regular retirement.

Non-Duty Disability Retirement

Eligibility - 5 years of service.

Annual Amount - Computed as a regular retirement benefit, but based on average final compensation and credited service at the time of disability. Minimum benefit is 20% of average final compensation.

Duty Death Before Retirement

Eligibility - No age or service requirement.

Annual Amount – Surviving spouse receives 5/11 of police officer's or firefighter's compensation and each child under age 18 receives 1/10 of such compensation with a maximum total of 7/33 of such compensation. If there is no surviving spouse, each child receives 1/4 of such compensation with a maximum total of 1/2 of such compensation. If there is no surviving spouse or children, each dependent parent receives 1/6 of such compensation. Worker's compensation payments are offset.

SUMMARY OF BENEFIT PROVISIONS (CONCLUDED)

Non-Duty Death Before Retirement

Eligibility - No age or service requirement.

Annual Amount - Same as a regular retirement benefit to a surviving spouse, but reduced in accordance with a 100% joint and survivor option election. Minimum benefit is 20% of average final compensation. Each child under 18 receives 1/7 of police officer's or firefighter's compensation with a maximum total of 2/7 of such compensation. If there is no spouse or children, each dependent parent receives 1/7 of such compensation.

Post-Retirement Cost-of-Living Adjustments

Pre-1969 Members - Allowances increase in proportion to active member compensation for the corresponding rank.

1969 Plan Members - Police retired after July 1, 2001, certain Police classes retired after July 1, 1998 and all Fire members: For all service earned up to April 5, 2011 for LSA members (September 1, 2011 for DPOA members) pensions increase by 2.25% of the **current** pension amount each July 1. No cost-of-living adjustments for service earned after April 5, 2011 for LSA members (September 1, 2011 for DPOA members).

Member Contributions

5% of covered compensation payable until first eligible for regular retirement.

DROP plan

Members with 25 years (20 years for DPOA members) of service may elect to participate in the DROP. When a DROP election is made, the member ceases to accrue any further age and service retirement benefits. Seventy five percent (75%) of the member's benefit (accrued to their DROP date) is contributed to a DROP account (a defined contribution account). At retirement the member is entitled to the balance in the DROP account and a monthly benefit equal to 100% of their benefit accrued to their DROP date, increased by any post-retirement increases that the member would have received, had the member been retired. Fire members must retire from the DROP plan at age 60. Participation in the DROP is limited to 10 years for LSA members electing to DROP after April 5, 2011.

SECTION F

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

SUMMARY OF ASSUMPTIONS USED FOR DPFRS ACTUARIAL VALUATION
ASSUMPTIONS ADOPTED BY BOARD OF TRUSTEES

ASSUMPTION REVIEW

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

ECONOMIC ASSUMPTIONS

For the Determination of the June 30, 2015 TPL:

The investment return rate used in the valuation was 7.47% per year, compounded annually (net after investment expenses). This assumption was provided by the Retirement System. We were not able to evaluate it.

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). This table was first used as of June 30, 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 page 22. The rationale is based on the 2002-2007 Experience Study. However, probabilities were modified effective with the June 30, 2014 valuation to reflect a change in the modeling of the future DROP members, consistent with the plan closure. The revised probabilities were selected so that, when combined with the model change, the effect on the present value of benefits would be immaterial.

The probabilities of separation from service (including *death-in-service*) are shown for sample ages on page 23. These probabilities were first used for the June 30, 2008 valuation. The rationale (excluding death-in-service probabilities) is based on the 2002-2007 Experience Study. The rationale for the death-in-service probabilities is based on the 2008-2013 Mortality Experience Study.

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:	N/A
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 Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
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.
Incidence of Contributions:	Employer contributions are assumed to be received on the last day of the fiscal year.
Longevity in AFC:	Longevity payments were included directly in the AFC data provided by the System. No further adjustment was included.
Unused Sick Leave Payout:	Sick leave banks as of June 30, 2014 were included in data provided by the System. No further adjustment was included.
Administrative Expense:	3.0% of payroll. 90% of the administrative expenses were allocated to Component II and 10% to Component I based on actual administrative expenses paid.
Post-Retirement COLA:	Active members are assumed to receive a 0.9% COLA rather than 1.0125% because the annuity portion is not subject to the COLA. Post retirement increases for retired members were based on the plan in effect at retirement. For the pre-69 plan members, future COLA's are assumed to be the same as wage inflation for active members. The COLA rate is prorated by the ratio of COLA eligible service to total service at retirement.
AFC Period:	AFC data was provided by the System.
Disability Change Age:	The duty disability benefit is assumed to change at normal retirement age.

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS (CONCLUDED)

DROP Assumption:	All active members not in the DROP are assumed to have a 40% chance of retiring or entering the DROP in their first five years of retirement eligibility with a 60% chance of entering the DROP.
Workers Compensation Offset:	No Workers Compensation offsets are assumed for duty disability benefits.
DROP Account:	DROP account balances are not reported. No liability is included for DROP account balances.
Class Codes:	For valuation purposes, members are categorized as DPOA, DFFA or LSA based on class codes provided by the Retirement System and are primarily used in the valuation to determine normal retirement eligibility (20 & Out versus 25 & Out). Therefore, counts in the valuation may not represent actual membership in the respective associations.
Retiree Benefit Estimate:	Reported retiree benefits as of June 30, 2014 were adjusted to include the effect of the COLA reduction from 2.25% to 1.0125%, effective March 2015 as administered.
Frozen Benefit Estimate:	Reported AFC as of June 30, 2014 was adjusted to include 25% of unused sick leave (to a maximum of 25 days per year of service) plus a load of 6% for data consistency with sample actual computations.
Form of Payment:	The actuarial equivalent basis for optional forms of payment and early retirement are based on the 1971 Group Annuity Mortality table projected to 1984, a 7.8% interest rate and a 0% COLA assumption. Annuity withdrawal factors use the same mortality and COLA assumptions with a 5% interest rate. No adjustment has been made for alternate forms of payment elections. Principle balances of accumulated member contributions were converted to life annuity offsets based on plan factors for the valuation.

