

# **City of Atlanta General Employees' Pension Fund**

**Governmental Accounting Standards Board  
Statement 68 (GASB 68)  
Actuarial Valuation as of June 30, 2019**

This report has been prepared at the request of the City of Atlanta to assist the sponsors of the Pension Fund in preparing their financial report for their liabilities associated with the Pension Fund. This valuation report may not otherwise be copied or reproduced in any form without the consent of the City of Atlanta and may only be provided to other parties in its entirety.

The measurements shown in this actuarial valuation may not be applicable for other purposes.

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2727 Paces Ferry Road SE, Bldg. 1, Suite 1400 Atlanta, GA 30339-4053  
T 678.306.3100 www.segalco.com

May 31, 2019

Chukwufumnanya Johnson  
Interim Deputy Controller  
City of Atlanta Department of Finance  
68 Mitchell St., SW, Suite 8100  
Atlanta, GA 30303

Dear Fumnanya:

We are pleased to submit this Governmental Accounting Standards Board Statement 68 (GASB 68) Actuarial Valuation for the City of Atlanta General Employees' Pension Fund based on a June 30, 2018 measurement date for employer reporting as of June 30, 2019. It contains various information that will need to be disclosed in order to comply with GASB 68.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the City to assist the sponsors in preparing their financial report for their liabilities associated with the Pension Fund. The census information on which our calculations were based was provided by Zenith American Solutions and the financial information was provided by KPMG. That assistance is gratefully acknowledged.

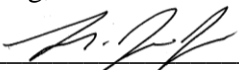
The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.

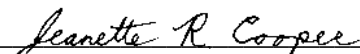
The actuarial calculations were completed under the supervision of Jeanette R. Cooper, FSA, FCA, MAAA, EA. Ms. Cooper is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of her knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in her opinion, the assumptions as approved by the Board are reasonably related to the experience of and expectations for the Pension Fund.

We look forward to reviewing this report with you and to answering any questions.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By:   
Leon F. (Rocky) Joyner, Jr., ASA, FCA, MAAA, EA  
Vice President and Consulting Actuary

  
Jeanette R. Cooper, FSA, FCA, MAAA, EA  
Vice President and Consulting Actuary

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# Section 1: Actuarial Valuation Summary

## Purpose

This report has been prepared by Segal Consulting to present certain disclosure information required by Governmental Accounting Standards Board Statement 68 (GASB 68) for employer reporting as of June 30, 2019. The results used in preparing this GASB 68 report are comparable to those used in preparing the Governmental Accounting Standards Board Statement 67 (GASB 67) report for the plan based on a reporting date and a measurement date as of June 30, 2018. This valuation is based on:

- The benefit provisions of Pension Fund, as administered by Zenith American Solutions;
- The characteristics of covered active members, terminated vested members, and retired members and beneficiaries as of June 30, 2017, provided by Zenith American Solutions;
- The assets of the Plan as of June 30, 2018, provided by KPMG;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the June 30, 2017 valuation; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc. adopted by the Board for the June 30, 2017 valuation.

## Significant Issues

- It is important to note that GASB 67 and 68 only define pension liability and expense for financial reporting purposes, and do not apply to contribution amounts for pension funding purposes. Employers and plans should develop and adopt funding policies under current practices, if no policy currently exists. The funding policy is to contribute the employer normal cost including administrative expenses plus a payment to amortize the unfunded actuarial accrued liability. The amortization period was reset to 30 years on July 1, 2010 with 23 years remaining as of July 1, 2017. The actuarially determined employer contribution is calculated on a level percent of payroll and is projected to increase 3% annually, if all assumptions are met.
- When measuring pension liability GASB uses the same actuarial cost method (Entry Age method) and the same discount rate (expected return on assets) as the Pension Fund uses for funding. This means that the Total Pension Liability (TPL) measure for financial reporting shown in this report is determined on the same basis as Pension Fund's Actuarial Accrued Liability (AAL) measure for funding. We note that the same is generally true for the Normal Cost component of the annual plan cost for funding and financial reporting.

- The Net Pension Liability (NPL) is equal to the difference between the TPL and the Plan Fiduciary Net Position (FNP). The Plan FNP is equal to the market value of assets and therefore, the NPL measure is very similar to an Unfunded Actuarial Accrued Liability (UAAL) on a market value basis.
- The NPL was measured as of June 30, 2018 and June 30, 2017 and determined based upon the results of the actuarial valuations as of June 30, 2017 and June 30, 2016, respectively.
- The NPL decreased from \$712.3 million as of June 30, 2017 to \$572.0 million as of June 30, 2018 primarily as a result of liability gains, changes in assumptions and favorable investment results. The liability gains were mainly attributable to cost-of-living adjustments and salary increases less than assumed. Changes in these values during the last two fiscal years ending June 30, 2017 and June 30, 2018 can be found in Section 2.
- The discount rates used to measure the TPL and NPL as of June 30, 2018 and June 30, 2017 were 7.25% and 7.50%, respectively. There were also changes in the other actuarial assumptions since the 2016 valuation and the financial impact of those changes has been reflected in the results for the 2017 valuation. A description of the assumption changes can be found in Section 4, Exhibit I of the July 1, 2017 actuarial valuation report dated September 28, 2018. Various other information that is required to be disclosed can be found throughout Section 2 of this report.
- The only change in benefit provisions since GASB 68 implementation that impacted total pension liability was the inclusion of 89 employees hired between 2001 and 2005 who participated in the City of Atlanta Defined Contribution Plan (DC Plan) that accepted a one-time offer to transfer into the City of Atlanta General Employees' Pension Fund (DB Plan).
- The NPLs for the departments in the City of Atlanta General Employees' Pension Fund as of June 30, 2018 and June 30, 2017 are allocated based on the actual employer contributions made during the fiscal years ending in 2018 and 2017, respectively. The steps we used are as follows:
  - First calculate ratio of Department contributions to the total contributions.
  - Multiply the NPL by the ratio above to determine the Department's proportionate share of the NPL.

Proportionate share of total plan NPL is then the ratio of the employer's total allocated NPL to the total NPL of all employers. The NPL allocation can be found in Section 2.

