

**City of Atlanta General  
Employees' Pension Fund  
Governmental Accounting Standards  
Board Statement 68 (GASB 68)  
Actuarial Valuation as of June 30, 2018**

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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2018 Powers Ferry Road, Suite 850 Atlanta, GA 30339-7200  
T 678.306.3100 www.segalco.com

June 27, 2018

Leighton O'Sullivan  
Deputy Controller  
City of Atlanta Department of Finance  
68 Mitchell St., SW, Suite 8100  
Atlanta, GA 30303

Dear Leighton:

We are pleased to submit this Governmental Accounting Standards Board Statement 68 (GASBS 68) Actuarial Valuation for the City of Atlanta General Employees' Pension Fund based on a June 30, 2017 measurement date for employer reporting as of June 30, 2018. It contains information that will need to be disclosed in order to comply with GASBS 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 the City of Atlanta Department of Finance. That assistance is gratefully acknowledged.

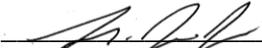
The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic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

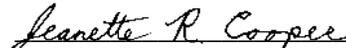
The actuarial calculations were completed under the supervision of Jeanette R. Cooper, FSA, FCA, MAAA, EA, Enrolled Actuary. Ms. Cooper is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To 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 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., 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 (GASBS 68) for employer reporting as of June 30, 2018. The results used in preparing this GASBS 68 report are comparable to those used in preparing the Governmental Accounting Standards Board Statement 67 (GASBS 67) report for the plan based on a reporting date and a measurement date as of June 30, 2017. This valuation is based on:

- The benefit provisions of Pension Fund, as administered by the Zenith American Solutions;
- The characteristics of covered active members, terminated vested members, and retired members and beneficiaries as of June 30, 2016, provided by Zenith American Solutions;
- The assets of the Plan as of June 30, 2017, provided by the City of Atlanta Department of Finance;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the June 30, 2016 valuation; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc. adopted by the Board for the June 30, 2016 valuation.

## Significant Issues

- When measuring pension liability, GASB uses the same actuarial cost method (Entry Age method) and the same type of 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 the Pension Fund's Actuarial Accrued Liability (AAL) measure for funding. The same is 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, 2017 and June 30, 2016 and determined based upon the results of the actuarial valuations as of June 30, 2016 and June 30, 2015, respectively.

- The NPL decreased from \$792.8 million as of June 30, 2016 to \$712.3 million as of June 30, 2017, primarily as a result of liability gains and favorable investment results. Changes in these values during the last two fiscal years ending June 30, 2016 and June 30, 2017 can be found in Section 2.
- The discount rate used to measure TPL and NPL as of both June 30, 2017 and June 30, 2016 was 7.50%.
- The NPLs for the departments in the City of Atlanta General Employees Pension Fund as of June 30, 2017 and June 30, 2016 are allocated based on the actual employer contributions made during the fiscal years ending in 2017 and 2016, respectively. The steps we used are as follows:
  - First calculate the 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 departments. The NPL allocation can be found in Section 2.

- The covered employee payroll for the June 30, 2016 measurement date shown on pages 10 and 11 is based on the projected payroll from the July 1, 2015 actuarial valuation report. The covered employee payroll for the June 30, 2017 measurement date shown on pages 10 and 11 is covered employee payroll from July 1, 2016 through June 30, 2017 provided by the City of Atlanta Department of Finance. This payroll represents the actual June 30, 2017 payroll incurred and is not an estimate.
- There have been no changes in benefit provisions or actuarial assumptions since GASB 68 implementation.
- Note that numbers may not always sum to totals due to rounding.

## Summary of Key Valuation Results

Reporting Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASBS 68	June 30, 2017	June 30, 2016
<b>Disclosure elements for fiscal year ending June 30:</b>		
Service cost	\$21,238,043	\$20,229,697
Total Pension Liability	1,941,751,744	1,915,576,368
Plan Fiduciary Net Position	1,229,420,000	1,122,786,000
Net Pension Liability	712,331,744	792,790,368
Pension expense	39,730,868	50,462,284
<b>Schedule of contributions for fiscal year ending June 30:</b>		
Actuarially determined contributions	\$53,815,973	\$54,235,740
Actual contributions	53,817,000	54,236,000
Contribution deficiency / (excess)	-1,027	-260
<b>Demographic data for plan year ending June 30<sup>1</sup>:</b>		
Number of retired members and beneficiaries	3,956	3,874
Number of vested terminated members <sup>2</sup>	304	275
Number of active members	3,071	3,452
<b>Key assumptions as of June 30:</b>		
Investment rate of return	7.50%	7.50%
Inflation rate	2.75%	2.75%
Projected salary increases <sup>3</sup>	3.50%	3.50%

<sup>1</sup>Numbers as of June 30, 2017 are projected based on a closed group forecast of the June 30, 2016 data.