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

SINGLE LIFE RETIREMENT VALUES BASED ON RP-2014 BLUE COLLAR FOR MALES AND FEMALES

Sample Attained Ages in 2014	Future Life Expectancy (years)	
	Males	Females
45	39.15	42.53
50	34.17	37.47
55	29.40	32.57
60	24.86	27.80
65	20.53	23.20
70	16.49	18.83
75	12.79	14.82
80	9.53	11.24

PROBABILITIES OF SERVICE RETIREMENT

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. The rationale is based on the 2002-2007 Experience Study.

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

The rationale is based on the 2002-2007 Experience Study.

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 7.47%; the municipal bond rate is 3.80%; and the resulting SDR is 7.47% as of June 30, 2015.

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

The **Projection of Contributions** table shows the development of expected contributions in future years. Normal Cost contributions for future hires are not included (nor are their liabilities). For purposes of determining the discount rate as of June 30, 2015, the employer contributions for the 10-year period ending June 30, 2023 were set by the 8th Amended Plan of Adjustment (POA). Subsequent employer contributions were determined by a closed 30-year level dollar amortization of any unfunded actuarial accrued liability using 7.47% interest, net of all expenses, consistent with the 100% funded target by 2053 in the POA and State Law.

We have illustrated the projection in two ways: using a 6.75% rate of return and using a 7.47% rate of return. Both show that the plan is expected to pay all benefits from the trust. While only the projection using the 7.47% rate of return is needed for the report, the second projection is provided for consistency with the Status/Funding valuation which must use the 6.75% interest rate as mandated in the POA.

Rates of Return: The 6.75% rate of return mandated by the POA is net after administrative expenses. We therefore do not show the administrative expenses in that projection. The 7.47% rate of return was before administrative expenses. Therefore, the projections assumed that any administration expenses incurred by the plan will directly increase employer contributions beginning with FY 2024. Both rates are net of investment expenses.

Administrative Expenses: For purposes of the projection using a 7.47% rate of return, administrative expenses were assumed to be related to payroll. Payroll was increased by an assumed wage inflation of 2.00% for 5 years, 2.50% for the next 5 years and 3.00% thereafter. Since benefits are frozen, the wage inflation assumption does not affect anything other than the administrative expenses.

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

The **Present Values of Projected Benefit Payments** table shows the development of the Single Discount Rate (SDR). It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR. For purposes of determining the discount rate as of June 30, 2015, the benefit payments reflect the plan provisions in force as of June 30, 2015.

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

SINGLE DISCOUNT RATE DEVELOPMENT PROJECTION OF CONTRIBUTIONS AT 7.47% END OF YEAR

Fiscal Year Ending June 30,	Projected Contributions from Current Employees	Projected Service Cost	Administrative Expense Contributions#	Projected UAL Contributions	Projected Total Contributions
2016	$ -	$ -	$ 3,121,688	$ 15,178,312	$ 18,300,000
2017	-	-	2,918,089	15,381,911	18,300,000
2018	-	-	2,734,397	15,565,603	18,300,000
2019	-	-	2,535,636	15,764,364	18,300,000
2020	-	-	2,335,879	15,964,121	18,300,000
2021	-	-	2,170,353	16,129,647	18,300,000
2022	-	-	2,037,716	16,262,284	18,300,000
2023	-	-	1,933,297	16,366,703	18,300,000
2024	-	-	1,829,971	57,812,507	59,642,478
2025	-	-	1,724,602	57,812,507	59,537,109
2026	-	-	1,619,682	57,812,507	59,432,189
2027	-	-	1,509,215	57,812,507	59,321,722
2028	-	-	1,395,959	57,812,507	59,208,466
2029	-	-	1,283,452	57,812,507	59,095,959
2030	-	-	1,177,523	57,812,507	58,990,030
2031	-	-	1,072,161	57,812,507	58,884,668
2032	-	-	964,295	57,812,507	58,776,802
2033	-	-	859,084	57,812,507	58,671,591
2034	-	-	751,394	57,812,507	58,563,901
2035	-	-	645,805	57,812,507	58,458,312
2036	-	-	558,398	57,812,507	58,370,905
2037	-	-	481,317	57,812,507	58,293,824
2038	-	-	414,209	57,812,507	58,226,716
2039	-	-	343,472	57,812,507	58,155,979
2040	-	-	269,064	57,812,507	58,081,571
2041	-	-	209,840	57,812,507	58,022,347
2042	-	-	161,351	57,812,507	57,973,858
2043	-	-	122,895	57,812,507	57,935,402
2044	-	-	94,637	57,812,507	57,907,144
2045	-	-	70,753	57,812,507	57,883,260
2046	-	-	51,291	57,812,507	57,863,798
2047	-	-	37,082	57,812,507	57,849,589
2048	-	-	26,116	57,812,507	57,838,623
2049	-	-	18,150	57,812,507	57,830,657
2050	-	-	12,322	57,812,507	57,824,829
2051	-	-	8,236	57,812,507	57,820,743
2052	-	-	5,252	57,812,507	57,817,759
2053	-	-	3,000	57,812,507	57,815,507
2054	-	-	1,687	-	1,687
2055	-	-	658	-	658
2056	-	-	149	-	149
2057	-	-	-	-	-
2058	-	-	-	-	-
2059	-	-	-	-	-
2060	-	-	-	-	-
2061	-	-	-	-	-
2062	-	-	-	-	-
2063	-	-	-	-	-
2064	-	-	-	-	-
2065	-	-	-	-	-