- The covered employee payroll for the June 30, 2017 measurement date shown on pages 14 and 16 and the covered payroll for the June 30, 2018 measurement date shown on pages 14 and 16 is covered payroll from July 1, 2016 through June 30, 2017 and July 1, 2017 through June 30, 2018, respectively, provided by the City's Finance Department. These payroll amounts represent actual June 30, 2017 and June 30, 2018 payroll and are not estimates.
- Note that the numbers may not always sum to totals due to rounding.

## Summary of Key Valuation Results

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	June 30, 2018	June 30, 2017
<b>Disclosure elements for fiscal year ending June 30:</b>		
Service cost	\$18,849,730	\$21,238,043
Total Pension Liability	1,872,962,480	1,941,751,744
Plan Fiduciary Net Position	1,300,987,000	1,229,420,000
Net Pension Liability	571,975,480	712,331,744
Pension expense	22,844,466	39,730,868
<b>Schedule of contributions for fiscal year ending June 30:</b>		
Actuarially determined contributions	\$51,902,994	\$53,815,973
Actual contributions	51,903,000	53,817,000
Contribution deficiency / (excess)	-6	-1,027
<b>Demographic data for plan year ending June 30<sup>(1)</sup>:</b>		
Number of retired members and beneficiaries	3,975	3,889
Number of vested terminated members <sup>(2)</sup>	440	420
Number of active members	3,379	3,688
<b>Key assumptions as of June 30:</b>		
Investment rate of return	7.25%	7.50%
Inflation rate	2.25%	2.75%
Projected salary increases	3.00% <sup>(3)</sup>	3.50% <sup>(4)</sup>

<sup>(1)</sup> Numbers as of June 30, 2018 are projected based on a closed group forecast of the June 30, 2017 data.

<sup>(2)</sup> Includes terminated members with member contributions on deposit as of June 30, 2017.

<sup>(3)</sup> Includes inflation at 2.25% and 0.75% productivity growth, plus age-related salary scale.

<sup>(4)</sup> Includes inflation at 2.75% and 0.75% productivity growth, plus age-related salary scale.

# Important Information about Actuarial Valuations

In order to prepare an actuarial valuation, Segal Consulting (“Segal”) relies on a number of input items. These include:

<b>Plan of benefits</b>	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan description in this report (as well as the plan summary included in our funding valuation report) to confirm that Segal has correctly interpreted the plan of benefits.
<b>Participant data</b>	An actuarial valuation for a plan is based on data provided to the actuary by the plan administrator. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
<b>Assets</b>	The valuation is based on the market value of assets as of the valuation date, as provided by KPMG.
<b>Actuarial assumptions</b>	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan’s assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

The user of Segal’s actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The valuation is prepared at the request of the City to assist the sponsors of the Pension Fund in preparing items related to the pension plan in their financial reports. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan’s assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- If the City is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal’s valuation is based on our understanding of applicable guidance in these areas and of the plan’s provisions, but they may be subject to alternative interpretations. The City should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of the Pension Fund, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Pension Fund.



## Section 2: GASB 68 Information

### General Information – “Financial Statements”, Note Disclosures and Required Supplementary Information for an Agent Multiple-Employer Pension Plan

#### Plan Description

*Plan membership:* All employees of the City of Atlanta, excluding temporary employees, firefighters, police officers, and employees hired after 2001 in job grades 19 and above. At June 30, 2017, pension plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	3,889
Vested terminated members entitled to but not yet receiving benefits <sup>(1)</sup>	420
Active members	3,688
Total	7,997

The census data as of June 30, 2018 was not available at the time of this disclosure. However, the following as of June 30, 2018 is based on a closed group forecast of the July 1, 2017 census data and reflects 89 employees hired between 2001 and 2005 (in all job grades) who participated in the City of Atlanta Defined Contribution Plan who accepted an offer as allowed under City Ordinance 17-O-1826 to transfer into this plan.

Retired members or beneficiaries currently receiving benefits	3,975
Vested terminated members entitled to but not yet receiving benefits <sup>(1)</sup>	440
Active members	3,379
Total	7,794

*Benefits provided.* For a summary of the major provisions of the City of Atlanta General Employees’ Pension Fund included in the valuation, please see Section 4, Exhibit II of the July 1, 2017 actuarial valuation report. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

<sup>1</sup> Includes 330 terminated members with member contributions on deposit.

## Net Pension Liability

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	June 30, 2018	June 30, 2017
<b>Components of the Net Pension Liability</b>		
Total Pension Liability	\$1,872,962,480	\$1,941,751,744
Plan Fiduciary Net Position	1,300,987,000	1,229,420,000
Net Pension Liability	571,975,480	712,331,744
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	69.46%	63.31%

The Net Pension Liability (NPL) for the plan was measured as of June 30, 2018 and 2017. Plan Fiduciary Net Position (plan assets) was valued as of the measurement dates and the Total Pension Liability (TPL) was determined based upon rolling forward the TPL from actuarial valuations as of June 30, 2017 and 2016, respectively. Consistent with the provisions of GASB 68, the assets and liabilities as of June 30, 2018 and June 30, 2017 are *not* rolled forward to June 30, 2019 and June 30, 2018, respectively.

*Plan provisions.* The plan provisions used in the measurement of the NPL are the same as those used in the Pension Fund actuarial valuations as of June 30, 2017 and June 30, 2016, respectively with the addition of 89 employees who transferred from the City of Atlanta Defined Contribution Plan to this plan under City Ordinance 17-O-1826 reflected at the June 30, 2018 measurement date.

*Actuarial assumptions.* The TPL as of June 30, 2018 that was measured by an actuarial valuation as of June 30, 2017, used the following actuarial assumptions, applied to all periods included in the measurement:

<b>Inflation</b>	<b>2.25%</b>
<b>Salary increases</b>	<b>3.00%</b>
<b>Investment rate of return</b>	<b>7.25%</b> , net of pension plan investment expense, including inflation
<b>Other assumptions</b>	See Section 4, Exhibit I of the July 1, 2017 actuarial valuation report for a description of all actuarial assumptions. These assumptions were based on the results of an experience study for the period July 1, 2011 through June 30, 2017.

