

# The Police and Fire Retirement System of the City of Detroit

GASB Statement Nos. 67 and 68 Accounting and  
Financial Reporting for Pensions

Component I

June 30, 2019



October 22, 2019

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” and No. 68 “Employer Reporting for Pension Plans”. These calculations have been made on a basis that is consistent with our understanding of these Statements. This information is subject to review of the City’s and the System’s Auditor. Please let us know if the City’s or 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, 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 Nos. 67 and 68. The calculation of the plan’s liability for this report is not applicable for funding purposes of the plan. A calculation of the plan’s liability for purposes other than satisfying the requirements of GASB Statement Nos. 67 and 68 may produce significantly different results. In particular, this report is not a funding report and nothing in this report should be construed as a funding recommendation. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by the System staff, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. This report is based on the valuation date of June 30, 2018. The total pension liability was rolled-forward from the valuation date to the plan year ending June 30, 2019 using generally accepted actuarial principles. The asset information as of June 30, 2019 was provided by the System. This information was checked for internal consistency, but it was not audited by GRS. GRS is not responsible for the accuracy of any information provided by the Retirement System or the plan sponsor.

At the direction of the System and with approval of the System’s Auditor, the long term expected return on assets used to determine the discount rate is 7.19% net of investment expenses as of June 30, 2019, the same rate net of investment expenses as of June 30, 2018. We have reviewed this assumption based on the System’s asset allocation and have determined it to be reasonable for purposes of the measurement being taken.

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, 2019. Please see page 2 for the plan provision changes reflected in this report.

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 Nos. 67 and 68 reporting. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

The signing individuals are independent of the plan sponsor.

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

Respectfully submitted,



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# SECTION A



## EXECUTIVE SUMMARY

# Executive Summary as of June 30, 2019

Actuarial Valuation Date	June 30, 2018
Measurement Date of the Net Pension Liability	June 30, 2019
Employer's Fiscal Year Ending Date (GASB No. 68 Reporting Date)	June 30, 2020

## Membership

Number of		
- Retirees and Beneficiaries	90	
- DROP Members	112	
- Inactive, Nonretired Members	471	
- Active Members	2,575	
- Total	3,248	
Covered Payroll (excluding DROP)	\$ 146,689,948	

## Net Pension Liability

Total Pension Liability	\$ 121,704,815
Plan Fiduciary Net Position	158,967,545
Net Pension Liability	\$ (37,262,730)
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	130.62%
Net Pension Liability as a Percentage of Covered Payroll	(25.40)%

## Development of the Single Discount Rate

Single Discount Rate	7.19%
Long-Term Expected Rate of Investment Return	7.19%
Long-Term Municipal Bond Rate*	3.13%
Last year ending June 30 in the 2020 to 2119 projection period for which projected benefit payments are fully funded	2119

**Total Pension Expense** \$ 10,120,359

## Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	\$ -	\$ 14,458,894
Changes in assumptions	1,275,978	819,820
Net difference between projected and actual earnings on pension plan investments	4,212,615	2,352,380
<b>Total</b>	<b>\$ 5,488,593</b>	<b>\$ 17,631,094</b>

*\*Source: Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" as of June 28, 2019. In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax-exempt securities.*

# Discussion

## Changes to the Actuarial Assumptions

There were no changes in actuarial assumptions other than those discussed with the changes to benefit provisions. For purposes of determining the Total Pension Liability (TPL) as of June 30, 2019, we note the following differences from the June 30, 2018 funding valuation:

- At the direction of the System and approval of the Systems' Auditor, the long-term expected return on assets was 7.19% as of June 30, 2019 (it was 6.75% in the June 30, 2018 funding valuation, as required by the Plan of Adjustment).
- There was an administrative change involving the allocation of administrative expenses between Component I and Component II. Administrative expenses are now shared 60% with Component II and 40% with Component I. This change was reflected in our modeling, where appropriate.

## Changes to the Benefit Provisions

We understand that new DROP plan provisions have been adopted. The new provisions allow DPLSA (Detroit Police Lieutenants and Sergeants Association) members to participate in the DROP program for a maximum of 10 years, up from the prior maximum of five (5) years. We modeled this change by changing the DROP assumptions for this group. For eligible DPLSA members, it was assumed that 65% of members would DROP and would stay in DROP for an average of seven (7) years. The change in the DROP provision combined with the corresponding change in the DROP assumption resulted in a \$0.5 million decrease in the TPL.

## Funding

Employee contributions are initially set to 6.0% of pay for members hired before June 30, 2014 and 8.0% of pay for members hired after June 30, 2014, but can be increased if necessary to maintain funding levels at 100%. Employer contributions are initially set at 12.25% of payroll. Employer contributions are actuarially determined beginning in fiscal year 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 a five-year projection shows the plan funded status as above 90% based upon a 6.75% future investment return. It is reasonable to assume that there will be years in which a 1% compound COLA will be granted, however, it is unlikely to be granted every year. For purposes of the TPL, we have, therefore, assumed a 0.50% compound COLA beginning July 1, 2019 to model the potential average COLA over time. In the notes section we also report the TPL based on a 0% VPIF and a 1% compound VPIF.

## DROP Plan

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

# Discussion

## Accounting Standard

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

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

## Financial Statements

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

Paragraph 57 of GASB Statement No. 68 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to the System subsequent to the measurement date of June 30, 2019.

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

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



# Discussion

## Notes to Financial Statements

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

Both GASB Statements, No. 67 and No. 68 require the notes of the financial statements for the employers and pension plans to include certain additional information. The list of disclosure items should include:

- a description of the types of benefits provided by the plan, as well as automatic or ad hoc COLAs;
- the number and classes of employees covered by the benefit terms;
- for the current year, sources of changes in the net pension liability;
- significant assumptions and methods used to calculate the total pension liability;
- inputs to the Single Discount Rate;
- certain information about mortality assumptions and the dates of experience studies;
- the date of the valuation used to determine the total pension liability;
- information about changes of assumptions or other inputs and benefit terms;
- the basis for determining contributions to the plan, including a description of the plan's funding policy, as well as member and employer contribution requirements;
- the total pension liability, fiduciary net position, net pension liability, and the pension plan's fiduciary net position as a percentage of the total pension liability;
- the net pension liability using a discount rate that is 1% higher and 1% lower than used to calculate the total pension liability and net pension liability for financial reporting purposes;
- a description of the system that administers the pension plan; and
- a description of the terms of the plan's Deferred Retirement Option Program (DROP) and the total DROP balance for those members currently participating in the DROP. ***Current DROP balances for members of this plan are not available and are not included. These balances are also excluded from the reported assets.***

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

- the composition of the pension plan's Board and the authority under which benefit terms may be amended;
- the pension plan's investment policies;
- the portion of present value of benefits to be provided through the pension plan to current active and inactive plan members;
- a description of how fair value is determined; and
- information regarding certain reserves and investments, which include concentrations of investments greater than or equal to 5%, receivables, and insurance contracts excluded from plan assets.

# Discussion

## 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 table from prior financial statements

## Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. The net pension liability and pension expense should be measured as of the pension plan's fiscal year end (measurement date) on a date that is within the employer's prior fiscal year. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date. The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2018 and rolled-forward to the plan year end date of June 30, 2019.

## Single Discount Rate

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

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.19%; the municipal bond rate is 3.13% (based on the daily rate closest to but not later than the measurement date of the Fidelity "20-Year Municipal GO AA Index" from the Fidelity Index); and the resulting Single Discount Rate is 7.19% as of June 30, 2019. 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 0.50% compound each year.
- 3) Mandatory employee contributions were assumed to be fixed at the current rate of 6% for members hired before June 30, 2014 and 8% for members hired after June 30, 2014.
- 4) The VPIF reduction under Section 9.5 of the plan was assumed not to occur.
- 5) Employer contributions were determined in a manner to fully fund the plan beginning in 2024, in accordance with the plan.

# Discussion

## 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 (130.62% as of June 30, 2019). 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 contributions.

## Limitations of Project Scope

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

## 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.

## Comparisons to Funding Valuation

Because of a difference in the actuarial funding method used in the GASB valuations vs. funding valuation as well as differences in the investment return assumption, it is likely that the June 30, 2019 funding valuation will show a lower funded status than this report and possibly will be less than 100%.