<sup>2</sup>Includes 204 terminated members with member contributions on deposit as of June 30, 2016.

<sup>3</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 the City of Atlanta Department of Finance.
<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, 2016, pension plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	3,874
Vested terminated members entitled to but not yet receiving benefits*	275
Active members	3,452
Total	7,601

\*Includes 204 terminated members with member contributions on deposit.

The census data as of June 30, 2017 was not available at the time of this disclosure. However, the following as of June 30, 2017 is based on a closed group forecast of the July 1, 2016 census data:

Retired members or beneficiaries currently receiving benefits	3,956
Vested terminated members entitled to but not yet receiving benefits	304
Active members	3,071
Total	7,331

*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 VI of the July 1, 2016 actuarial valuation report. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

## Net Pension Liability

Reporting Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASBS 68	June 30, 2017	June 30, 2016
<b>Components of the Net Pension Liability</b>		
Total Pension Liability	\$1,941,751,744	\$1,915,576,368
Plan Fiduciary Net Position	1,229,420,000	1,122,786,000
Net Pension Liability	\$712,331,744	\$792,790,368
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	63.31%	58.61%

The Net Pension Liability (NPL) for the plan was measured as of June 30, 2017 and 2016. 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, 2016 and 2015, respectively. Consistent with the provisions of GASBS 68, the assets and liabilities as of June 30, 2017 and June 30, 2016 are *not* rolled forward to June 30, 2018 and June 30, 2017, 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, 2016 and June 30, 2015, respectively.

*Actuarial assumptions.* The TPL that was measured by an actuarial valuation as of June 30, 2016 and June 30, 2015 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> plus age-related salary scale
<b>Investment rate of return</b>	<b>7.50%</b> , net of pension plan investment expenses, including inflation
<b>Other assumptions</b>	See Section 3 for a complete description of all actuarial assumptions. These assumptions were developed in the actuarial 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. The target allocation and projected arithmetic real rates of return for each major asset class included in the Pension Fund's target asset allocation as of June 30, 2017 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return*
Domestic equity	50.00%	6.70%
Fixed income	25.00%	2.10%
International equity	20.00%	8.10%
Alternative Investments	5.00%	6.20%
Cash	0.00%	0.00%
Total	100.00%	5.81%

\* Real rates of return are net of inflation.

*Discount rate.* The discount rate used to measure the TPL was 7.50% as of June 30, 2017 and June 30, 2016. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rates 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, 2017 and June 30, 2016.

## Discount Rate Sensitivity

*Sensitivity of the Net Pension Liability to changes in the discount rate.* The following presents the NPL of the Pension Fund as of June 30, 2017, which is allocated to all departments, calculated using the discount rate of 7.50%, 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 (6.50%) or one percentage-point higher (8.50%) than the current rate. The determination of the NPL by department is shown later in Section 2.

Net Pension Liability	1% Decrease (6.50%)	Current Discount Rate (7.50%)	1% Increase (8.50%)
Airport	\$106,965,899	\$81,846,917	\$60,715,429
Watershed	295,948,296	226,450,261	167,984,638
General	462,960,325	354,242,577	262,783,141
Sanitation	65,073,249	49,791,989	36,936,540
Total for All Departments	\$930,947,769	\$712,331,744	\$528,419,748