 # Expenses assumed to be paid by employer.

SINGLE DISCOUNT RATE DEVELOPMENT
PROJECTION OF PLAN FIDUCIARY NET POSITION AT 7.47%
END OF YEAR

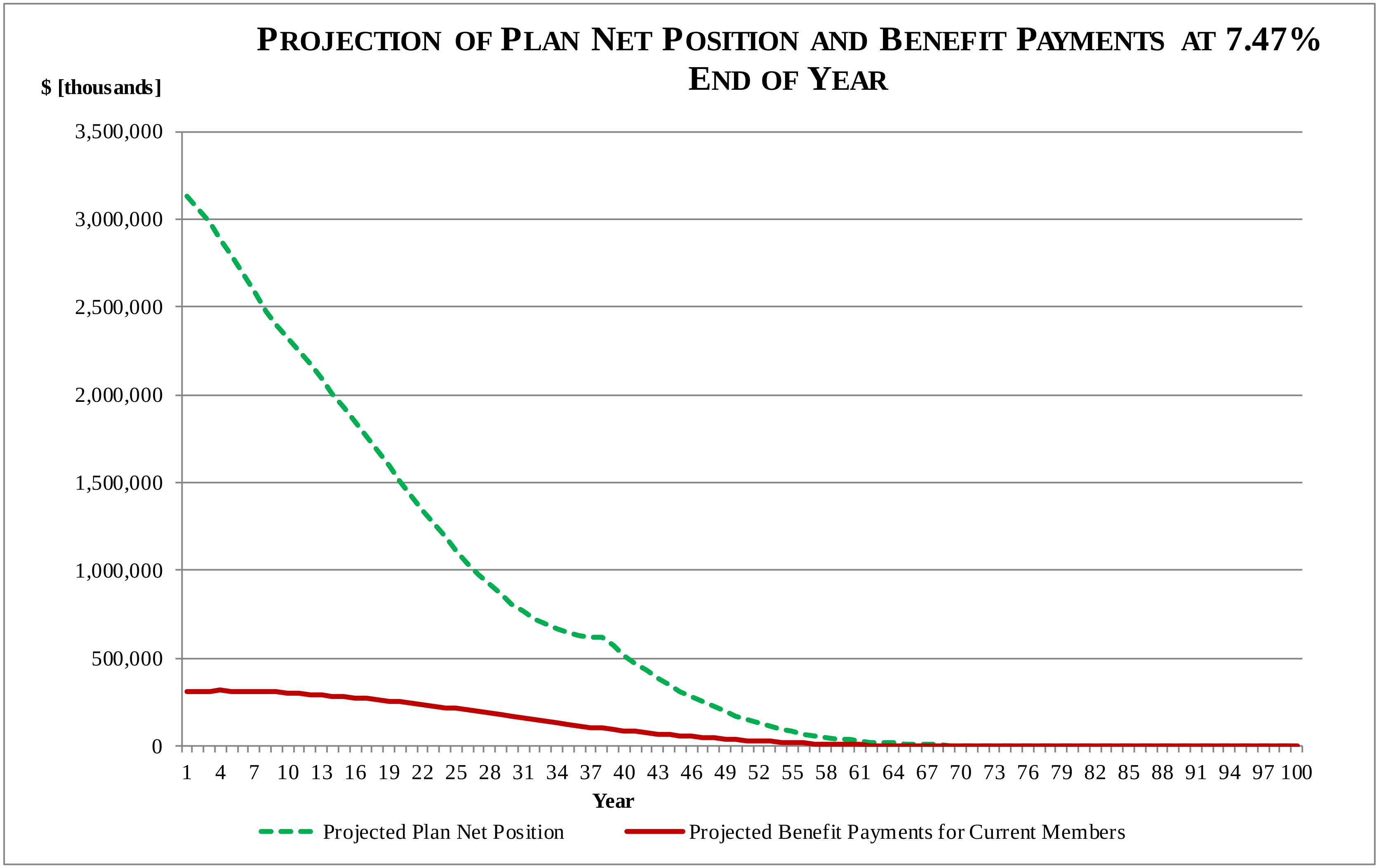
Fiscal Year Ending June 30,	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.47%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2016	$ 3,194,754,441	$ 18,300,000	$ 309,149,750	$ 3,121,688	$ 227,866,053	$ 3,128,649,056
2017	3,128,649,056	18,300,000	309,429,965	2,918,089	222,925,171	3,057,526,173
2018	3,057,526,173	18,300,000	312,427,000	2,734,397	217,509,105	2,978,173,881
2019	2,978,173,881	18,300,000	316,715,172	2,535,636	211,431,500	2,888,654,574
2020	2,888,654,574	18,300,000	316,021,842	2,335,879	204,777,164	2,793,374,017
2021	2,793,374,017	18,300,000	314,431,468	2,170,353	197,724,108	2,692,796,304
2022	2,692,796,304	18,300,000	311,767,449	2,037,716	190,313,527	2,587,604,666
2023	2,587,604,666	18,300,000	309,437,495	1,933,297	182,544,998	2,477,078,873
2024	2,477,078,873	59,642,478	306,972,847	1,829,971	175,899,242	2,403,817,775
2025	2,403,817,775	59,537,109	303,489,377	1,724,602	170,554,403	2,328,695,307
2026	2,328,695,307	59,432,189	299,821,826	1,619,682	165,077,271	2,251,763,259
2027	2,251,763,259	59,321,722	296,071,982	1,509,215	159,467,981	2,172,971,765
2028	2,172,971,765	59,208,466	292,106,359	1,395,959	153,727,705	2,092,405,618
2029	2,092,405,618	59,095,959	287,709,676	1,283,452	147,870,673	2,010,379,122
2030	2,010,379,122	58,990,030	282,872,305	1,177,523	141,920,716	1,927,240,040
2031	1,927,240,040	58,884,668	277,672,562	1,072,161	135,900,939	1,843,280,924
2032	1,843,280,924	58,776,802	272,073,568	964,295	129,834,550	1,758,854,413
2033	1,758,854,413	58,671,591	266,121,000	859,084	123,746,214	1,674,292,133
2034	1,674,292,133	58,563,901	259,741,412	751,394	117,663,398	1,590,026,626
2035	1,590,026,626	58,458,312	252,995,394	645,805	111,616,191	1,506,459,930
2036	1,506,459,930	58,370,905	245,902,026	558,398	105,633,925	1,424,004,337
2037	1,424,004,337	58,293,824	238,359,045	481,317	99,751,149	1,343,208,947
2038	1,343,208,947	58,226,716	230,461,151	414,209	94,005,408	1,264,565,710
2039	1,264,565,710	58,155,979	222,331,580	343,472	88,428,929	1,188,475,567
2040	1,188,475,567	58,081,571	213,902,612	269,064	83,054,148	1,115,439,609
2041	1,115,439,609	58,022,347	205,273,255	209,840	77,914,864	1,045,893,725
2042	1,045,893,725	57,973,858	196,418,510	161,351	73,044,556	980,332,278
2043	980,332,278	57,935,402	187,416,982	122,895	68,477,268	919,205,071
2044	919,205,071	57,907,144	178,337,813	94,637	64,244,066	862,923,831
2045	862,923,831	57,883,260	169,260,361	70,753	60,372,794	811,848,771
2046	811,848,771	57,863,798	160,241,849	51,291	56,888,263	766,307,691
2047	766,307,691	57,849,589	151,347,541	37,082	53,812,564	726,585,221
2048	726,585,221	57,838,623	142,619,783	26,116	51,165,407	692,943,351
2049	692,943,351	57,830,657	134,106,619	18,150	48,964,600	665,613,839
2050	665,613,839	57,824,829	125,853,921	12,322	47,225,773	644,798,197
2051	644,798,197	57,820,743	117,880,272	8,236	45,963,297	630,693,729
2052	630,693,729	57,817,759	110,203,936	5,252	45,191,241	623,493,541
2053	623,493,541	57,815,507	102,836,422	3,000	44,923,608	623,393,233
2054	623,393,233	1,687	95,782,116	1,687	43,054,437	570,665,554
2055	570,665,554	658	89,041,495	658	39,362,908	520,986,968
2056	520,986,968	149	82,609,389	149	35,887,830	474,265,409
2057	474,265,409	-	76,477,434	-	32,622,634	430,410,608
2058	430,410,608	-	70,635,525	-	29,560,946	389,336,030
2059	389,336,030	-	65,073,323	-	26,696,682	350,959,389
2060	350,959,389	-	59,781,200	-	24,024,048	315,202,237
2061	315,202,237	-	54,750,410	-	21,537,505	281,989,332
2062	281,989,332	-	49,973,788	-	19,231,695	251,247,240
2063	251,247,240	-	45,446,337	-	17,101,316	222,902,219
2064	222,902,219	-	41,165,267	-	15,140,961	196,877,913
2065	196,877,913	-	37,129,692	-	13,344,960	173,093,181