## Development of TPL, Service Cost and PE

The TPL is the entry age accrued liability of the Defined Benefit plan plus the current Voluntary Member Contribution Reserve Fund (VMCRF). The service cost is the normal cost for the defined benefit portion plus voluntary member contributions made during the year. The Pension Expense (PE) is the service cost plus interest on the TPL plus adjustments for deferred inflows and outflows and "other" changes in Plan Fiduciary Net Position, less expected income on the Plan Fiduciary Net Position less member contributions. In this way, contributions to the VMCRF should not have an effect on the PE.

## Data

Please see the June 30, 2018 actuarial valuation, pages 22-23, for a discussion regarding data work, data assumptions, and data approximations used in the underlying valuation.

## **SECTION B**

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### **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, 2019

### Assets

Cash and Cash Equivalents	\$	34,463,611
Receivables	\$	8,073,055
Investments		
Investments at Fair Value	\$	119,261,541
Cash and Investments held as Collateral for Securities Lending		11,123,019
Capital Assets - Net		776,512
Total Investments	\$	131,161,072
<b>Total Assets</b>	\$	173,697,738

### Liabilities

Payables		
Accounts Payable	\$	14,730,193
<b>Total Liabilities</b>	\$	14,730,193

<b>Total Fund Balances</b>	<b>\$</b>	<b>158,967,545</b>
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### Reported Reserve Balances

Accumulated Voluntary Employee Contribution	\$	472,248
Accumulated Mandatory Employee Contribution		41,108,990
Rate Stabilization		4,030,561
Pension Accumulation		113,355,746
<b>Total Fund</b>	<b>\$</b>	<b>158,967,545</b>

## Statement of Changes in Fiduciary Net Position for Year Ended June 30, 2019

### Additions

#### Contributions

Employer	\$ 17,832,015
Mandatory Member Pension Fund Contributions	9,489,473
Transfer from Component II	-
Voluntary Member Contributions	278,811
<b>Total Contributions</b>	<b>\$ 27,600,299</b>

#### Investment Income

Net Appreciation in Fair Value of Investments	\$ 5,384,693
Investment Income	-
Less Investment Expense	-
<b>Net Investment Income</b>	<b>\$ 5,384,693</b>

Other including Rate Stabilization	\$ 4,042,486
<b>Total Additions</b>	<b>\$ 37,027,478</b>

### Deductions

Benefit Payments, including Refunds of Employee Contributions	\$ 4,013,358
Pension Plan Administrative Expense	2,017,961
Other	-
<b>Total Deductions</b>	<b>\$ 6,031,319</b>

<b>Net Increase in Net Position</b>	<b>\$ 30,996,159</b>
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Total Fund Balances Beginning of Year	\$ 127,971,386
Total Fund Balances End of Year	\$ 158,967,545

Estimated Market Rate of Return	3.8%
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# Statement of Pension Expense Under GASB Statement No. 68 Fiscal Year Ended June 30, 2019

## A. Expense

1. Service Cost *	\$	26,942,435
2. Interest on the Total Pension Liability		7,633,137
3. Current-Period Benefit Changes		(518,835)
4. Employee Contributions (made negative for addition here)*		(9,768,284)
5. Projected Earnings on Plan Investments (made negative for addition here)		(10,121,875)
6. Pension Plan Administrative Expense		2,017,961
7. Other Changes in Plan Fiduciary Net Position		(4,042,486)
8. Recognition of Outflow (Inflow) of Resources due to Liabilities		(2,465,954)
9. Recognition of Outflow (Inflow) of Resources due to Assets		444,260
<b>10. Total Pension Expense</b>	<b>\$</b>	<b>10,120,359</b>

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

# Statement of Outflows and Inflows Arising from Current Reporting Period Fiscal Year Ended June 30, 2019

## A. Outflows (Inflows) of Resources due to Liabilities

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$ (3,122,804)
2. Assumption Changes (gains) or losses	\$ -
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	8.7536
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability	\$ (356,745)
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$ -
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	<u>\$ (356,745)</u>
7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the difference between expected and actual experience of the Total Pension Liability	\$ (2,766,059)
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$ -
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	<u>\$ (2,766,059)</u>

## B. Outflows (Inflows) of Resources due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ 4,737,182
2. Recognition period for Assets {in years}	5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	\$ 947,436
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	<u>\$ 3,789,746</u>



# Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended June 30, 2019

## A. Outflows and Inflows of Resources due to Liabilities and Assets to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Due to Liabilities	\$ 287,020	\$ 2,752,974	\$ (2,465,954)
2. Due to Assets	1,519,504	1,075,244	444,260
<b>3. Total</b>	<b>\$ 1,806,524</b>	<b>\$ 3,828,218</b>	<b>\$ (2,021,694)</b>

## B. Outflows and Inflows of Resources by Source to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ -	\$ 2,577,461	\$ (2,577,461)
2. Assumption Changes	287,020	175,513	111,507
3. Net Difference between projected and actual earnings on pension plan investments	1,519,504	1,075,244	444,260
<b>4. Total</b>	<b>\$ 1,806,524</b>	<b>\$ 3,828,218</b>	<b>\$ (2,021,694)</b>

## C. Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows of Resources
1. Differences between expected and actual experience	\$ -	\$ 14,458,894	\$ (14,458,894)
2. Assumption Changes	1,275,978	819,820	456,158
3. Net Difference between projected and actual earnings on pension plan investments	4,212,615	2,352,380	1,860,235
<b>4. Total</b>	<b>\$ 5,488,593</b>	<b>\$ 17,631,094</b>	<b>\$ (12,142,501)</b>

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

Year Ending June 30	Net Deferred Outflows of Resources
2020	\$ (2,170,893)
2021	(2,593,761)
2022	(1,720,411)
2023	(1,516,340)
2024	(2,245,186)
Thereafter	(1,895,910)
<b>Total</b>	<b>\$ (12,142,501)</b>

# Recognition of Deferred Outflows and Inflows of Resources

## Fiscal Year Ended June 30, 2019

Year Established	Initial Amount	Initial Recognition Period	Current Year Recognition	Remaining Recognition	Remaining Recognition Period
<b>Deferred Outflow (Inflow) due to Differences Between Expected and Actual Experience on Liabilities</b>					
2015	\$ -	8.9806	\$ -	\$ -	3.9806
2016	(4,077,124)	8.4456	(482,751)	(2,146,120)	4.4456
2017	(10,708,737)	8.1862	(1,308,145)	(6,784,302)	5.1862
2018	(3,622,053)	8.4269	(429,820)	(2,762,413)	6.4269
2019	(3,122,804)	8.7536	(356,745)	(2,766,059)	7.7536
<b>Total</b>			<b>\$ (2,577,461)</b>	<b>\$ (14,458,894)</b>	
<b>Deferred Outflow (Inflow) due to Assumption Changes</b>					
2015	\$ (1,008,119)	8.9806	\$ (112,255)	\$ (446,844)	3.9806
2016	2,424,058	8.4456	287,020	1,275,978	4.4456
2017	(221,533)	8.1862	(27,062)	(140,347)	5.1862
2018	(305,021)	8.4269	(36,196)	(232,629)	6.4269
2019	-	8.7536	-	-	7.7536
<b>Total</b>			<b>\$ 111,507</b>	<b>\$ 456,158</b>	
<b>Deferred Outflow (Inflow) due to Differences Between Projected and Actual Earnings on Plan Investments</b>					
2015	\$ 746,013	5.0000	\$ 149,201	\$ -	0.0000
2016	2,114,337	5.0000	422,867	422,869	1.0000
2017	(4,366,764)	5.0000	(873,353)	(1,746,705)	2.0000
2018	(1,009,457)	5.0000	(201,891)	(605,675)	3.0000
2019	4,737,182	5.0000	947,436	3,789,746	4.0000
<b>Total</b>			<b>\$ 444,260</b>	<b>\$ 1,860,235</b>	

## SECTION C

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### **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.