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

Reporting Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASBS 68	June 30, 2017	June 30, 2016
<b>Total Pension Liability</b>		
Service cost	\$21,238,043	\$20,229,697
Interest	139,298,128	136,154,804
Change of benefit terms	0	0
Differences between expected and actual experience	-17,824,795	1,609,982
Changes of assumptions	0	0
Benefit payments, including refunds of member contributions	<u>-116,536,000</u>	<u>-115,631,000</u>
Net change in Total Pension Liability	\$26,175,376	\$42,363,483
Total Pension Liability – beginning	<u>1,915,576,368</u>	<u>1,873,212,885</u>
Total Pension Liability – ending	<u>\$1,941,751,744</u>	<u>\$1,915,576,368</u>
<b>Plan Fiduciary Net Position</b>		
Contributions – employer	\$53,817,000	\$54,236,000
Contributions – employee	18,243,000	19,173,000
Net investment income	152,258,000	12,257,000
Benefit payments, including refunds of member contributions	-116,536,000	-115,631,000
Administrative expense	-1,148,000	-964,000
Other	<u>0</u>	<u>0</u>
Net change in Plan Fiduciary Net Position	\$106,634,000	-\$30,929,000
Plan Fiduciary Net Position – beginning	<u>1,122,786,000</u>	<u>1,153,715,000</u>
Plan Fiduciary Net Position – ending	\$1,229,420,000	\$1,122,786,000
Net Pension Liability – ending	<u>\$712,331,744</u>	<u>\$792,790,368</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	63.31%	58.61%
Covered employee payroll	\$158,838,711	\$151,624,955
Plan Net Pension Liability as percentage of covered employee payroll	448.46%	522.86%

### Notes to Schedule:

*Benefit changes:* There have been no changes in benefit provisions since GASBS 67/68 implementation.

*Changes of assumptions:* There have been no assumption changes since GASBS 67/68 implementation.

## 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	Contributions as a Percentage of Covered Employee Payroll
2016	\$54,235,740	\$54,236,000	-\$260	\$151,624,955	35.77%
2017	53,815,973	53,817,000	-1,027	158,838,711	33.88%

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

<b>Valuation date</b>	Actuarial determined contribution rate was 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>	24 years remaining as of July 1, 2016
<b>Asset valuation method</b>	The 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>	7.50%, net of pension plan investment and administrative expenses, including inflation
<b>Inflation rate</b>	2.75%
<b>Projected salary increases</b>	3.50% plus age-related salary scale
<b>Cost of living adjustments</b>	3.00% (1.00% for post October 31, 2011 hires)
<b>Retirement rates:</b>	Rates vary from age 50 to 70 and for service greater or less than 30 years
<b>Mortality:</b>	Healthy: RP-2000 Combined Healthy Mortality Table Disabled: RP-2000 Disabled Retiree Mortality Table
<b>Other assumptions</b>	Same as those used in the July 1, 2016 funding actuarial valuation

## Determination of Proportionate Share

### Allocation of June 30, 2016 Net Pension Liability (NPL)

Department	Actual Employer Contributions, July 1, 2015 to June 30, 2016	Percentage	NPL
Airport	\$6,231,716	11.49%	\$91,091,613
Watershed	17,767,714	32.76%	259,718,125
General	25,447,531	46.92%	371,977,241
Civic Center	141,014	0.26%	2,061,255
Cyclorama	48,812	0.09%	713,511
Permits	911,165	1.68%	13,318,878
Sanitation	3,688,048	6.80%	53,909,745
<b>Total for All Departments</b>	<b>\$54,236,000</b>	<b>100.00%</b>	<b>\$792,790,368</b>

### 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>

\*Beginning with this June 30, 2018 valuation, Civic Center, Cyclorama and Permits are included with General.

\*

**Notes:**

Based on the June 30, 2016 through June 30, 2017 employer contributions as provided by the City of Atlanta's Department of Finance.

The Net Pension Liability (NPL) is the Total Pension Liability (TPL) minus the Plan Fiduciary Net Position (plan assets). The allocation of 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 GASBS 68 is June 30, 2018. The reporting date and measurement date for the plan under GASBS 67 are assumed to be June 30, 2017. This means that assets and liabilities are determined as of June 30, 2017 and are not adjusted or "rolled forward" to June 30, 2018. 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 Total Pension Liability
- Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability
- Member contributions
- Projected earnings on plan investments
- Expensed portion of current-period differences between actual and projected earnings on plan investments
- Administrative expense
- 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 GASBS 68	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASBS 68	June 30, 2017	June 30, 2016
<b>Components of Pension Expense</b>		
Service cost	\$21,238,043	\$20,229,697
Interest on the Total Pension Liability	139,298,128	136,154,804
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	--	--
Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	-4,456,198	402,494
Expensed portion of current-period changes of assumptions or other inputs	--	--
Member contributions	-18,243,000	-19,173,000
Projected earnings on plan investments	-82,498,050	-84,909,150
Expensed portion of current-period differences between actual and projected earnings on plan investments	-13,951,990	14,530,430
Administrative expense	1,148,000	964,000
Other	--	--
Recognition of beginning of year deferred outflows of resources as pension expense	20,436,474	5,503,548
Recognition of beginning of year deferred inflows of resources as pension expense	-23,240,539	-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>\$39,730,868</b>	<b>\$50,462,284</b>