*Actuarial assumptions.* The TPL as of June 30, 2017 that was measured by an actuarial valuation as of June 30, 2016 used the following actuarial assumptions, applied to all periods included in the measurement:

<b>Inflation</b>	<b>2.75%</b>
<b>Salary increases</b>	<b>3.50%</b>
<b>Investment rate of return</b>	<b>7.25%</b> , net of pension plan investment expenses, including inflation
<b>Other assumptions</b>	See Section 4, Exhibit V of the July 1, 2016 actuarial valuation report for a description of all actuarial assumptions. These assumptions were based on the results of an experience study for the period January 1, 2003 through June 30, 2011.

## Target Asset Allocation

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage, adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before investment expenses, used in the derivation of the long-term expected investment rate of return assumption are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic equity	50.00%	6.40%
Fixed income	25.00%	1.80%
International equity	20.00%	7.90%
Alternative Investments	5.00%	6.10%
Cash	0.00%	0.00%
Total	100.00%	

*Discount rate.* The discount rates used to measure the Total Pension Liability (TPL) were 7.25% and 7.50% as of June 30, 2018 and June 30, 2017, respectively. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially determined contribution rates. For this purpose, only employer contributions that are intended to fund benefits for current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs for future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the Plan Fiduciary Net Position (FNP) was projected to be available to make all projected future benefit payments for 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 TPL as of both June 30, 2018 and June 30, 2017.

## Discount Rate Sensitivity

*Sensitivity of the Net Pension Liability to changes in the discount rate.* The following presents the Net Pension Liability (NPL) of the Pension Fund as of June 30, 2018, which is allocated to all departments, calculated using the discount rate of 7.25%, as well as what the Pension Fund's NPL would be if it were calculated using a discount rate that is one percentage-point lower (6.25%) or one percentage-point higher (8.25%) than the current rate. The determination of the NPL by department is shown later in Section 2.

Net Pension Liability	1% Decrease (6.25%)	Current Discount Rate (7.25%)	1% Increase (8.25%)
Airport	\$89,479,086	\$65,719,983	\$45,682,022
Watershed	249,201,980	183,032,154	127,225,822
General	385,562,190	283,185,059	196,842,202
Sanitation	<u>54,512,933</u>	<u>40,038,284</u>	<u>27,830,649</u>
Total for all Departments	\$778,756,189	\$571,975,480	\$397,580,695

## Schedule of Changes in Net Pension Liability – Last Two Fiscal Years

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	June 30, 2018	June 30, 2017
<b>Total Pension Liability</b>		
Service cost	\$18,849,730	\$21,238,043
Interest	142,507,873	139,298,128
Change of benefit terms	34,080,981	0
Differences between expected and actual experience	-48,345,680	-17,824,795
Changes of assumptions	-94,889,168	0
Benefit payments, including refunds of member contributions	<u>-120,993,000</u>	<u>-116,536,000</u>
Net change in Total Pension Liability	-\$68,789,264	\$26,175,376
Total Pension Liability – beginning	<u>1,941,751,744</u>	<u>1,915,576,368</u>
Total Pension Liability – ending	<u>\$1,872,962,480</u>	<u>\$1,941,751,744</u>
<b>Plan Fiduciary Net Position</b>		
Contributions – employer	\$51,903,000	\$53,817,000
Contributions – employee	20,671,000	18,243,000
Net investment income	121,682,000	152,258,000
Benefit payments, including refunds of member contributions	-120,993,000	-116,536,000
Administrative expense	-1,806,000	-1,148,000
Other	<u>110,000</u>	<u>0</u>
Net change in Plan Fiduciary Net Position	\$71,567,000	\$106,634,000
Plan Fiduciary Net Position – beginning	<u>1,229,420,000</u>	<u>1,122,786,000</u>
Plan Fiduciary Net Position – ending	\$1,300,987,000	\$1,229,420,000
Net Pension Liability – ending	<u>\$571,975,480</u>	<u>\$712,331,744</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	69.46%	63.31%
Covered employee payroll <sup>(1)</sup>	\$160,757,843	\$158,838,711
Plan Net Pension Liability as percentage of covered employee payroll	355.80%	448.46%

<sup>(1)</sup>Covered employee payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of the retirement benefits are included.

## Notes to Schedule:

*Benefit changes:* The only change in benefit provisions since GASB 67/68 implementation that impacted total pension liability was the inclusion of 89 employees hired between 2001 and 2005 who participated in the City of Atlanta Defined Contribution Plan (DC Plan) that accepted a one-time offer to transfer into the City of Atlanta General Employees' Pension Fund (DB Plan).

*Change of assumptions:* The discount rate for GASB reporting purposes decreased from 7.50% as of June 30, 2017 to 7.25% as of June 30, 2018. A detailed study of experience for the City of Atlanta for the five-year period ending June 30, 2016 was performed and the recommendations of the experience study were approved by the Board in August 2017. The following assumptions changes were reflected for the first time in the June 30, 2018 disclosure:

- The investment return assumption was lowered from 7.50% to 7.25%.
- The inflation assumption was lowered from 2.75% to 2.25%.
- The payroll growth assumption decreased from 3.50% to 3.00%, maintaining the productivity assumption of 0.75%.
- The age-based salary scale table was maintained with rates modified to reflect higher merit and promotional increases.
- The cost-of-living adjustment for hires before November 1, 2011 was decreased from 3.00% to 2.25%.
- An explicit administrative expense assumption of \$1,200,000, projected to increase annually with the inflation assumption, was introduced.
- The pre-retirement mortality assumption was changed from the sex-distinct RP-2000 Combined Healthy Mortality Table, to the approximate RP-2006 Blue Collar Employee Table, loaded by 25% for males and females.
- The post-retirement mortality assumption for healthy annuitants was changed from the sex-distinct RP-2000 Combined Healthy Mortality Table, to the approximate RP-2006 Blue Collar Healthy Annuitant Table, loaded by 25% for males and females.
- The mortality assumption for disabled retirees was changed from the sex-distinct RP-2000 Disabled Retiree Mortality Table, to the approximate RP-2006 Disabled Retiree Table, loaded by 25% for males and females.
- In conjunction with the revised mortality tables, a sex-distinct generational projection of scale SSA2016-2D was introduced for all lives.
- The retirement rates for participants with 30 or more years of service at retirement were decreased for ages 53 to 64.
- The sex-distinct ordinary disability rates were lowered to 80% of the existing age-based rates. The occupational disability assumption of 10% of ordinary disability rates was maintained.
- The existing gender-neutral, service-based withdrawal rates were maintained with decreases only in the rates for participants with less than two years of service.
- The assumption that 50% of terminated participants hired prior to November 1, 2011 will take a refund of contributions was increased to 75%.