# Schedule of Changes in Net Pension Liability (Asset) and Related Ratios Current Period Fiscal Year Ended June 30, 2019

<b>A. Total Pension Liability</b>	
1. Service cost	
1a. Normal Cost	\$ 26,663,624
1b. Voluntary Employee Contributions	278,811
1c. Service Cost (Total)	<u>\$ 26,942,435</u>
2. Interest on the Total Pension Liability	7,633,137
3. Changes of benefit terms	(518,835)
4. Difference between expected and actual experience of the Total Pension Liability	(3,122,804)
5. Changes of assumptions	0
6. Benefit payments, including refunds of employee contributions	(4,013,358)
7. Net change in Total Pension Liability	<u>\$ 26,920,575</u>
8. Total Pension Liability – Beginning	94,784,240
9. Total Pension Liability – Ending	<u><u>\$ 121,704,815</u></u>
<b>B. Plan Fiduciary Net Position</b>	
1. Contributions – Employer	\$ 17,832,015
2. Contributions – Employee	9,768,284
3. Net investment income	5,384,693
4. Benefit payments, including refunds of employee contributions	(4,013,358)
5. Pension plan administrative expense	(2,017,961)
6. Other	4,042,486
7. Net change in Plan Fiduciary Net Position	<u>\$ 30,996,159</u>
8. Plan Fiduciary Net Position – Beginning	127,971,386
9. Plan Fiduciary Net Position – Ending	<u><u>\$ 158,967,545</u></u>
<b>C. Net Pension Liability</b>	<u><u>\$ (37,262,730)</u></u>
<b>D. Plan Fiduciary Net Position as a percentage of the Total Pension Liability</b>	<b>130.62%</b>
<b>E. Covered-Employee Payroll</b>	<b>\$ 146,689,948</b>
<b>F. Net Pension Liability as a percentage of Covered-Employee Payroll</b>	<b>(25.40)%</b>

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 (Asset) shown here has not been adjusted for any potential special funding situation.

# Schedules of Required Supplementary Information

## Schedule of Changes in Net Pension Liability (Asset) and Related Ratios Multiyear

Ultimately 10 Fiscal Years Will Be Displayed

Fiscal year ending June 30,	2019	2018	2017	2016	2015
<b>Total Pension Liability</b>					
Service Cost					
1a. Normal Cost	\$ 26,663,624	\$ 24,811,302	\$ 25,401,685	\$ 24,068,808	\$ 24,835,814
1b. Voluntary Employee Contributions	278,811	96,205	46,631	15,459	14,370
1c. Service Cost (Total)	\$ 26,942,435	\$ 24,907,507	\$ 25,448,316	\$ 24,084,267	\$ 24,850,184
Interest on the Total Pension Liability (and Service Cost)	7,633,137	5,787,404	4,474,574	2,743,066	894,089
Benefit Changes	(518,835)	-	-	-	-
Difference between Expected and Actual Experience	(3,122,804)	(3,622,053)	(10,708,737)	(4,077,124)	-
Assumption Changes	-	(305,021)	(221,533)	2,424,058	(1,008,119)
Benefit Payments	(3,617,625)	(345,297)	(137,325)	(63,883)	-
Refunds	(395,733)	(216,264)	(86,501)	(37,368)	-
<b>Net Change in Total Pension Liability</b>	26,920,575	26,206,276	18,768,794	25,073,016	24,736,154
<b>Total Pension Liability - Beginning</b>	94,784,240	68,577,964	49,809,170	24,736,154	-
<b>Total Pension Liability - Ending (a)</b>	<u>\$ 121,704,815</u>	<u>\$ 94,784,240</u>	<u>\$ 68,577,964</u>	<u>\$ 49,809,170</u>	<u>\$ 24,736,154</u>
<b>Plan Fiduciary Net Position</b>					
Employer Contributions	\$ 17,832,015	\$ 19,244,806	\$ 16,448,246	\$ 15,955,915	\$ 14,606,971
Employee Contributions	9,489,473	9,074,671	8,554,893	7,834,119	7,390,335
Voluntary Employee Contributions	278,811	96,205	34,134	15,459	14,370
Pension Plan Net Investment Income	5,384,693	8,634,498	8,897,790	252,125	21,019
Benefit Payments	(3,617,625)	(345,297)	(137,325)	(63,883)	(19,554)
Refunds	(395,733)	(216,264)	(86,501)	(37,368)	-
Pension Plan Administrative Expense	(2,017,961)	(1,928,606)	(2,648,040)	(3,000,369)	(685,677)
Other	4,042,486	55,353	20,009,060	301	-
<b>Net Change in Plan Fiduciary Net Position</b>	30,996,159	34,615,366	51,072,257	20,956,299	21,327,464
<b>Plan Fiduciary Net Position - Beginning</b>	127,971,386	93,356,020	42,283,763	21,327,464	-
<b>Plan Fiduciary Net Position - Ending (b)</b>	<u>\$ 158,967,545</u>	<u>\$ 127,971,386</u>	<u>\$ 93,356,020</u>	<u>\$ 42,283,763</u>	<u>\$ 21,327,464</u>
<b>Net Pension Liability (Asset) - Ending (a) - (b)</b>	(37,262,730)	(33,187,146)	(24,778,056)	7,525,407	3,408,690
<b>Plan Fiduciary Net Position as a Percentage of Total Pension Liability</b>	130.62 %	135.01 %	136.13 %	84.89 %	86.22 %
<b>Covered-Employee Payroll (excluding DROP)</b>	\$ 146,689,948	\$ 141,225,328	\$ 128,837,649	\$ 131,695,469	\$ 132,566,687
<b>Net Pension Liability (Asset) as a Percentage of Covered-Employee Payroll</b>	(25.40)%	(23.50)%	(19.23)%	5.71 %	2.57 %
<b>Notes to Schedule:</b>	N/A	N/A	N/A	N/A	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 (Asset) shown here has not been adjusted for any potential special funding situation.

# Schedules of Required Supplementary Information

## Schedule of the Net Pension Liability (Asset) Multiyear

### Ultimately 10 Fiscal Years Will Be Displayed

FY Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability (Asset)	Plan Net Position as a % of Total Pension Liability	Covered Payroll*	Net Pension Liability (Asset) as a % of Covered Payroll
2015	\$ 24,736,154	\$ 21,327,464	\$ 3,408,690	86.22%	\$ 132,566,687	2.57%
2016	49,809,170	42,283,763	7,525,407	84.89%	131,695,469	5.71%
2017	68,577,964	93,356,020	(24,778,056)	136.13%	128,837,649	(19.23)%
2018	94,784,240	127,971,386	(33,187,146)	135.01%	141,225,328	(23.50)%
2019	121,704,815	158,967,545	(37,262,730)	130.62%	146,689,948	(25.40)%

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

## Schedule of Contributions Multiyear

FY Ending June 30,	Actuarially Determined Contribution <sup>#</sup>	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll*	Actual Contribution as a % of Covered Payroll
2015	N/A	\$ 14,606,971	N/A	\$ 132,566,687	11.02%
2016	N/A	15,831,763	N/A	131,695,469	12.02%
2017	N/A	16,448,246	N/A	128,837,649	12.77%
2018	N/A	19,244,806	N/A	141,225,328	13.63%
2019	N/A	17,832,015	N/A	146,689,948	12.16%

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

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

## Notes to Schedule of Contributions

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

## Schedule of Investment Returns

This information should be provided by the plan's investment consultant.

## Rate Stabilization Fund (RSF)

The RSF, as defined in Section 9.2(4) of the Combined PFRS Plan, is currently \$4,030,561.