SINGLE DISCOUNT RATE DEVELOPMENT
PRESENT VALUES OF PROJECTED BENEFITS AT 7.47%
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)
2016	$ 3,194,754,441	$ 309,149,750	$ 309,149,750	$ -	$ 298,212,110	$ -	$ 298,212,110
2017	3,128,649,056	309,429,965	309,429,965	-	277,735,564	-	277,735,564
2018	3,057,526,173	312,427,000	312,427,000	-	260,933,859	-	260,933,859
2019	2,978,173,881	316,715,172	316,715,172	-	246,129,403	-	246,129,403
2020	2,888,654,574	316,021,842	316,021,842	-	228,520,139	-	228,520,139
2021	2,793,374,017	314,431,468	314,431,468	-	211,566,127	-	211,566,127
2022	2,692,796,304	311,767,449	311,767,449	-	195,192,736	-	195,192,736
2023	2,587,604,666	309,437,495	309,437,495	-	180,267,971	-	180,267,971
2024	2,477,078,873	306,972,847	306,972,847	-	166,401,925	-	166,401,925
2025	2,403,817,775	303,489,377	303,489,377	-	153,078,652	-	153,078,652
2026	2,328,695,307	299,821,826	299,821,826	-	140,717,183	-	140,717,183
2027	2,251,763,259	296,071,982	296,071,982	-	129,298,637	-	129,298,637
2028	2,172,971,765	292,106,359	292,106,359	-	118,699,913	-	118,699,913
2029	2,092,405,618	287,709,676	287,709,676	-	108,786,902	-	108,786,902
2030	2,010,379,122	282,872,305	282,872,305	-	99,523,427	-	99,523,427
2031	1,927,240,040	277,672,562	277,672,562	-	90,903,501	-	90,903,501
2032	1,843,280,924	272,073,568	272,073,568	-	82,879,428	-	82,879,428
2033	1,758,854,413	266,121,000	266,121,000	-	75,431,421	-	75,431,421
2034	1,674,292,133	259,741,412	259,741,412	-	68,505,761	-	68,505,761
2035	1,590,026,626	252,995,394	252,995,394	-	62,088,513	-	62,088,513
2036	1,506,459,930	245,902,026	245,902,026	-	56,153,070	-	56,153,070
2037	1,424,004,337	238,359,045	238,359,045	-	50,647,240	-	50,647,240
2038	1,343,208,947	230,461,151	230,461,151	-	45,565,341	-	45,565,341
2039	1,264,565,710	222,331,580	222,331,580	-	40,902,590	-	40,902,590
2040	1,188,475,567	213,902,612	213,902,612	-	36,616,640	-	36,616,640
2041	1,115,439,609	205,273,255	205,273,255	-	32,696,971	-	32,696,971
2042	1,045,893,725	196,418,510	196,418,510	-	29,111,884	-	29,111,884
2043	980,332,278	187,416,982	187,416,982	-	25,846,967	-	25,846,967
2044	919,205,071	178,337,813	178,337,813	-	22,885,312	-	22,885,312
2045	862,923,831	169,260,361	169,260,361	-	20,210,703	-	20,210,703
2046	811,848,771	160,241,849	160,241,849	-	17,803,888	-	17,803,888
2047	766,307,691	151,347,541	151,347,541	-	15,646,854	-	15,646,854
2048	726,585,221	142,619,783	142,619,783	-	13,719,686	-	13,719,686
2049	692,943,351	134,106,619	134,106,619	-	12,004,038	-	12,004,038
2050	665,613,839	125,853,921	125,853,921	-	10,482,302	-	10,482,302
2051	644,798,197	117,880,272	117,880,272	-	9,135,741	-	9,135,741
2052	630,693,729	110,203,936	110,203,936	-	7,947,170	-	7,947,170
2053	623,493,541	102,836,422	102,836,422	-	6,900,414	-	6,900,414
2054	623,393,233	95,782,116	95,782,116	-	5,980,333	-	5,980,333
2055	570,665,554	89,041,495	89,041,495	-	5,173,043	-	5,173,043
2056	520,986,968	82,609,389	82,609,389	-	4,465,765	-	4,465,765
2057	474,265,409	76,477,434	76,477,434	-	3,846,914	-	3,846,914
2058	430,410,608	70,635,525	70,635,525	-	3,306,093	-	3,306,093
2059	389,336,030	65,073,323	65,073,323	-	2,834,051	-	2,834,051
2060	350,959,389	59,781,200	59,781,200	-	2,422,602	-	2,422,602
2061	315,202,237	54,750,410	54,750,410	-	2,064,513	-	2,064,513
2062	281,989,332	49,973,788	49,973,788	-	1,753,417	-	1,753,417
2063	251,247,240	45,446,337	45,446,337	-	1,483,729	-	1,483,729
2064	222,902,219	41,165,267	41,165,267	-	1,250,545	-	1,250,545
2065	196,877,913	37,129,692	37,129,692	-	1,049,549	-	1,049,549