## Schedule of Contributions – Last Two Fiscal Years

Year Ended June 30	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency/ (Excess)	Covered- Employee Payroll <sup>(1)</sup>	Contributions as a Percentage of Covered Employee Payroll
2017	\$53,815,973	\$53,817,000	-\$1,027	\$158,838,711	33.88%
2018	51,902,994	51,903,000	-6	160,757,843	32.29%

<sup>(1)</sup> Covered employee payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of the retirement benefits are included.

Methods and assumptions used to establish “actuarially determined contribution” rates:

<b>Valuation date</b>	Actuarially determined contribution rates are calculated using a July 1 <sup>st</sup> valuation date one year prior to the beginning of the fiscal year in which contributions are reported
<b>Actuarial cost method</b>	Entry Age Actuarial Cost Method
<b>Amortization method</b>	Level percent of payroll, closed
<b>Remaining amortization period</b>	23 years remaining as of July 1, 2017
<b>Asset valuation method</b>	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between actual and expected returns on a market value basis and is recognized over a five-year period. The deferred return is further adjusted, if necessary, so that the actuarial value of assets will stay within 20% of the market value of assets.
<b>Actuarial assumptions:</b>	
<b>Investment rate of return</b>	7.25%, net of pension plan investment expense, including inflation
<b>Inflation rate</b>	2.25%
<b>Projected salary increases</b>	3.00% plus age-related salary scale
<b>Cost of living adjustments</b>	2.25% (1.00% for post October 31, 2011 hires)
<b>Other assumptions</b>	Same as those used in the July 1, 2017 funding actuarial valuation



## Determination of Proportionate Share

### Allocation of June 30, 2017 Net Pension Liability (NPL)

Department	Actual Employer Contributions, July 1, 2016 to June 30, 2017	Percentage	NPL
Airport	\$6,183,573	11.49%	\$81,846,917
Watershed	17,108,424	31.79%	226,450,261
General	26,763,195	49.73%	354,242,577
Sanitation	3,761,808	6.99%	49,791,989
<b>Total for All Departments</b>	<b>\$53,817,000</b>	<b>100.00%</b>	<b>\$712,331,744</b>

### Allocation of June 30, 2018 Net Pension Liability (NPL)

Department	Actual Employer Contributions, July 1, 2017 to June 30, 2018	Percentage	NPL
Airport	\$5,963,655	11.49%	\$65,719,983
Watershed	16,608,960	32.00%	183,032,154
General	25,697,175	49.51%	283,185,059
Sanitation	3,633,210	7.00%	40,038,284
<b>Total for All Departments</b>	<b>\$51,903,000</b>	<b>100.00%</b>	<b>\$571,975,480</b>

**Notes:**

Based on the June 30, 2017 through June 30, 2018 employer contributions as provided by the City of Atlanta's Department of Finance.

The Net Pension Liability (NPL) for each department is the Total Pension Liability (TPL) minus the Plan Fiduciary Net Position (plan assets). The NPL was based on actual contributions paid by each of the departments.

For purposes of the above results, we have assumed that the reporting date for the employer under GASB 68 is June 30, 2019. The reporting date and measurement date for the plan under GASB 67 are assumed to be June 30, 2018. This means that assets and liabilities are determined as of June 30, 2018 and are not adjusted or "rolled forward" to June 30, 2019. Other results, such as the total deferred inflows and outflows would also be allocated based on the same proportionate shares determined above.

The following items are allocated based on the corresponding proportionate share:

- Net Pension Liability
- Service cost
- Interest on the Total Pension Liability
- Expensed portion of current-period benefit changes
- Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability
- Expensed portion of current-period changes of assumptions or other inputs
- Member contributions
- Projected earnings on plan investments
- Expensed portion of current-period differences between actual and projected earnings on plan investments
- Administrative expense
- Other
- Recognition of beginning of year deferred outflows of resources as pension expense
- Recognition of beginning of year deferred inflows of resources as pension expense

## Pension Expense – Total for all Employers

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	June 30, 2018	June 30, 2017
<b>Components of Pension Expense</b>		
Service cost	\$18,849,730	\$21,238,043
Interest on the Total Pension Liability (TPL)	142,507,873	139,298,128
Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	--	--
Expensed portion of current-period benefit changes	34,080,981	--
Expensed portion of current-period difference between expected and actual experience in the TPL	-12,086,420	-4,456,198
Expensed portion of current-period changes of assumptions or other inputs	-23,722,292	--
Member contributions	-20,671,000	-18,243,000
Projected earnings on plan investments	-90,327,188	-82,498,050
Expensed portion of current-period differences between actual and projected earnings on plan investments	-6,270,964	-13,951,990
Administrative expense	1,806,000	1,148,000
Other	-110,000	--
Recognition of beginning of year deferred outflows of resources as pension expense	20,436,474	20,436,474
Recognition of beginning of year deferred inflows of resources as pension expense	-41,648,728	-23,240,539
Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	--	--
<b>Pension Expense</b>	<b>\$22,844,466</b>	<b>\$39,730,868</b>