## SECTION D

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### 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 7.19% was used to measure the total pension liability as of June 30, 2019. This Single Discount Rate was based on the expected rate of return on pension plan investments of 7.19% as directed by the System and the System's Auditor. The projection of cash flows used to determine this Single Discount Rate assumed that plan member contributions will be made at 6% of compensation for members hired before June 30, 2014 and 8% for members hired after June 30, 2014 and that employer contributions will be made at 12.25% of compensation through June 30, 2023. Beyond 2023, the employer contributions will be actuarially determined, however, the Board does not have a funding policy at this time. For purposes of the GASB projections only, the employer contribution shown in this report is the rate which, when applied to the closed group payroll, is sufficient to fund the benefits. The rate as determined is 7.36% 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 contributions that result from applying the current funding approach to the methods required under GASB Statement Nos. 67 and 68 should not be interpreted as a funding recommendation or requirement. Different contributions will result when applying the same funding approach to the methods and assumptions used in the funding valuation. 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 (Asset) (NPL(A)) to changes in the Single Discount Rate, the following presents the plan's NPL(A), calculated using a Single Discount Rate of 7.19%, as well as what the plan's NPL(A) 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 (Asset) to the Single Discount Rate Assumption

	1% Decrease 6.19%	Current Single Discount Rate Assumption 7.19%	1% Increase 8.19%
Total Pension Liability	\$144,195,783	\$121,704,815	\$103,727,447
Net Position Restricted for Pensions	158,967,545	158,967,545	158,967,545
Net Pension Liability (Asset)	\$(14,771,762)	\$(37,262,730)	\$(55,240,098)

### Expected Real Returns by Asset Class

This information should be provided by the plan's investment consultant.

## Summary of Population Statistics

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	90
DROP Members	112
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	471
Active Plan Members	<u>2,575</u>
Total Plan Members	3,248

Additional information regarding the plan population may be found in the June 30, 2018 actuarial valuation of the System.

### Additional Note

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

The Total Pension Liability is sensitive to the assumption regarding the VPIF. The sensitivity may increase as the plan matures. To illustrate the sensitivity, we are showing the Total Pension Liability below based on two alternate VPIF assumptions: 0% and 1% (the maximum amount payable). All scenarios are based on a 7.19% discount rate.

### VPIF Assumption

	<b>Minimum 0%</b>	<b>Current Assumption 0.5%</b>	<b>Maximum 1%</b>
Total Pension Liability	\$115,400,832	\$121,704,815	\$128,596,853
Net Position Restricted for Pensions	158,967,545	158,967,545	158,967,545
Net Pension Liability (Asset)	\$(43,566,713)	\$(37,262,730)	\$(30,370,692)

## **SECTION E**

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### **SUMMARY OF BENEFITS**

# Summary of Benefit Provisions (July 1, 2019)

## Plan Year

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

## Plan Membership

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

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

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

## Service Credit

**Credited Service:** A member is credited with one month of Credited Service for each calendar month in which the individual performs 140 hours or more of service for the employer as a member. Credited Service is recorded from the later of July 1, 2014, or the date of employment with the City as a Police Officer or Firefighter. A member also receives 1 month of Credited Service for each month the member is eligible to receive duty disability benefits, until such time as the member has 25 years of credited service.

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

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

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

# Summary of Benefit Provisions (Continued)

## Average Final Compensation

**Compensation:** Compensation is base salary, excluding bonuses, overtime, sick leave, longevity pay, unused vacation time, etc. Compensation includes deferred compensation and “picked up” employee contributions to the Retirement System. Compensation is limited by IRC Section 401(a)(17).

**Average Final Compensation:** The average of the compensation received during the 5 consecutive years of Credited Service (including Prior Service) immediately preceding the date of the member’s last termination of City employment as a Police Officer or Firefighter. If the member has less than 5 years of Credited Service (including Prior Service), the Average Final Compensation is the average of the compensation received during all years of Credited Service.

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

## Normal Retirement

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

Fiscal Year	Age and Eligibility 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<sup>th</sup> of final compensation payable until age 18. If there are more than two surviving children, each receives an equal share of 7/33rds of final compensation, payable to age 18 and redistributed to the remaining children upon attainment of age 18. The sum of all benefits payable shall not exceed 2/3rds of the member's Final Compensation. If there is no surviving spouse, each surviving child under age 18 receives a pension of 1/4<sup>th</sup> 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<sup>th</sup> 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.

## Summary of Benefit Provisions (Continued)

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

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

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

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

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

**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**

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### **ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS**

## Funding Methods

**The entry age actuarial cost method** was used in determining liabilities and normal cost as prescribed by GASB Statement Nos. 67 and 68. Under this method, each individual's service cost is determined as a level percent of pay from plan inception to DROP or termination of active service. This method is used in this report to comply with the GASB Standards and differs from the method used for funding the plan.

**Projection of Employer Contributions.** Actual employer contributions through June 30, 2023 are set at 12.25% of pay. The amortization period and method after 2023 has not yet been established by the Board. Additional funding for Transition Costs may occur as a result of Component II ASF transfers. 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.

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**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. Please see the June 30, 2018 actuarial valuation report dated March 18, 2019 (Section E) for a description of any data adjustments that were made by the actuary.

# 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, 2019 TPL:*

**The investment return rate** used in the valuation was 7.19% per year, compounded annually (net after expenses). This is a prescribed assumption set by the Retirement System.

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

**Price Inflation** is not directly used in the valuation. For purposes of assessing the reasonableness of the assumed rate of return, we assumed price inflation of 2.50% per year.

## 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 31 through 33. 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 34.

## Sample Salary Adjustment Rates

Salary Increase Assumptions for an Individual Member			
Service	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%

*\* Ultimate rate shown. Base (Economic) salary increase rates as of June 30, 2014 are assumed to be 2.00% for five years, 2.50% for the next five years after that and 3.00% thereafter.*

## Single Life Retirement Values Based on RP-2014 Blue Collar for Males and Females

Sample Attained Ages in 2018	Future Life Expectancy (years)	
	Men	Women
	45	39.59
50	34.61	37.87
55	29.81	32.94
60	25.23	28.17
65	20.88	23.56
70	16.83	19.19
75	13.12	15.16
80	9.84	11.56



# Probabilities of Service Retirement for Members Older Than Age 43 or with 17 or More Years of Credited Service (Including Prior Service) as of June 30, 2014

Service	Percent of Eligible Active Members Retiring or Entering DROP 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%

The rationale for the retirement probabilities is the 2002-2007 Experience Study modified to account for the different eligibility in Component I and split to estimate which eligibility (Component I or Component II) would influence members based on the relative service under each component.

## Probabilities of Service Retirement for Members Older Than Age 43 or with 17 or More Years of Credited Service (Including Prior Service) as of June 30, 2014

Age	Percent of Eligible Active Members Retiring or Entering DROP 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%

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

## Probabilities of Service Retirement for Members Age 43 or Younger and with Less Than 17 Years of Service on June 30, 2014

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

The rationale for the retirement probabilities is the 2002-2007 Experience Study modified to account for the different eligibility in Component I and split to estimate which eligibility (Component I or Component II) would influence members based on the relative service under each component.

## 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%

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%

## Miscellaneous and Technical Assumptions

<b>Marriage Assumption:</b>	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.
<b>Pay Increase Timing:</b>	End of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year beginning on the valuation date.
<b>Decrement Timing:</b>	Decrements are assumed to occur mid-year.
<b>Eligibility Testing:</b>	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date of decrement.
<b>Decrement Operation:</b>	Disability and mortality decrements do not operate during the first 5 years of service. Disability and withdrawal do not operate during retirement eligibility.
<b>Longevity in AFC:</b>	None
<b>Unused Sick Leave Payout:</b>	None
<b>Administrative Expense:</b>	3.0% of payroll. 40% of administrative expenses were allocated to Component I and 60% to Component II based on actual administrative expenses paid.
<b>Post-Retirement COLA:</b>	A 0.5% COLA was used to determine the SDR and TPL.
<b>Disability Change Age:</b>	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.
<b>Mandatory Retirement Age:</b>	Currently most members of the DPFRS are subject to a mandatory retirement age of 60. However, we understand that the mandatory retirement age is currently not enforced for Police members. Recent membership data indicates that very few Police members stay in employment past age 65. We have, therefore, assumed employment would end at age 65 for Police members and age 60 for Fire members regardless of the length of their DROP participation at that age.