SINGLE DISCOUNT RATE DEVELOPMENT
PRESENT VALUES OF PROJECTED BENEFITS AT 7.47% (CONCLUDED)
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)
2066	$ 173,093,181	$ 33,339,584	$ 33,339,584	$ -	$ 876,908	$ -	$ 876,908
2067	151,460,849	29,794,379	29,794,379	-	729,191	-	729,191
2068	131,887,816	26,493,159	26,493,159	-	603,328	-	603,328
2069	114,274,976	23,434,711	23,434,711	-	496,583	-	496,583
2070	98,517,082	20,616,929	20,616,929	-	406,508	-	406,508
2071	84,503,204	18,036,599	18,036,599	-	330,912	-	330,912
2072	72,117,459	15,688,425	15,688,425	-	267,824	-	267,824
2073	61,240,798	13,565,590	13,565,590	-	215,487	-	215,487
2074	51,752,345	11,660,053	11,660,053	-	172,344	-	172,344
2075	43,530,532	9,962,123	9,962,123	-	137,013	-	137,013
2076	36,454,755	8,460,609	8,460,609	-	108,274	-	108,274
2077	30,407,002	7,142,993	7,142,993	-	85,058	-	85,058
2078	25,273,427	5,995,426	5,995,426	-	66,430	-	66,430
2079	20,946,029	5,003,970	5,003,970	-	51,591	-	51,591
2080	17,323,195	4,154,923	4,154,923	-	39,860	-	39,860
2081	14,309,922	3,433,814	3,433,814	-	30,652	-	30,652
2082	11,819,116	2,826,591	2,826,591	-	23,478	-	23,478
2083	9,771,741	2,320,003	2,320,003	-	17,931	-	17,931
2084	8,096,595	1,901,185	1,901,185	-	13,672	-	13,672
2085	6,730,495	1,557,712	1,557,712	-	10,424	-	10,424
2086	5,618,419	1,278,106	1,278,106	-	7,958	-	7,958
2087	4,713,132	1,051,929	1,051,929	-	6,095	-	6,095
2088	3,974,691	869,724	869,724	-	4,689	-	4,689
2089	3,369,977	723,205	723,205	-	3,628	-	3,628
2090	2,871,984	605,240	605,240	-	2,825	-	2,825
2091	2,459,083	509,877	509,877	-	2,215	-	2,215
2092	2,114,199	432,334	432,334	-	1,747	-	1,747
2093	1,823,939	368,786	368,786	-	1,387	-	1,387
2094	1,577,876	316,235	316,235	-	1,107	-	1,107
2095	1,367,909	272,403	272,403	-	887	-	887
2096	1,187,699	235,586	235,586	-	714	-	714
2097	1,032,193	204,521	204,521	-	577	-	577
2098	897,275	178,207	178,207	-	467	-	467
2099	779,559	155,826	155,826	-	380	-	380
2100	676,251	136,662	136,662	-	310	-	310
2101	585,093	120,133	120,133	-	254	-	254
2102	504,261	105,747	105,747	-	208	-	208
2103	432,303	93,089	93,089	-	170	-	170
2104	368,093	81,855	81,855	-	139	-	139
2105	310,732	71,805	71,805	-	114	-	114
2106	259,505	62,746	62,746	-	92	-	92
2107	213,843	54,557	54,557	-	75	-	75
2108	173,259	47,150	47,150	-	60	-	60
2109	137,322	40,433	40,433	-	48	-	48
2110	105,664	34,337	34,337	-	38	-	38
2111	77,960	28,838	28,838	-	30	-	30
2112	53,888	23,934	23,934	-	23	-	23
2113	33,102	19,604	19,604	-	17	-	17
2114	15,252	15,812	15,812	-	13	-	13
2115	0	-	-	-	-	-	-
				Totals	$ 3,689,500,271	$ -	$ 3,689,500,271


PROJECTION OF PLAN NET POSITION AND BENEFIT PAYMENTS AT 7.47%
END OF YEAR
$ [thousands]
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
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

SINGLE DISCOUNT RATE DEVELOPMENT
PROJECTION OF CONTRIBUTIONS AT 6.75%
END OF YEAR

Fiscal Year Ending June 30,	Projected Contributions from Current Employees	Projected Service Cost	Administrative Expense Contributions#	Projected UAL Contributions	Projected Total Contributions
2016	$ -	$ -	$ -	$ 18,300,000	$ 18,300,000
2017	-	-	-	18,300,000	18,300,000
2018	-	-	-	18,300,000	18,300,000
2019	-	-	-	18,300,000	18,300,000
2020	-	-	-	18,300,000	18,300,000
2021	-	-	-	18,300,000	18,300,000
2022	-	-	-	18,300,000	18,300,000
2023	-	-	-	18,300,000	18,300,000
2024	-	-	-	82,975,787	82,975,787
2025	-	-	-	82,975,787	82,975,787
2026	-	-	-	82,975,787	82,975,787
2027	-	-	-	82,975,787	82,975,787
2028	-	-	-	82,975,787	82,975,787
2029	-	-	-	82,975,787	82,975,787
2030	-	-	-	82,975,787	82,975,787
2031	-	-	-	82,975,787	82,975,787
2032	-	-	-	82,975,787	82,975,787
2033	-	-	-	82,975,787	82,975,787
2034	-	-	-	82,975,787	82,975,787
2035	-	-	-	82,975,787	82,975,787
2036	-	-	-	82,975,787	82,975,787
2037	-	-	-	82,975,787	82,975,787
2038	-	-	-	82,975,787	82,975,787
2039	-	-	-	82,975,787	82,975,787
2040	-	-	-	82,975,787	82,975,787
2041	-	-	-	82,975,787	82,975,787
2042	-	-	-	82,975,787	82,975,787
2043	-	-	-	82,975,787	82,975,787
2044	-	-	-	82,975,787	82,975,787
2045	-	-	-	82,975,787	82,975,787
2046	-	-	-	82,975,787	82,975,787
2047	-	-	-	82,975,787	82,975,787
2048	-	-	-	82,975,787	82,975,787
2049	-	-	-	82,975,787	82,975,787
2050	-	-	-	82,975,787	82,975,787
2051	-	-	-	82,975,787	82,975,787
2052	-	-	-	82,975,787	82,975,787
2053	-	-	-	82,975,787	82,975,787
2054	-	-	-	-	-
2055	-	-	-	-	-
2056	-	-	-	-	-
2057	-	-	-	-	-
2058	-	-	-	-	-
2059	-	-	-	-	-
2060	-	-	-	-	-
2061	-	-	-	-	-
2062	-	-	-	-	-
2063	-	-	-	-	-
2064	-	-	-	-	-
2065	-	-	-	-	-

Investment return is assumed to be net of expenses.