## Pension Expense – Airport

Reporting Date for Employer under GASBS 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
<b>Components of Pension Expense</b>		
Service cost	\$2,165,834	\$2,440,251
Interest on the Total Pension Liability (TPL)	16,374,155	16,005,355
Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	--	--
Expensed portion of current-period benefit changes	3,915,905	--
Expensed portion of current-period difference between expected and actual experience in the TPL	-1,388,730	-512,017
Expensed portion of current-period changes of assumptions or other inputs	-2,725,691	--
Member contributions	-2,375,098	-2,096,121
Projected earnings on plan investments	-10,378,594	-9,479,026
Expensed portion of current-period differences between actual and projected earnings on plan investments	-720,534	-1,603,084
Administrative expense	207,509	131,905
Other	-12,639	--
Recognition of beginning of year deferred outflows of resources as pension expense	2,348,151	2,348,151
Recognition of beginning of year deferred inflows of resources as pension expense	-4,785,439	-2,670,338
Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	--	--
<b>Pension Expense</b>	<b>\$2,624,829</b>	<b>\$4,565,077</b>

## Pension Expense – Watershed

Reporting Date for Employer under GASBS 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
<b>Components of Pension Expense</b>		
Service cost	\$6,031,914	\$6,751,574
Interest on the Total Pension Liability (TPL)	45,602,519	44,282,875
Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	393,408	-1,851,320
Expensed portion of current-period benefit changes	10,905,914	--
Expensed portion of current-period difference between expected and actual experience in the TPL	-3,867,654	-1,416,625
Expensed portion of current-period changes of assumptions or other inputs	-7,591,133	--
Member contributions	-6,614,720	-5,799,450
Projected earnings on plan investments	-28,904,700	-26,226,130
Expensed portion of current-period differences between actual and projected earnings on plan investments	-2,006,708	-4,435,338
Administrative expense	577,920	364,949
Other	-35,200	--
Recognition of beginning of year deferred outflows of resources as pension expense	6,539,672	6,496,755
Recognition of beginning of year deferred inflows of resources as pension expense	-13,327,593	-7,388,167
Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>-1,851,322</u>	<u>--</u>
<b>Pension Expense</b>	<b>\$5,852,315</b>	<b>\$10,779,123</b>

## Pension Expense – General

Reporting Date for Employer under GASBS 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
<b>Components of Pension Expense</b>		
Service cost	\$9,332,501	\$10,561,679
Interest on the Total Pension Liability (TPL)	70,555,648	69,272,959
Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	-412,141	1,488,690
Expensed portion of current-period benefit changes	16,873,494	- -
Expensed portion of current-period difference between expected and actual experience in the TPL	-5,983,987	-2,216,067
Expensed portion of current-period changes of assumptions or other inputs	-11,744,907	- -
Member contributions	-10,234,212	-9,072,244
Projected earnings on plan investments	-44,720,991	-41,026,280
Expensed portion of current-period differences between actual and projected earnings on plan investments	-3,104,754	-6,938,325
Administrative expense	894,151	570,900
Other	-54,461	- -
Recognition of beginning of year deferred outflows of resources as pension expense	10,118,098	10,163,059
Recognition of beginning of year deferred inflows of resources as pension expense	-20,620,285	-11,557,520
Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>1,471,000</u>	<u>-17,692</u>
<b>Pension Expense</b>	<b>\$12,369,154</b>	<b>\$21,229,159</b>

## Pension Expense – Sanitation

Reporting Date for Employer under GASBS 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
<b>Components of Pension Expense</b>		
Service cost	\$1,319,481	\$1,484,539
Interest on the Total Pension Liability (TPL)	9,975,551	9,736,939
Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	18,733	362,630
Expensed portion of current-period benefit changes	2,385,669	- -
Expensed portion of current-period difference between expected and actual experience in the TPL	-846,049	-311,488
Expensed portion of current-period changes of assumptions or other inputs	-1,660,560	- -
Member contributions	-1,446,970	-1,275,186
Projected earnings on plan investments	-6,322,903	-5,766,614
Expensed portion of current-period differences between actual and projected earnings on plan investments	-438,967	-975,244
Administrative expense	126,420	80,245
Other	-7,700	- -
Recognition of beginning of year deferred outflows of resources as pension expense	1,430,553	1,428,510
Recognition of beginning of year deferred inflows of resources as pension expense	-2,915,411	-1,624,514
Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>380,322</u>	<u>17,692</u>
<b>Pension Expense</b>	<b>\$1,998,168</b>	<b>\$3,157,510</b>

## Deferred Outflows of Resources and Deferred Inflows of Resources – Total for all Employers

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	June 30, 2018	June 30, 2017
<b>Deferred Outflows of Resources</b>		
Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$5,054,145	\$17,504,762
Changes of assumptions or other inputs	0	0
Net difference between projected and actual earnings on pension plan investments	0	0
Difference between expected and actual experience in the Total Pension Liability	<u>402,496</u>	<u>804,992</u>
<b>Total Deferred Outflows of Resources</b>	<b>\$5,456,641</b>	<b>\$18,309,754</b>
<b>Deferred Inflows of Resources</b>		
Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$5,054,145	\$17,504,762
Changes of assumptions or other inputs	71,166,876	0
Net difference between projected and actual earnings on pension plan investments	32,375,410	24,100,416
Difference between expected and actual experience in the Total Pension Liability	<u>45,171,658</u>	<u>13,718,294</u>
<b>Total Deferred Inflows of Resources</b>	<b>\$153,768,089</b>	<b>\$55,323,472</b>
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
<b>Reporting Date for Employer under GASB 68 Year Ended June 30:</b>		
2019	N/A	-\$21,212,254
2020	-\$40,051,389	2,028,285
2021	-45,957,433	-3,877,759
2022	-56,031,664	-13,951,990
2023	-6,270,962	0
2024	0	0
Thereafter	0	0

<sup>(1)</sup>Calculated in accordance with Paragraphs 54 and 55 of GASB 68.



## Deferred Outflows of Resources and Deferred Inflows of Resources – Airport

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	June 30, 2018	June 30, 2017
<b>Deferred Outflows of Resources</b>		
Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
Changes of assumptions or other inputs	0	0
Net difference between projected and actual earnings on pension plan investments	0	0
Difference between expected and actual experience in the Total Pension Liability	<u>46,247</u>	<u>92,494</u>
<b>Total Deferred Outflows of Resources</b>	<b>\$46,247</b>	<b>\$92,494</b>
<b>Deferred Inflows of Resources</b>		
Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$0
Changes of assumptions or other inputs	8,177,074	0
Net difference between projected and actual earnings on pension plan investments	3,719,935	2,769,138
Difference between expected and actual experience in the Total Pension Liability	<u>5,190,224</u>	<u>1,576,232</u>
<b>Total Deferred Inflows of Resources</b>	<b>\$17,087,232</b>	<b>\$4,345,370</b>
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
<b>Reporting Date for Employer under GASBS 68 Year Ended June 30:</b>		
2019	N/A	-\$2,437,288
2020	-\$4,601,905	\$233,050
2021	-5,280,509	-445,554
2022	-6,438,038	-1,603,084
2023	-720,534	0
2024	0	0
Thereafter	0	0

<sup>(1)</sup>Calculated in accordance with Paragraphs 54 and 55 of GASBS 68.