## Miscellaneous and Technical Assumptions (Continued)

<b>DROP Assumption:</b>	Members are assumed to retire or DROP based on assumed rates. For DPLSA members, 65% of eligible members are assumed to enter the DROP and remain in the DROP for seven years. For all other active members 60% of eligible members are assumed to enter the DROP and remain in the DROP for five years. Employer contributions are assumed not to be made on DROP payroll. DROP account balances are assumed to grow at 6.75% per year.
<b>Service Credit Accruals:</b>	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.
<b>Workers Compensation Offset:</b>	No Workers compensation offsets are assumed for duty disability benefits.
<b>DROP Account:</b>	Members in the Component II DROP as of June 30, 2014 were excluded from this valuation.
<b>Class Codes/Bargaining Unit:</b>	For valuation purposes, members are categorized as DPOA, DFFA or LSA based on class codes and bargaining units provided by the Retirement System and are primarily used in the valuation to determine deferred retirement commencement.
<b>Form of Payment:</b>	No adjustment has been made for alternate forms of payment elections.
<b>Disability Load:</b>	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.
<b>IRC Section 415 Limit:</b>	We assumed that no benefits will be limited by IRC Section 415. The limit is assumed to grow with wage inflation.
<b>IRC Section 401(a)(17) Limit:</b>	All of the member salary provided falls below the current 401(a)(17) limit. The limit is assumed to grow with wage inflation.
<b>IRC Section 401(h) Limit:</b>	We did not test for the 401(h) limit on employer contributions for medical benefits. No employer contributions are anticipated in this valuation.

## Miscellaneous and Technical Assumptions (Concluded)

- COLA (VPIF):** Unless stated otherwise, liabilities in this report are based on an assumed average 0.5% future VPIF. The rationale is that COLAs are not guaranteed. This assumption was set based on scenario analysis at Plan inception and will be revised as experience emerges and the Plan evolves.
- New Entrant Assumption:** New entrants are assumed to replace the current workforce as members separate from service under current valuation assumptions. Total payroll is expected to grow with wage inflation.
- Pop-Up Benefits:** For current retirees with a pop-up benefit, the value of the pop-up was estimated by valuing a non-pop-up option and increasing the associated liabilities by 1%.

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

## **SECTION G**

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### **CALCULATION OF THE SINGLE DISCOUNT RATE**



## Calculation of the Single Discount Rate at End of Year

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

The Single Discount Rate (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.19%; the municipal bond rate is 3.13%; and the resulting Single Discount Rate is 7.19% as of June 30, 2019. 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, 2019, 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 7.36% of the closed group payroll including contributions for expenses. The actual employer rate will be determined by future funding valuations and is expected to be different when based on open group payroll. The estimated employer contribution rate of 7.36% is more than the estimated rate from the 2018 GASB report. The primary factors decreasing this estimate were the liability losses as of June 30, 2018 and losses on the market value of assets as of June 30, 2019. Member contributions were set at 6% for members hired before June 30, 2014 and at 8% for members hired after June 30, 2014. The voluntary member contributions were excluded for the projections (and assets). The VPIF was assumed to be 0.50% compound each year. The VPIF reduction under Section 9.5 of the plan was assumed not to occur. The Rate Stabilization Fund (RSF) was ignored in the development of the post-2023 employer contribution.

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, 2019, the benefit payments reflect the plan provisions in force as of June 30, 2019. Since the plan is over 100% funded on the measurement date and the RSF is assumed not to be used to reduce future contributions in the projections, the assets are projected to never be depleted.

# 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
2020	\$ 125,725,288	\$ 8,248,080	\$ 15,466,618	\$ 1,508,703	\$ (1,573,973)	\$ 23,649,428
2021	119,617,467	7,907,311	14,606,803	1,435,410	(1,389,074)	22,560,451
2022	115,604,287	7,693,561	13,949,044	1,387,251	(1,174,770)	21,855,086
2023	112,924,194	7,559,440	13,410,103	1,355,090	(931,979)	21,392,654
2024	110,433,442	7,434,635	12,878,449	1,325,201	(6,075,057)	15,563,228
2025	107,754,310	7,295,200	12,331,889	1,293,052	(5,693,549)	15,226,592
2026	104,990,773	7,150,720	11,768,159	1,259,889	(5,300,070)	14,878,698
2027	101,782,088	6,975,798	11,148,455	1,221,385	(4,878,041)	14,467,597
2028	98,241,974	6,777,401	10,505,773	1,178,904	(4,453,453)	14,008,626
2029	94,658,862	6,574,100	9,882,954	1,135,906	(4,051,375)	13,541,585
2030	91,358,682	6,387,459	9,324,708	1,096,304	(3,696,441)	13,112,030
2031	88,068,576	6,201,200	8,778,244	1,056,823	(3,352,668)	12,683,598
2032	84,468,808	5,995,380	8,180,235	1,013,626	(2,976,428)	12,212,814
2033	80,833,320	5,787,855	7,578,261	970,000	(2,598,423)	11,737,693
2034	77,428,213	5,594,252	7,038,164	929,139	(2,268,102)	11,293,454
2035	74,314,814	5,416,110	6,556,340	891,778	(1,978,083)	10,886,146
2036	71,724,807	5,268,902	6,164,152	860,698	(1,745,455)	10,548,297
2037	69,406,933	5,137,744	5,824,265	832,883	(1,548,364)	10,246,529
2038	67,250,916	5,013,589	5,518,260	807,011	(1,375,182)	9,963,678
2039	64,775,564	4,868,929	5,194,715	777,307	(1,204,135)	9,636,816
2040	61,651,815	4,677,658	4,818,496	739,822	(1,020,358)	9,215,617
2041	57,887,322	4,426,191	4,408,606	694,648	(842,385)	8,687,060
2042	52,309,694	4,023,071	3,877,198	627,716	(654,593)	7,873,392
2043	44,974,861	3,472,490	3,242,518	539,698	(471,785)	6,782,922
2044	37,657,717	2,914,398	2,652,268	451,893	(332,317)	5,686,242
2045	30,861,988	2,394,624	2,120,741	370,344	(219,449)	4,666,260
2046	24,619,544	1,915,094	1,648,870	295,435	(132,152)	3,727,247
2047	19,153,506	1,492,130	1,259,496	229,842	(79,520)	2,901,948
2048	14,482,766	1,129,445	942,096	173,793	(49,867)	2,195,467
2049	10,561,866	824,247	679,534	126,742	(28,857)	1,601,667
2050	7,509,444	586,466	476,306	90,113	(13,677)	1,139,209
2051	5,289,091	413,345	330,961	63,469	(5,119)	802,655
2052	3,669,401	287,168	226,338	44,033	(280)	557,259
2053	2,483,470	194,967	149,505	29,802	3,492	377,766
2054	1,635,143	128,808	96,111	19,622	4,624	249,165
2055	1,012,975	80,295	57,538	12,156	4,867	154,857
2056	564,308	44,980	30,551	6,772	4,214	86,516
2057	270,116	21,609	13,757	3,241	2,884	41,491
2058	102,996	8,240	4,982	1,236	1,363	15,821
2059	18,534	1,483	740	222	402	2,847
2060	1,167	93	44	14	28	179
2061	-	-	-	-	-	-
2062	-	-	-	-	-	-
2063	-	-	-	-	-	-
2064	-	-	-	-	-	-
2065	-	-	-	-	-	-
2066	-	-	-	-	-	-
2067	-	-	-	-	-	-
2068	-	-	-	-	-	-
2069	-	-	-	-	-	-