SINGLE DISCOUNT RATE DEVELOPMENT
PROJECTION OF PLAN FIDUCIARY NET POSITION AT 6.75%
END OF YEAR

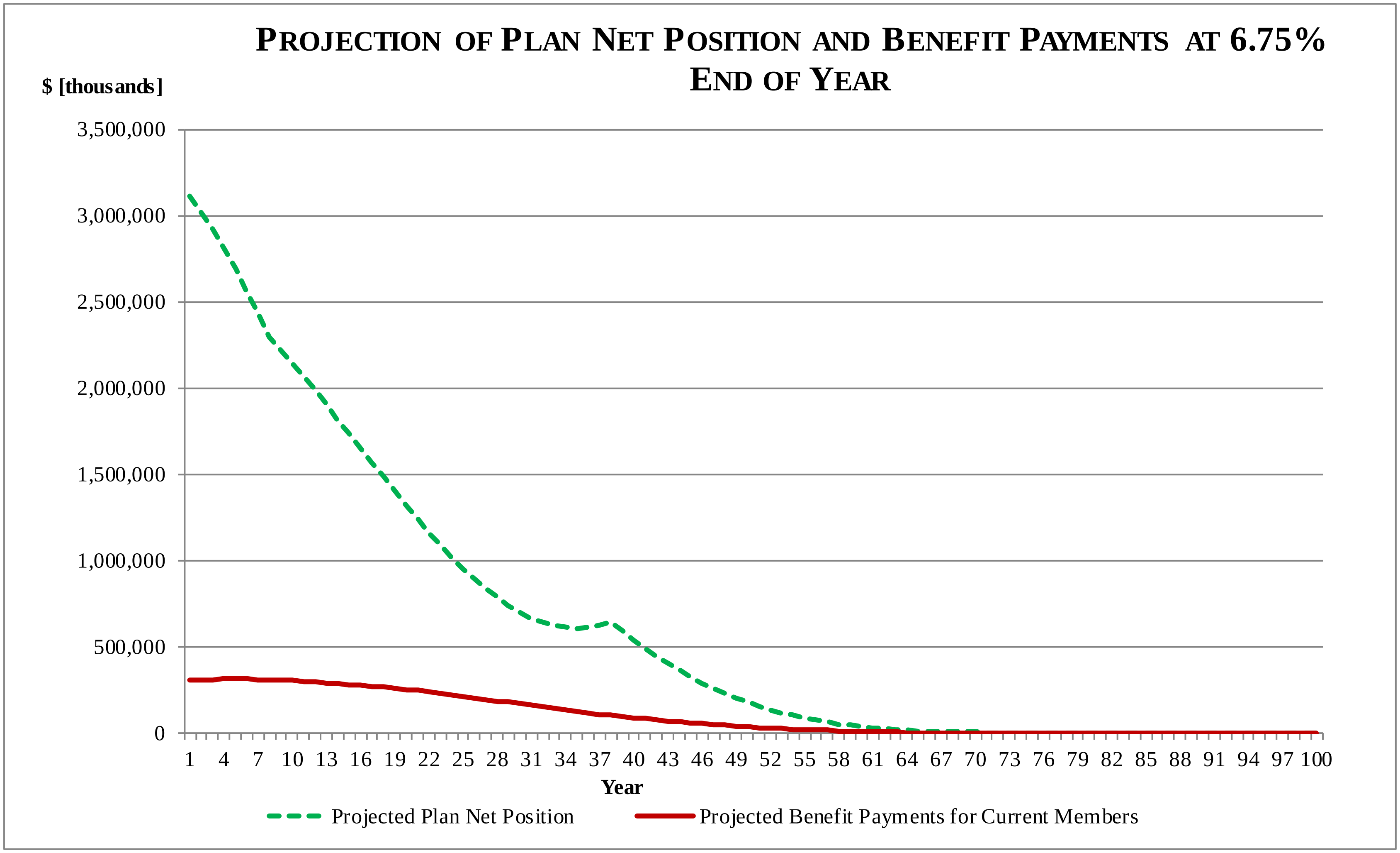
Fiscal Year Ending June 30,	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 6.75%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2016	$ 3,194,754,441	$ 18,300,000	$ 309,149,750	$ -	$ 205,990,028	$ 3,109,894,719
2017	3,109,894,719	18,300,000	309,429,965	-	200,252,694	3,019,017,449
2018	3,019,017,449	18,300,000	312,427,000	-	194,018,980	2,918,909,429
2019	2,918,909,429	18,300,000	316,715,172	-	187,119,326	2,807,613,583
2020	2,807,613,583	18,300,000	316,021,842	-	179,629,874	2,689,521,615
2021	2,689,521,615	18,300,000	314,431,468	-	171,711,465	2,565,101,612
2022	2,565,101,612	18,300,000	311,767,449	-	163,401,558	2,435,035,721
2023	2,435,035,721	18,300,000	309,437,495	-	154,699,462	2,298,597,688
2024	2,298,597,688	82,975,787	306,972,847	-	147,718,884	2,222,319,513
2025	2,222,319,513	82,975,787	303,489,377	-	142,685,755	2,144,491,678
2026	2,144,491,678	82,975,787	299,821,826	-	137,554,135	2,065,199,775
2027	2,065,199,775	82,975,787	296,071,982	-	132,326,422	1,984,430,003
2028	1,984,430,003	82,975,787	292,106,359	-	127,006,117	1,902,305,548
2029	1,902,305,548	82,975,787	287,709,676	-	121,608,681	1,819,180,342
2030	1,819,180,342	82,975,787	282,872,305	-	116,158,325	1,735,442,149
2031	1,735,442,149	82,975,787	277,672,562	-	110,678,623	1,651,423,999
2032	1,651,423,999	82,975,787	272,073,568	-	105,193,279	1,567,519,497
2033	1,567,519,497	82,975,787	266,121,000	-	99,727,344	1,484,101,628
2034	1,484,101,628	82,975,787	259,741,412	-	94,308,433	1,401,644,436
2035	1,401,644,436	82,975,787	252,995,394	-	88,966,533	1,320,591,362
2036	1,320,591,362	82,975,787	245,902,026	-	83,730,942	1,241,396,066
2037	1,241,396,066	82,975,787	238,359,045	-	78,635,679	1,164,648,487
2038	1,164,648,487	82,975,787	230,461,151	-	73,717,419	1,090,880,542
2039	1,090,880,542	82,975,787	222,331,580	-	69,007,975	1,020,532,725
2040	1,020,532,725	82,975,787	213,902,612	-	64,539,330	954,145,231
2041	954,145,231	82,975,787	205,273,255	-	60,344,660	892,192,423
2042	892,192,423	82,975,787	196,418,510	-	56,456,813	835,206,514
2043	835,206,514	82,975,787	187,416,982	-	52,909,105	783,674,425
2044	783,674,425	82,975,787	178,337,813	-	49,732,108	738,044,507
2045	738,044,507	82,975,787	169,260,361	-	46,953,450	698,713,384
2046	698,713,384	82,975,787	160,241,849	-	44,598,004	666,045,326
2047	666,045,326	82,975,787	151,347,541	-	42,688,191	640,361,763
2048	640,361,763	82,975,787	142,619,783	-	41,244,303	621,962,070
2049	621,962,070	82,975,787	134,106,619	-	40,284,952	611,116,190
2050	611,116,190	82,975,787	125,853,921	-	39,826,835	608,064,892
2051	608,064,892	82,975,787	117,880,272	-	39,885,589	613,045,997
2052	613,045,997	82,975,787	110,203,936	-	40,476,660	626,294,508
2053	626,294,508	82,975,787	102,836,422	-	41,615,528	648,049,401
2054	648,049,401	-	95,782,116	-	40,563,472	592,830,757
2055	592,830,757	-	89,041,495	-	37,059,995	540,849,258
2056	540,849,258	-	82,609,389	-	33,764,783	492,004,651
2057	492,004,651	-	76,477,434	-	30,671,346	446,198,564
2058	446,198,564	-	70,635,525	-	27,773,380	403,336,419
2059	403,336,419	-	65,073,323	-	25,064,844	363,327,940
2060	363,327,940	-	59,781,200	-	22,539,965	326,086,705
2061	326,086,705	-	54,750,410	-	20,193,198	291,529,493
2062	291,529,493	-	49,973,788	-	18,019,165	259,574,871
2063	259,574,871	-	45,446,337	-	16,012,535	230,141,069
2064	230,141,069	-	41,165,267	-	14,167,880	203,143,682
2065	203,143,682	-	37,129,692	-	12,479,533	178,493,522