## Deferred Outflows of Resources and Deferred Inflows of Resources – Watershed

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	June 30, 2018	June 30, 2017
<b>Deferred Outflows of Resources</b>		
Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$1,180,218	\$0
Changes of assumptions or other inputs	0	0
Net difference between projected and actual earnings on pension plan investments	0	0
Difference between expected and actual experience in the Total Pension Liability	<u>128,799</u>	<u>255,907</u>
<b>Total Deferred Outflows of Resources</b>	<b>\$1,309,017</b>	<b>\$255,907</b>
<b>Deferred Inflows of Resources</b>		
Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$3,702,644	\$5,553,966
Changes of assumptions or other inputs	22,773,400	0
Net difference between projected and actual earnings on pension plan investments	10,360,131	7,661,522
Difference between expected and actual experience in the Total Pension Liability	<u>14,454,931</u>	<u>4,361,046</u>
<b>Total Deferred Inflows of Resources</b>	<b>\$51,291,106</b>	<b>\$17,576,534</b>
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
<b>Reporting Date for Employer under GASBS 68 Year Ended June 30:</b>		
2019	N/A	-\$8,594,698
2020	-\$14,274,360	-\$1,206,530
2021	-16,164,295	-3,084,062
2022	-17,536,726	-4,435,338
2023	-2,006,708	0
2024	0	0
Thereafter	0	0

<sup>(1)</sup>Calculated in accordance with Paragraphs 54 and 55 of GASBS 68.

## Deferred Outflows of Resources and Deferred Inflows of Resources – General

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	June 30, 2018	June 30, 2017
<b>Deferred Outflows of Resources</b>		
Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$2,977,384	\$16,186,710
Changes of assumptions or other inputs	0	0
Net difference between projected and actual earnings on pension plan investments	0	0
Difference between expected and actual experience in the Total Pension Liability	<u>199,276</u>	<u>400,323</u>
<b>Total Deferred Outflows of Resources</b>	<b>\$3,176,660</b>	<b>\$16,587,033</b>
<b>Deferred Inflows of Resources</b>		
Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$1,351,501	\$11,853,407
Changes of assumptions or other inputs	35,234,720	0
Net difference between projected and actual earnings on pension plan investments	16,029,065	11,985,137
Difference between expected and actual experience in the Total Pension Liability	<u>22,364,488</u>	<u>6,822,108</u>
<b>Total Deferred Inflows of Resources</b>	<b>\$74,979,775</b>	<b>\$30,660,651</b>
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
<b>Reporting Date for Employer under GASBS 68 Year Ended June 30:</b>		
2019	N/A	-\$9,077,853
2020	-\$18,867,972	\$2,382,277
2021	-21,676,973	-439,718
2022	-28,153,418	-6,938,324
2023	-3,104,753	0
2024	0	0
Thereafter	0	0

<sup>(1)</sup>Calculated in accordance with Paragraphs 54 and 55 of GASBS 68.

## Deferred Outflows of Resources and Deferred Inflows of Resources – Sanitation

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	June 30, 2018	June 30, 2017
<b>Deferred Outflows of Resources</b>		
Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$896,543	\$1,318,052
Changes of assumptions or other inputs	0	0
Net difference between projected and actual earnings on pension plan investments	0	0
Difference between expected and actual experience in the Total Pension Liability	<u>28,175</u>	<u>56,269</u>
Total Deferred Outflows of Resources	\$924,718	\$1,374,321
<b>Deferred Inflows of Resources</b>		
Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$0	\$97,389
Changes of assumptions or other inputs	4,981,681	0
Net difference between projected and actual earnings on pension plan investments	2,266,279	1,684,619
Difference between expected and actual experience in the Total Pension Liability	<u>3,162,016</u>	<u>958,909</u>
Total Deferred Inflows of Resources	\$10,409,976	\$2,740,917
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
<b>Reporting Date for Employer under GASBS 68 Year Ended June 30:</b>		
2019	N/A	-\$1,102,415
2020	-\$2,307,152	\$619,488
2021	-2,835,656	91,575
2022	-3,903,482	-975,244
2023	-438,967	0
2024	0	0
Thereafter	0	0

<sup>(1)</sup> Calculated in accordance with Paragraphs 54 and 55 of GASBS 68.

There are changes in each employer's proportionate share of the total Net Pension Liability (NPL) during the measurement period ended June 30, 2018. The net effect of the change on the employer's proportionate share of the collective NPL and collective deferred outflows of resources and deferred inflows of resources is recognized over the average of the expected remaining service lives of all employees that are provided with pensions through the Pension Fund which is four years determined as of June 30, 2017 (the beginning of the measurement period ending June 30, 2018). This is described in Paragraph 33a. of GASB 68.

In addition, the difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ended June 30, 2018 is recognized over the same period. This is zero because the proportionate share was determined using the actual employer contributions.

There are also changes in each employer's proportionate share of the total Net Pension Liability (NPL) during the measurement period ended June 30, 2017. The net effect of the change on the employer's proportionate share of the collective NPL and collective deferred outflows of resources and deferred inflows of resources is recognized over the average of the expected remaining service lives of all employees that are provided with pensions through the Pension Fund which is four years determined as of June 30, 2016 (the beginning of the measurement period ending June 30, 2017). This is described in Paragraph 33a. of GASB 68.

The average of the expected service lives of all employees is determined by:

- Calculating each active employee's expected remaining service life as the present value of \$1 per year of future service at zero percent interest.
- Setting the remaining service life to zero for each nonactive or retired member.
- Dividing the sum of the above amounts by the total number of active employee, nonactive and retired members.