# 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	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.19%	Projected Ending Plan Net Position
Ending June 30,	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2020	\$ 158,495,297	\$ 23,649,428	\$ 2,581,829	\$ 1,508,703	\$ 12,086,750	\$ 190,140,943
2021	190,140,943	22,560,451	3,434,367	1,435,410	14,296,075	222,127,692
2022	222,127,692	21,855,086	4,260,366	1,387,251	16,543,527	254,878,687
2023	254,878,687	21,392,654	5,219,143	1,355,090	18,849,254	288,546,362
2024	288,546,362	15,563,228	6,302,676	1,325,201	21,026,808	317,508,520
2025	317,508,520	15,226,592	7,558,825	1,293,052	23,054,056	346,937,291
2026	346,937,291	14,878,698	8,970,473	1,259,889	25,108,999	376,694,626
2027	376,694,626	14,467,597	10,383,721	1,221,385	27,185,464	406,742,580
2028	406,742,580	14,008,626	11,944,130	1,178,904	29,276,076	436,904,247
2029	436,904,247	13,541,585	13,759,055	1,135,906	31,365,606	466,916,478
2030	466,916,478	13,112,030	15,700,542	1,096,304	33,441,125	496,672,786
2031	496,672,786	12,683,598	17,791,614	1,056,823	35,492,994	526,000,941
2032	526,000,941	12,212,814	20,119,571	1,013,626	37,504,346	554,584,904
2033	554,584,904	11,737,693	22,564,884	970,000	39,457,907	582,245,620
2034	582,245,620	11,293,454	24,864,159	929,139	41,351,238	609,097,014
2035	609,097,014	10,886,146	26,958,246	891,778	43,194,809	635,327,944
2036	635,327,944	10,548,297	28,931,445	860,698	45,000,270	661,084,369
2037	661,084,369	10,246,529	30,814,624	832,883	46,775,954	686,459,346
2038	686,459,346	9,963,678	32,656,488	807,011	48,526,271	711,485,796
2039	711,485,796	9,636,816	34,546,969	777,307	50,248,393	736,046,729
2040	736,046,729	9,215,617	36,468,060	739,822	51,932,904	759,987,368
2041	759,987,368	8,687,060	38,633,079	694,648	53,560,678	782,907,379
2042	782,907,379	7,873,392	41,432,719	627,716	55,083,348	803,803,684
2043	803,803,684	6,782,922	44,746,548	539,698	56,433,315	821,733,674
2044	821,733,674	5,686,242	48,209,087	451,893	57,564,524	836,323,461
2045	836,323,461	4,666,260	51,658,411	370,344	58,458,528	847,419,494
2046	847,419,494	3,727,247	54,938,547	295,435	59,109,933	855,022,691
2047	855,022,691	2,901,948	58,020,168	229,842	59,520,904	859,195,533
2048	859,195,533	2,195,467	60,881,691	173,793	59,696,868	860,032,384
2049	860,032,384	1,601,667	63,392,997	126,742	59,649,008	857,763,320
2050	857,763,320	1,139,209	65,431,625	90,113	59,398,803	852,779,594
2051	852,779,594	802,655	66,966,519	63,469	58,975,304	845,527,565
2052	845,527,565	557,259	68,134,754	44,033	58,404,631	836,310,668
2053	836,310,668	377,766	69,007,108	29,802	57,705,282	825,356,806
2054	825,356,806	249,165	69,575,346	19,622	56,893,442	812,904,444
2055	812,904,444	154,857	69,893,986	12,156	55,983,793	799,136,952
2056	799,136,952	86,516	69,986,766	6,772	54,988,409	784,218,339
2057	784,218,339	41,491	69,827,597	3,241	53,919,918	768,348,910
2058	768,348,910	15,821	69,452,850	1,236	52,791,308	751,701,953
2059	751,701,953	2,847	68,885,494	222	51,614,012	734,433,096
2060	734,433,096	179	68,104,217	14	50,399,893	716,728,938
2061	716,728,938	-	67,134,351	-	49,161,220	698,755,807
2062	698,755,807	-	65,980,795	-	47,909,703	680,684,714
2063	680,684,714	-	64,695,044	-	46,655,812	662,645,482
2064	662,645,482	-	63,318,695	-	45,407,412	644,734,199
2065	644,734,199	-	61,858,374	-	44,171,178	627,047,003
2066	627,047,003	-	60,318,605	-	42,953,862	609,682,260
2067	609,682,260	-	58,703,636	-	41,762,388	592,741,012
2068	592,741,012	-	57,016,595	-	40,603,909	576,328,326
2069	576,328,326	-	55,260,900	-	39,485,858	560,553,284

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

# Single Discount Rate Development Projection of Plan Fiduciary Net Position End of Year (Concluded)

Fiscal Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.19%	Projected Ending Plan Net Position
Ending June 30,	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2070	\$ 560,553,284	\$ -	\$ 53,440,635	\$ -	\$ 38,415,935	\$ 545,528,584
2071	545,528,584	-	51,560,529	-	37,402,076	531,370,131
2072	531,370,131	-	49,625,706	-	36,452,433	518,196,858
2073	518,196,858	-	47,641,595	-	35,575,365	506,130,628
2074	506,130,628	-	45,613,815	-	34,779,437	495,296,250
2075	495,296,250	-	43,548,009	-	34,073,422	485,821,662
2076	485,821,662	-	41,449,802	-	33,466,320	477,838,180
2077	477,838,180	-	39,324,742	-	32,967,378	471,480,817
2078	471,480,817	-	37,178,346	-	32,586,107	466,888,578
2079	466,888,578	-	35,016,450	-	32,332,296	464,204,424
2080	464,204,424	-	32,845,587	-	32,215,994	463,574,831
2081	463,574,831	-	30,672,953	-	32,247,477	465,149,355
2082	465,149,355	-	28,506,475	-	32,437,218	469,080,098
2083	469,080,098	-	26,354,993	-	32,795,842	475,520,946
2084	475,520,946	-	24,228,208	-	33,334,069	484,626,808
2085	484,626,808	-	22,136,716	-	34,062,665	496,552,757
2086	496,552,757	-	20,091,767	-	34,992,381	511,453,371
2087	511,453,371	-	18,104,874	-	36,133,924	529,482,421
2088	529,482,421	-	16,187,724	-	37,497,938	550,792,634
2089	550,792,634	-	14,352,008	-	39,094,991	575,535,617
2090	575,535,617	-	12,608,893	-	40,935,589	603,862,312
2091	603,862,312	-	10,968,545	-	43,030,225	635,923,992
2092	635,923,992	-	9,439,813	-	45,389,464	671,873,643
2093	671,873,643	-	8,030,031	-	48,024,046	711,867,657
2094	711,867,657	-	6,744,838	-	50,945,016	756,067,836
2095	756,067,836	-	5,587,972	-	54,163,876	804,643,740
2096	804,643,740	-	4,561,170	-	57,692,757	857,775,327
2097	857,775,327	-	3,663,860	-	61,544,616	915,656,084
2098	915,656,084	-	2,892,836	-	65,733,480	978,496,728
2099	978,496,728	-	2,242,240	-	70,274,705	1,046,529,193
2100	1,046,529,193	-	1,703,859	-	75,185,258	1,120,010,592
2101	1,120,010,592	-	1,267,619	-	80,483,982	1,199,226,954
2102	1,199,226,954	-	922,066	-	86,191,845	1,284,496,733
2103	1,284,496,733	-	654,863	-	92,332,181	1,376,174,051
2104	1,376,174,051	-	453,425	-	98,930,897	1,474,651,523
2105	1,474,651,523	-	305,594	-	106,016,649	1,580,362,578
2106	1,580,362,578	-	200,186	-	113,620,998	1,693,783,389
2107	1,693,783,389	-	127,294	-	121,778,529	1,815,434,624
2108	1,815,434,624	-	78,477	-	130,526,977	1,945,883,124
2109	1,945,883,124	-	46,864	-	139,907,341	2,085,743,601
2110	2,085,743,601	-	27,104	-	149,964,007	2,235,680,505
2111	2,235,680,505	-	15,184	-	160,744,892	2,396,410,213
2112	2,396,410,213	-	8,239	-	172,301,603	2,568,703,577
2113	2,568,703,577	-	4,325	-	184,689,634	2,753,388,887
2114	2,753,388,887	-	2,192	-	197,968,584	2,951,355,278
2115	2,951,355,278	-	1,071	-	212,202,407	3,163,556,614
2116	3,163,556,614	-	498	-	227,459,703	3,391,015,819
2117	3,391,015,819	-	212	-	243,814,030	3,634,829,637
2118	3,634,829,637	-	102	-	261,344,247	3,896,173,782
2119	3,896,173,782	-	-	-	280,134,895	4,176,308,677