SINGLE DISCOUNT RATE DEVELOPMENT
PRESENT VALUES OF PROJECTED BENEFITS AT 6.75%
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)
2016	$ 3,194,754,441	$ 309,149,750	$ 309,149,750	$ -	$ 299,216,100	$ -	$ 299,216,100
2017	3,109,894,719	309,429,965	309,429,965	-	280,550,174	-	280,550,174
2018	3,019,017,449	312,427,000	312,427,000	-	265,355,962	-	265,355,962
2019	2,918,909,429	316,715,172	316,715,172	-	251,988,822	-	251,988,822
2020	2,807,613,583	316,021,842	316,021,842	-	235,538,347	-	235,538,347
2021	2,689,521,615	314,431,468	314,431,468	-	219,534,431	-	219,534,431
2022	2,565,101,612	311,767,449	311,767,449	-	203,910,470	-	203,910,470
2023	2,435,035,721	309,437,495	309,437,495	-	189,589,294	-	189,589,294
2024	2,298,597,688	306,972,847	306,972,847	-	176,186,631	-	176,186,631
2025	2,222,319,513	303,489,377	303,489,377	-	163,173,113	-	163,173,113
2026	2,144,491,678	299,821,826	299,821,826	-	151,008,177	-	151,008,177
2027	2,065,199,775	296,071,982	296,071,982	-	139,690,428	-	139,690,428
2028	1,984,430,003	292,106,359	292,106,359	-	129,104,823	-	129,104,823
2029	1,902,305,548	287,709,676	287,709,676	-	119,120,920	-	119,120,920
2030	1,819,180,342	282,872,305	282,872,305	-	109,712,501	-	109,712,501
2031	1,735,442,149	277,672,562	277,672,562	-	100,885,969	-	100,885,969
2032	1,651,423,999	272,073,568	272,073,568	-	92,601,127	-	92,601,127
2033	1,567,519,497	266,121,000	266,121,000	-	84,847,917	-	84,847,917
2034	1,484,101,628	259,741,412	259,741,412	-	77,577,423	-	77,577,423
2035	1,401,644,436	252,995,394	252,995,394	-	70,784,616	-	70,784,616
2036	1,320,591,362	245,902,026	245,902,026	-	64,449,639	-	64,449,639
2037	1,241,396,066	238,359,045	238,359,045	-	58,522,401	-	58,522,401
2038	1,164,648,487	230,461,151	230,461,151	-	53,005,428	-	53,005,428
2039	1,090,880,542	222,331,580	222,331,580	-	47,902,247	-	47,902,247
2040	1,020,532,725	213,902,612	213,902,612	-	43,172,077	-	43,172,077
2041	954,145,231	205,273,255	205,273,255	-	38,810,687	-	38,810,687
2042	892,192,423	196,418,510	196,418,510	-	34,788,323	-	34,788,323
2043	835,206,514	187,416,982	187,416,982	-	31,095,113	-	31,095,113
2044	783,674,425	178,337,813	178,337,813	-	27,717,800	-	27,717,800
2045	738,044,507	169,260,361	169,260,361	-	24,643,517	-	24,643,517
2046	698,713,384	160,241,849	160,241,849	-	21,855,236	-	21,855,236
2047	666,045,326	151,347,541	151,347,541	-	19,336,908	-	19,336,908
2048	640,361,763	142,619,783	142,619,783	-	17,069,608	-	17,069,608
2049	621,962,070	134,106,619	134,106,619	-	15,035,785	-	15,035,785
2050	611,116,190	125,853,921	125,853,921	-	13,218,274	-	13,218,274
2051	608,064,892	117,880,272	117,880,272	-	11,597,951	-	11,597,951
2052	613,045,997	110,203,936	110,203,936	-	10,157,091	-	10,157,091
2053	626,294,508	102,836,422	102,836,422	-	8,878,740	-	8,878,740
2054	648,049,401	95,782,116	95,782,116	-	7,746,774	-	7,746,774
2055	592,830,757	89,041,495	89,041,495	-	6,746,228	-	6,746,228
2056	540,849,258	82,609,389	82,609,389	-	5,863,138	-	5,863,138
2057	492,004,651	76,477,434	76,477,434	-	5,084,709	-	5,084,709
2058	446,198,564	70,635,525	70,635,525	-	4,399,346	-	4,399,346
2059	403,336,419	65,073,323	65,073,323	-	3,796,645	-	3,796,645
2060	363,327,940	59,781,200	59,781,200	-	3,267,336	-	3,267,336
2061	326,086,705	54,750,410	54,750,410	-	2,803,165	-	2,803,165
2062	291,529,493	49,973,788	49,973,788	-	2,396,821	-	2,396,821
2063	259,574,871	45,446,337	45,446,337	-	2,041,853	-	2,041,853
2064	230,141,069	41,165,267	41,165,267	-	1,732,561	-	1,732,561
2065	203,143,682	37,129,692	37,129,692	-	1,463,899	-	1,463,899