## Schedule of Reconciliation of Net Pension Liability – Total for all Employers

Reporting Date for Employer under GASB 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASB 68	June 30, 2018	June 30, 2017
<b>Beginning Net Pension Liability</b>	\$712,331,744	\$792,790,368
Pension expense	22,844,466	39,730,868
Employer contributions	-51,903,000	-53,817,000
New net deferred inflows/outflows	-132,509,984	-69,176,557
Change in allocation of prior deferred inflows/outflows	0	0
New net deferred flows due to change in proportion	0	0
Recognition of prior deferred inflows/outflows	21,212,254	2,804,065
Recognition of prior deferred inflows/outflows due to change in proportion	<u>0</u>	<u>0</u>
<b>Ending Net Pension Liability</b>	\$571,975,480	\$712,331,744

## Schedule of Reconciliation of Net Pension Liability – Airport

Reporting Date for Employer under GASBS 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
<b>Beginning Net Pension Liability</b>	\$81,846,917	\$91,091,613
Pension expense	2,624,829	4,565,077
Employer contributions	-5,963,655	-6,183,573
New net deferred inflows/outflows	-15,225,397	-7,948,386
Change in allocation of prior deferred inflows/outflows	0	0
New net deferred flows due to change in proportion	0	0
Recognition of prior deferred inflows/outflows	2,437,288	322,187
Recognition of prior deferred inflows/outflows due to change in proportion	<u>0</u>	<u>0</u>
<b>Ending Net Pension Liability</b>	\$65,719,983	\$81,846,917

## Schedule of Reconciliation of Net Pension Liability – Watershed

Reporting Date for Employer under GASBS 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
<b>Beginning Net Pension Liability</b>	\$226,450,261	\$259,718,125
Pension expense	5,852,315	10,779,123
Employer contributions	-16,608,960	-17,108,424
New net deferred inflows/outflows	-42,403,195	-21,991,227
Change in allocation of prior deferred inflows/outflows	-77,729	-284,781
New net deferred flows due to change in proportion	1,180,218	-5,553,966
Recognition of prior deferred inflows/outflows	6,787,921	891,412
Recognition of prior deferred inflows/outflows due to change in proportion	<u>1,851,322</u>	<u>0</u>
<b>Ending Net Pension Liability</b>	\$183,032,154	\$226,450,261



## Schedule of Reconciliation of Net Pension Liability – General

Reporting Date for Employer under GASBS 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
<b>Beginning Net Pension Liability</b>	\$354,242,577	\$388,070,885
Pension expense	12,369,154	21,229,158
Employer contributions	-25,697,175	-26,763,195
New net deferred inflows/outflows	-65,605,693	-34,401,502
Change in allocation of prior deferred inflows/outflows	81,431	228,999
New net deferred flows due to change in proportion	-1,236,420	4,466,076
Recognition of prior deferred inflows/outflows	10,502,187	1,394,462
Recognition of prior deferred inflows/outflows due to change in proportion	<u>-1,471,000</u>	<u>17,692</u>
<b>Ending Net Pension Liability</b>	\$283,185,059	\$354,242,577

## Schedule of Reconciliation of Net Pension Liability – Sanitation

Reporting Date for Employer under GASBS 68	June 30, 2019	June 30, 2018
Measurement Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
<b>Beginning Net Pension Liability</b>	\$49,791,989	\$53,909,745
Pension expense	1,998,168	3,157,510
Employer contributions	-3,633,210	-3,761,808
New net deferred inflows/outflows	-9,275,699	-4,835,441
Change in allocation of prior deferred inflows/outflows	-3,702	55,782
New net deferred flows due to change in proportion	56,202	1,087,890
Recognition of prior deferred inflows/outflows	1,484,858	196,004
Recognition of prior deferred inflows/outflows due to change in proportion	<u>-380,322</u>	<u>-17,692</u>
<b>Ending Net Pension Liability</b>	\$40,038,284	\$49,791,989

## Schedule of Recognition of Changes in Total Net Pension Liability

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience on Total Pension Liability

Reporting Date for Employer under GASB 68 Year Ended June 30:

Reporting Date for Employer under GASB 68 Year Ended June 30	Differences between Expected and Actual Experience	Recognition Period (Years)	2018	2019	2020	2021	2022	2023	2024	Thereafter
2015	\$0	N/A	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2016	-1,398,788	4	-349,697	-349,697	0	0	0	0	0	0
2017	1,609,982	4	402,496	402,496	402,496	0	0	0	0	0
2018	-17,824,795	4	-4,456,198	-4,456,199	-4,456,199	-4,456,199	0	0	0	0
2019	-48,345,680	4	N/A	<u>-12,086,420</u>	<u>-12,086,420</u>	<u>-12,086,420</u>	<u>-12,086,420</u>	<u>0</u>	<u>0</u>	<u>0</u>
Net increase (decrease) in pension expense			N/A	-\$16,489,820	-\$16,140,123	-\$16,542,619	-\$12,086,420	\$0	\$0	\$0

As described in Exhibit of Deferred Outflows of Resources and Deferred Inflows of Resources, the average of the expected remaining service lives of all employees that are provided with pensions through the Pension Fund (active and inactive employees) determined as of June 30, 2017 (the beginning of the measurement period ending June 30, 2018) is four years.

**Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Assumption Changes**

**Reporting Date for Employer under GASB 68 Year Ended June 30:**

Reporting Date for Employer under GASB 68 Year Ended June 30	Assumption Changes	Recognition Period (Years)	2018	2019	2020	2021	2022	2023	2024	Thereafter
2015	\$0	N/A	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2016	0	4	0	0	0	0	0	0	0	0
2017	0	4	0	0	0	0	0	0	0	0
2018	0	4	0	0	0	0	0	0	0	0
2019	-94,889,168	4	N/A	<u>-23,722,292</u>	<u>-23,722,292</u>	<u>-23,722,292</u>	<u>-23,722,292</u>	<u>0</u>	<u>0</u>	<u>0</u>
Net increase (decrease) in pension expense			N/A	-\$23,722,292	-\$23,722,292	-\$23,722,292	-\$23,722,292	\$0	\$0	\$0

As described in Exhibit of Deferred Outflows of Resources and Deferred Inflows of Resources, the average of the expected remaining service lives of all employees that are provided with pensions through the Pension Fund (active and inactive employees) determined as of June 30, 2017 (the beginning of the measurement period ending June 30, 2018) is four years.