# Single Discount Rate Development

## Present Values of Projected Benefits

### End of Year

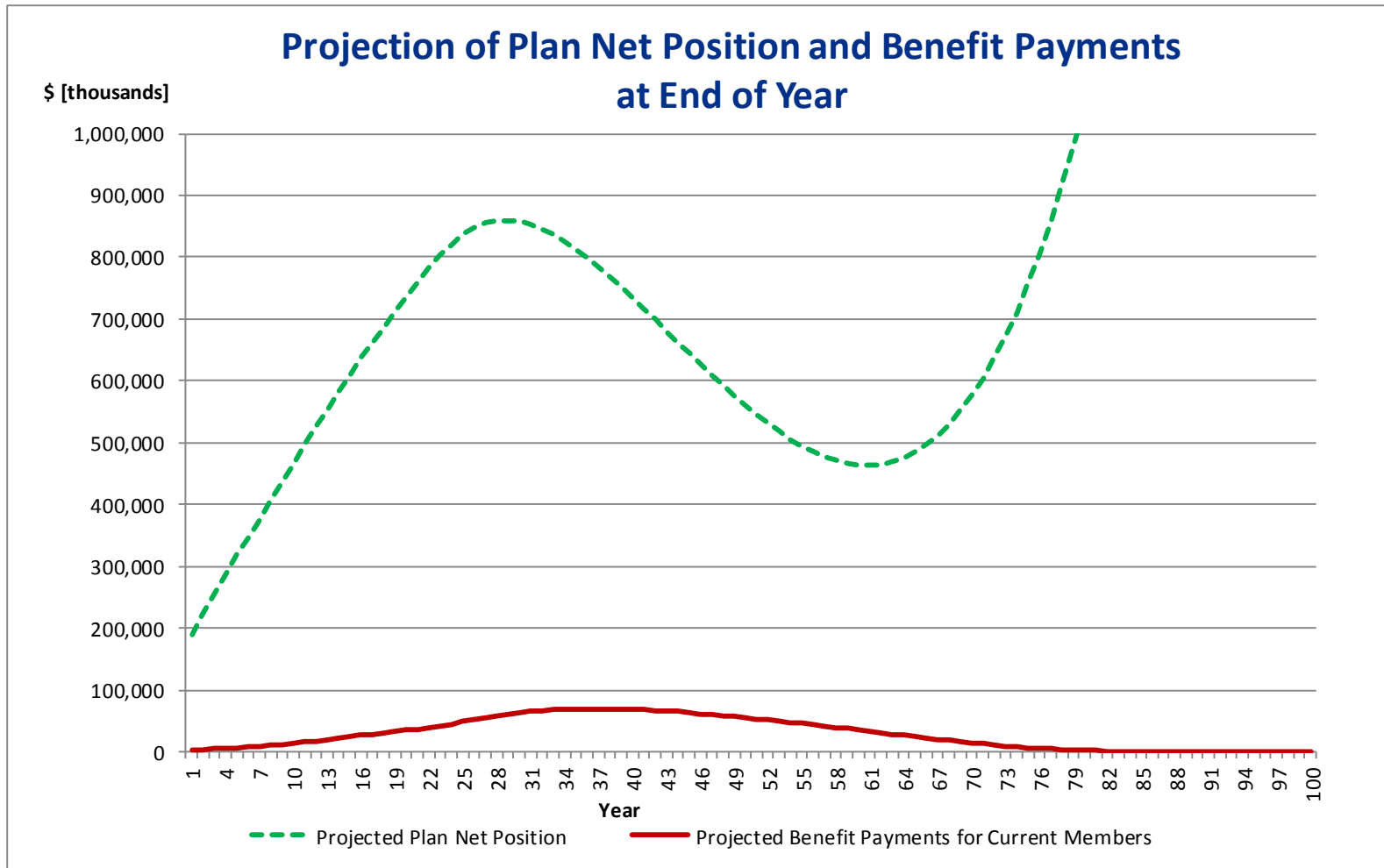
Fiscal Year Ending June 30,	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (v <sub>f</sub> )	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v <sup>a</sup> ((a)-.5)	(g)=(e)*v <sub>f</sub> <sup>a</sup> ((a)-.5)	(h)=(c)/(1+sdr) <sup>a</sup> ((a)-.5)
2020	\$ 158,495,297	\$ 2,581,829	\$ 2,581,829	\$ -	\$ 2,493,735	\$ -	\$ 2,493,735
2021	190,140,943	3,434,367	3,434,367	-	3,094,677	-	3,094,677
2022	222,127,692	4,260,366	4,260,366	-	3,581,469	-	3,581,469
2023	254,878,687	5,219,143	5,219,143	-	4,093,165	-	4,093,165
2024	288,546,362	6,302,676	6,302,676	-	4,611,378	-	4,611,378
2025	317,508,520	7,558,825	7,558,825	-	5,159,478	-	5,159,478
2026	346,937,291	8,970,473	8,970,473	-	5,712,320	-	5,712,320
2027	376,694,626	10,383,721	10,383,721	-	6,168,733	-	6,168,733
2028	406,742,580	11,944,130	11,944,130	-	6,619,775	-	6,619,775
2029	436,904,247	13,759,055	13,759,055	-	7,114,150	-	7,114,150
2030	466,916,478	15,700,542	15,700,542	-	7,573,468	-	7,573,468
2031	496,672,786	17,791,614	17,791,614	-	8,006,473	-	8,006,473
2032	526,000,941	20,119,571	20,119,571	-	8,446,763	-	8,446,763
2033	554,584,904	22,564,884	22,564,884	-	8,837,928	-	8,837,928
2034	582,245,620	24,864,159	24,864,159	-	9,085,249	-	9,085,249
2035	609,097,014	26,958,246	26,958,246	-	9,189,681	-	9,189,681
2036	635,327,944	28,931,445	28,931,445	-	9,200,780	-	9,200,780
2037	661,084,369	30,814,624	30,814,624	-	9,142,335	-	9,142,335
2038	686,459,346	32,656,488	32,656,488	-	9,038,898	-	9,038,898
2039	711,485,796	34,546,969	34,546,969	-	8,920,756	-	8,920,756
2040	736,046,729	36,468,060	36,468,060	-	8,785,169	-	8,785,169
2041	759,987,368	38,633,079	38,633,079	-	8,682,454	-	8,682,454
2042	782,907,379	41,432,719	41,432,719	-	8,687,050	-	8,687,050
2043	803,803,684	44,746,548	44,746,548	-	8,752,541	-	8,752,541
2044	821,733,674	48,209,087	48,209,087	-	8,797,297	-	8,797,297
2045	836,323,461	51,658,411	51,658,411	-	8,794,419	-	8,794,419
2046	847,419,494	54,938,547	54,938,547	-	8,725,473	-	8,725,473
2047	855,022,691	58,020,168	58,020,168	-	8,596,794	-	8,596,794
2048	859,195,533	60,881,691	60,881,691	-	8,415,695	-	8,415,695
2049	860,032,384	63,392,997	63,392,997	-	8,175,048	-	8,175,048
2050	857,763,320	65,431,625	65,431,625	-	7,871,952	-	7,871,952
2051	852,779,594	66,966,519	66,966,519	-	7,516,198	-	7,516,198
2052	845,527,565	68,134,754	68,134,754	-	7,134,358	-	7,134,358
2053	836,310,668	69,007,108	69,007,108	-	6,741,022	-	6,741,022
2054	825,356,806	69,575,346	69,575,346	-	6,340,639	-	6,340,639
2055	812,904,444	69,893,986	69,893,986	-	5,942,418	-	5,942,418
2056	799,136,952	69,986,766	69,986,766	-	5,551,176	-	5,551,176
2057	784,218,339	69,827,597	69,827,597	-	5,167,041	-	5,167,041
2058	768,348,910	69,452,850	69,452,850	-	4,794,581	-	4,794,581
2059	751,701,953	68,885,494	68,885,494	-	4,436,434	-	4,436,434
2060	734,433,096	68,104,217	68,104,217	-	4,091,910	-	4,091,910
2061	716,728,938	67,134,351	67,134,351	-	3,763,072	-	3,763,072
2062	698,755,807	65,980,795	65,980,795	-	3,450,333	-	3,450,333
2063	680,684,714	64,695,044	64,695,044	-	3,156,169	-	3,156,169
2064	662,645,482	63,318,695	63,318,695	-	2,881,820	-	2,881,820
2065	644,734,199	61,858,374	61,858,374	-	2,626,511	-	2,626,511
2066	627,047,003	60,318,605	60,318,605	-	2,389,339	-	2,389,339
2067	609,682,260	58,703,636	58,703,636	-	2,169,387	-	2,169,387
2068	592,741,012	57,016,595	57,016,595	-	1,965,709	-	1,965,709
2069	576,328,326	55,260,900	55,260,900	-	1,777,385	-	1,777,385