SINGLE DISCOUNT RATE DEVELOPMENT
PRESENT VALUES OF PROJECTED BENEFITS AT 6.75% (CONCLUDED)
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)
2066	$ 178,493,522	$ 33,339,584	$ 33,339,584	$ -	$ 1,231,352	$ -	$ 1,231,352
2067	156,095,413	29,794,379	29,794,379	-	1,030,833	-	1,030,833
2068	135,848,333	26,493,159	26,493,159	-	858,657	-	858,657
2069	117,645,393	23,434,711	23,434,711	-	711,505	-	711,505
2070	101,373,738	20,616,929	20,616,929	-	586,373	-	586,373
2071	86,915,077	18,036,599	18,036,599	-	480,548	-	480,548
2072	74,146,450	15,688,425	15,688,425	-	391,556	-	391,556
2073	62,942,072	13,565,590	13,565,590	-	317,165	-	317,165
2074	53,174,709	11,660,053	11,660,053	-	255,376	-	255,376
2075	44,716,847	9,962,123	9,962,123	-	204,391	-	204,391
2076	37,442,380	8,460,609	8,460,609	-	162,609	-	162,609
2077	31,228,248	7,142,993	7,142,993	-	128,604	-	128,604
2078	25,956,022	5,995,426	5,995,426	-	101,118	-	101,118
2079	21,513,586	5,003,970	5,003,970	-	79,060	-	79,060
2080	17,795,657	4,154,923	4,154,923	-	61,494	-	61,494
2081	14,704,001	3,433,814	3,433,814	-	47,608	-	47,608
2082	12,148,708	2,826,591	2,826,591	-	36,711	-	36,711
2083	10,048,315	2,320,003	2,320,003	-	28,226	-	28,226
2084	8,329,552	1,901,185	1,901,185	-	21,668	-	21,668
2085	6,927,494	1,557,712	1,557,712	-	16,631	-	16,631
2086	5,785,674	1,278,106	1,278,106	-	12,783	-	12,783
2087	4,855,670	1,051,929	1,051,929	-	9,856	-	9,856
2088	4,096,575	869,724	869,724	-	7,633	-	7,633
2089	3,474,496	723,205	723,205	-	5,946	-	5,946
2090	2,961,809	605,240	605,240	-	4,661	-	4,661
2091	2,536,399	509,877	509,877	-	3,679	-	3,679
2092	2,180,802	432,334	432,334	-	2,922	-	2,922
2093	1,881,319	368,786	368,786	-	2,335	-	2,335
2094	1,627,279	316,235	316,235	-	1,876	-	1,876
2095	1,410,387	272,403	272,403	-	1,513	-	1,513
2096	1,224,142	235,586	235,586	-	1,226	-	1,226
2097	1,063,364	204,521	204,521	-	997	-	997
2098	923,831	178,207	178,207	-	814	-	814
2099	802,067	155,826	155,826	-	667	-	667
2100	695,207	136,662	136,662	-	548	-	548
2101	600,935	120,133	120,133	-	451	-	451
2102	517,377	105,747	105,747	-	372	-	372
2103	443,042	93,089	93,089	-	307	-	307
2104	376,767	81,855	81,855	-	253	-	253
2105	317,627	71,805	71,805	-	208	-	208
2106	264,878	62,746	62,746	-	170	-	170
2107	217,928	54,557	54,557	-	138	-	138
2108	176,270	47,150	47,150	-	112	-	112
2109	139,453	40,433	40,433	-	90	-	90
2110	107,091	34,337	34,337	-	72	-	72
2111	78,842	28,838	28,838	-	56	-	56
2112	54,368	23,934	23,934	-	44	-	44
2113	33,310	19,604	19,604	-	34	-	34
2114	15,303	15,812	15,812	-	25	-	25
2115	0	-	-	-	-	-	-
				Totals	$ 3,955,787,818	$ -	$ 3,955,787,818


PROJECTION OF PLAN NET POSITION AND BENEFIT PAYMENTS AT 6.75%
END OF YEAR
$ [thousands]
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
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) or Annual Required Contribution (ARC)	A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically the Actuarially Determined Contribution has a normal cost payment and an amortization payment.

GLOSSARY OF TERMS

Amortization Payment	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
Amortization Method	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be "open" (meaning, reset each year) or "closed" (the number of years remaining will decline each year.
Cost-of-Living Adjustments (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 (GASB) 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 (Michigan PA 314).
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.
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.

GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

One Towne Square
Suite 800
Southfield, MI 48076-3723

248.799.9000 phone
248.799.9020 fax
www.gabrielroeder.com

February 11, 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 of Component II report of the Police and Fire Retirement System of the City of Detroit.

Sincerely,

Kenneth G. Alberts

KGA:mrb
Enclosures

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