**Increase (Decrease) in Pension Expense Arising from the Recognition of the Differences between Projected and Actual Earnings on Pension Plan Investments**

**Reporting Date for Employer under GASB 68 Year Ended June 30:**

Reporting Date for Employer under GASB 68 Year Ended June 30	Differences between Projected and Actual Earnings	Recognition Period (Years)	2018	2019	2020	2021	2022	2023	2024	Thereafter
2015	-\$114,454,212	5	-\$22,890,842	-\$22,890,842	\$0	\$0	\$0	\$0	\$0	\$0
2016	27,517,738	5	5,503,548	5,503,548	5,503,548	0	0	0	0	0
2017	72,652,150	5	14,530,430	14,530,430	14,530,430	14,530,430	0	0	0	0
2018	-69,759,950	5	-13,951,990	-13,951,990	-13,951,990	-13,951,990	-13,951,990	0	0	0
2019	-31,354,812	5	N/A	<u>-6,270,964</u>	<u>-6,270,962</u>	<u>-6,270,962</u>	<u>-6,270,962</u>	<u>-6,270,962</u>	<u>0</u>	<u>0</u>
Net increase (decrease) in pension expense			N/A	-\$23,079,818	-\$188,974	-\$5,692,522	-\$20,222,952	-\$6,270,962	\$0	\$0

**Total Increase (Decrease) in Pension Expense**

**Reporting Date for Employer under GASB 68 Year Ended June 30:**

Reporting Date for Employer under GASB 68 Year Ended June 30	Total	Recognition Period (Years)	2018	2019	2020	2021	2022	2023	2024	Thereafter
2015	-\$114,454,212	5	-\$22,890,842	-\$22,890,842	\$0	\$0	\$0	\$0	\$0	\$0
2016	26,118,950	5	5,153,851	5,153,851	5,503,548	0	0	0	0	0
2017	74,262,132	5	14,932,926	14,932,926	14,932,926	14,530,430	0	0	0	0
2018	-87,584,745	5	-18,408,188	-18,408,189	-18,408,189	-18,408,189	-13,951,990	0	0	0
2019	-174,589,660	5	N/A	<u>-42,079,676</u>	<u>-42,079,674</u>	<u>-42,079,674</u>	<u>-42,079,674</u>	<u>-6,270,962</u>	<u>0</u>	<u>0</u>
Net increase (decrease) in pension expense			N/A	-\$63,291,930	-\$40,051,389	-\$45,957,433	-\$56,031,664	-\$6,270,962	\$0	\$0

## **Allocation of Changes in Total Net Pension Liability**

In addition to the amounts shown in the preceding tables, there are changes in proportionate share of the total Net Pension Liability (NPL) between the measurement periods ending on June 30, 2018 and June 30, 2017 as a result of change in allocation percentage (the actual contributions made by an employer as a percentage of total contributions). The difference in proportionate share of the total NPL due to change in allocation percentage during the measurement period ending on June 30, 2018 is recognized over the average of the expected remaining service lives of all employees (four years). These amounts are shown below. While these amounts are different for each employer, they sum to zero over the Pension Fund.

**Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the  
Change in Proportion and Change in Employer Contributions for June 30, 2019**

**Reporting Date for Department under GASB 68 Year Ended June 30:**

Department	Total Change to be Recognized	Recognition Period (Years)	2019	2020	2021	2022	Thereafter
Airport	\$0	4	\$0	\$0	\$0	\$0	\$0
Watershed	1,573,626	4	393,408	393,406	393,406	393,406	0
General	-1,648,561	4	-412,141	-412,140	-412,140	-412,140	0
Sanitation	<u>74,935</u>	4	<u>18,733</u>	<u>18,734</u>	<u>18,734</u>	<u>18,734</u>	<u>0</u>
Total for All Departments	\$0		\$0	\$0	\$0	\$0	0



**Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for June 30, 2018**

**Reporting Date for Department under GASBS 68 Year Ended June 30:**

Department	Total Change to be Recognized	Recognition Period (Years)	2018	2019	2020	2021	2022	Thereafter
Airport	\$0	4	\$0	\$0	\$0	\$0	\$0	\$0
Watershed	-7,405,286	4	-1,851,320	-1,851,322	-1,851,322	-1,851,322	0	0
General	5,954,766	4	1,488,690	1,488,692	1,488,692	1,488,692	0	0
Sanitation	<u>1,450,520</u>	4	<u>362,630</u>	<u>362,630</u>	<u>362,630</u>	<u>362,630</u>	<u>0</u>	<u>0</u>
Total for All Departments	\$0		\$0	\$0	\$0	\$0	\$0	\$0

**Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for June 30, 2017**

**Reporting Date for Department under GASBS 68 Year Ended June 30:**

Department	Total Change to be Recognized	Recognition Period (Years)	2017	2018	2019	2020	2021	2022	Thereafter
Airport	\$0	4	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Watershed	0	4	0	0	0	0	0	0	0
General	-460,324	4	-115,081	-115,081	-115,081	-115,081	0	0	0
Sanitation	<u>460,324</u>	4	<u>115,081</u>	<u>115,081</u>	<u>115,081</u>	<u>115,081</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total for All Departments	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of the Change in Proportion and Change in Employer Contributions for June 30, 2016**

**Reporting Date for Department under GASBS 68 Year Ended June 30:**

Department	Total Change to be Recognized	Recogniti on Period (Years)	2016	2017	2018	2019	2020	2021	2022	Thereafter
Airport	\$0	4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Watershed	0	4	0	0	0	0	0	0	0	0
General	389,557	4	97,390	97,389	97,389	97,389	0	0	0	0
Sanitation	<u>-389,557</u>	4	<u>-97,390</u>	<u>-97,389</u>	<u>-97,389</u>	<u>-97,389</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total for All Departments	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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