# Single Discount Rate Development

## Present Values of Projected Benefits

### End of Year (Concluded)

Fiscal Year Ending June 30,	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v <sup>(a)-.5</sup>	(g)=(e)*vf <sup>(a)-.5</sup>	(h)=(c)/(1+sdr) <sup>(a)-.5</sup>
2070	\$ 560,553,284	\$ 53,440,635	\$ 53,440,635	\$ -	\$ 1,603,544	\$ -	\$ 1,603,544
2071	545,528,584	51,560,529	51,560,529	-	1,443,353	-	1,443,353
2072	531,370,131	49,625,706	49,625,706	-	1,296,007	-	1,296,007
2073	518,196,858	47,641,595	47,641,595	-	1,160,734	-	1,160,734
2074	506,130,628	45,613,815	45,613,815	-	1,036,785	-	1,036,785
2075	495,296,250	43,548,009	43,548,009	-	923,435	-	923,435
2076	485,821,662	41,449,802	41,449,802	-	819,985	-	819,985
2077	477,838,180	39,324,742	39,324,742	-	725,764	-	725,764
2078	471,480,817	37,178,346	37,178,346	-	640,126	-	640,126
2079	466,888,578	35,016,450	35,016,450	-	562,462	-	562,462
2080	464,204,424	32,845,587	32,845,587	-	492,202	-	492,202
2081	463,574,831	30,672,953	30,672,953	-	428,813	-	428,813
2082	465,149,355	28,506,475	28,506,475	-	371,793	-	371,793
2083	469,080,098	26,354,993	26,354,993	-	320,676	-	320,676
2084	475,520,946	24,228,208	24,228,208	-	275,024	-	275,024
2085	484,626,808	22,136,716	22,136,716	-	234,427	-	234,427
2086	496,552,757	20,091,767	20,091,767	-	198,499	-	198,499
2087	511,453,371	18,104,874	18,104,874	-	166,872	-	166,872
2088	529,482,421	16,187,724	16,187,724	-	139,193	-	139,193
2089	550,792,634	14,352,008	14,352,008	-	115,131	-	115,131
2090	575,535,617	12,608,893	12,608,893	-	94,363	-	94,363
2091	603,862,312	10,968,545	10,968,545	-	76,581	-	76,581
2092	635,923,992	9,439,813	9,439,813	-	61,486	-	61,486
2093	671,873,643	8,030,031	8,030,031	-	48,795	-	48,795
2094	711,867,657	6,744,838	6,744,838	-	38,237	-	38,237
2095	756,067,836	5,587,972	5,587,972	-	29,553	-	29,553
2096	804,643,740	4,561,170	4,561,170	-	22,505	-	22,505
2097	857,775,327	3,663,860	3,663,860	-	16,865	-	16,865
2098	915,656,084	2,892,836	2,892,836	-	12,423	-	12,423
2099	978,496,728	2,242,240	2,242,240	-	8,983	-	8,983
2100	1,046,529,193	1,703,859	1,703,859	-	6,368	-	6,368
2101	1,120,010,592	1,267,619	1,267,619	-	4,420	-	4,420
2102	1,199,226,954	922,066	922,066	-	2,999	-	2,999
2103	1,284,496,733	654,863	654,863	-	1,987	-	1,987
2104	1,376,174,051	453,425	453,425	-	1,284	-	1,284
2105	1,474,651,523	305,594	305,594	-	807	-	807
2106	1,580,362,578	200,186	200,186	-	493	-	493
2107	1,693,783,389	127,294	127,294	-	293	-	293
2108	1,815,434,624	78,477	78,477	-	168	-	168
2109	1,945,883,124	46,864	46,864	-	94	-	94
2110	2,085,743,601	27,104	27,104	-	51	-	51
2111	2,235,680,505	15,184	15,184	-	26	-	26
2112	2,396,410,213	8,239	8,239	-	13	-	13
2113	2,568,703,577	4,325	4,325	-	7	-	7
2114	2,753,388,887	2,192	2,192	-	3	-	3
2115	2,951,355,278	1,071	1,071	-	1	-	1
2116	3,163,556,614	498	498	-	1	-	1
2117	3,391,015,819	212	212	-	0	-	0
2118	3,634,829,637	102	102	-	0	-	0
2119	3,896,173,782	-	-	-	-	-	-
<b>Totals</b>					\$ 325,654,240	\$ -	\$ 325,654,240



## **SECTION H**

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### **GLOSSARY OF TERMS**



# Glossary of Terms

<b><i>Actuarial Accrued Liability (AAL)</i></b>	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."
<b><i>Actuarial Assumptions</i></b>	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.
<b><i>Accrued Service</i></b>	Service credited under the system which was rendered before the date of the actuarial valuation.
<b><i>Actuarial Equivalent</i></b>	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.
<b><i>Actuarial Cost Method</i></b>	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.
<b><i>Actuarial Gain (Loss)</i></b>	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.
<b><i>Actuarial Present Value (APV)</i></b>	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.
<b><i>Actuarial Valuation</i></b>	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.
<b><i>Actuarial Valuation Date</i></b>	The date as of which an actuarial valuation is performed.
<b><i>Actuarially Determined Contribution (ADC)</i></b>	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

<b><i>Amortization Payment</i></b>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<b><i>Amortization Method</i></b>	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).
<b><i>Cost-of-Living Adjustments (COLA)</i></b>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<b><i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i></b>	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.
<b><i>Covered-Employee Payroll</i></b>	The payroll of covered employees, which is typically only the pensionable pay and does not include pay above any pay cap.
<b><i>Deferred Retirement Option Program (DROP)</i></b>	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.
<b><i>Deferred Inflows and Outflows</i></b>	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.
<b><i>Discount Rate</i></b>	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: <ol style="list-style-type: none"><li>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</li><li>2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.</li></ol>

## 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 age(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 (Asset) (NPL(A))***

The NPL(A) 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

<b><i>Other Postemployment Benefits (OPEB)</i></b>	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 postemployment benefits do not include termination benefits.
<b><i>PERSIA</i></b>	Public Employees Retirement System Investment Act.
<b><i>POA</i></b>	The 8th Amended Plan for the Adjustment of the Debt of the City of Detroit.
<b><i>Real Rate of Return</i></b>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<b><i>Service Cost</i></b>	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.
<b><i>Single Discount Rate (SDR)</i></b>	The discount rate used in determining the Total Pension Liability.
<b><i>Total Pension Expense</i></b>	The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year: <ol style="list-style-type: none"><li>1. Service Cost</li><li>2. Interest on the Total Pension Liability</li><li>3. Current-Period Benefit Changes</li><li>4. Employee Contributions (made negative for addition here)</li><li>5. Projected Earnings on Plan Investments (made negative for addition here)</li><li>6. Pension Plan Administrative Expense</li><li>7. Other Changes in Plan Fiduciary Net Position</li><li>8. Recognition of Outflow (Inflow) of Resources due to Liabilities</li><li>9. Recognition of Outflow (Inflow) of Resources due to Assets</li></ol>
<b><i>Total Pension Liability (TPL)</i></b>	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
<b><i>Unfunded Actuarial Accrued Liability (UAAL)</i></b>	The UAAL is the difference between actuarial accrued liability and valuation assets.
<b><i>Valuation Assets</i></b>	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.
<b><i>Variable Pension Improvement Factor (VPIF)</i></b>	An increase on the Component I Retirement Allowance of 1% compound subject to plan restrictions.

October 22, 2019

Mr. David Cetlinski  
Executive Director  
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 30 copies of the Component I GASB Statement Nos. 67 and 68 report of the Police and Fire Retirement System of the City of Detroit.

Sincerely,



Kenneth G. Alberts

KGA:sc  
Enclosure

cc: Gail Oxendine, City of Detroit Retirement Systems  
Kelly Tapper, City of Detroit Retirement Systems  
David T. Kausch, GRS  
Judith A. Kermans, GRS