## Pension Expense – Airport

Reporting Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASBS 68	June 30, 2017	June 30, 2016
<b>Components of Pension Expense</b>		
Service cost	\$2,440,251	\$2,324,392
Interest on the Total Pension Liability	16,005,355	15,644,187
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	--	--
Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	-512,017	46,247
Expensed portion of current-period changes of assumptions or other inputs	--	--
Member contributions	-2,096,121	-2,202,978
Projected earnings on plan investments	-9,479,026	-9,756,061
Expensed portion of current-period differences between actual and projected earnings on plan investments	-1,603,084	1,669,546
Administrative expense	131,905	110,764
Other	--	--
Recognition of beginning of year deferred outflows of resources as pension expense	2,348,151	632,358
Recognition of beginning of year deferred inflows of resources as pension expense	-2,670,338	-2,670,338
Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>--</u>	<u>--</u>
<b>Pension Expense</b>	<b>\$4,565,077</b>	<b>\$5,798,116</b>

## Pension Expense – Watershed

Reporting Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASBS 68	June 30, 2017	June 30, 2016
<b>Components of Pension Expense</b>		
Service cost	\$6,751,574	\$6,627,249
Interest on the Total Pension Liability	44,282,875	44,604,314
Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	-1,851,320	--
Expensed portion of current-period benefit changes	--	--
Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	-1,416,625	131,857
Expensed portion of current-period changes of assumptions or other inputs	--	--
Member contributions	-5,799,450	-6,281,075
Projected earnings on plan investments	-26,226,130	-27,816,238
Expensed portion of current-period differences between actual and projected earnings on plan investments	-4,435,338	4,760,169
Administrative expense	364,949	315,806
Other	--	--
Recognition of beginning of year deferred outflows of resources as pension expense	6,496,755	1,802,962
Recognition of beginning of year deferred inflows of resources as pension expense	-7,388,167	-7,613,601
Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>--</u>	<u>--</u>
<b>Pension Expense</b>	<b>\$10,779,123</b>	<b>\$16,531,444</b>

## Pension Expense – General\*

Reporting Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASBS 68	June 30, 2017	June 30, 2016
<b>Components of Pension Expense</b>		
Service cost	\$10,561,679	\$9,902,437
Interest on the Total Pension Liability	69,272,959	66,647,777
Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	1,488,690	-115,081
Expensed portion of current-period benefit changes	--	--
Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	-2,216,067	197,021
Expensed portion of current-period changes of assumptions or other inputs	--	--
Member contributions	-9,072,244	-9,385,184
Projected earnings on plan investments	-41,026,280	-41,563,029
Expensed portion of current-period differences between actual and projected earnings on plan investments	-6,938,325	7,112,645
Administrative expense	570,900	471,878
Other	--	--
Recognition of beginning of year deferred outflows of resources as pension expense	10,163,059	2,693,987
Recognition of beginning of year deferred inflows of resources as pension expense	-11,557,520	-11,376,244
Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>-17,692</u>	<u>97,389</u>
<b>Pension Expense</b>	<b>\$21,229,159</b>	<b>\$24,683,596</b>

\*Beginning with this June 30, 2018 valuation, Civic Center, Cyclorama and Permits are included with General.

## Pension Expense – Sanitation

Reporting Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASBS 68	June 30, 2017	June 30, 2016
<b>Components of Pension Expense</b>		
Service cost	\$1,484,539	\$1,375,619
Interest on the Total Pension Liability	9,736,939	9,258,527
Expensed portion of current-period changes in proportion and differences between employer's contributions and proportionate share of contributions	362,630	115,081
Expensed portion of current-period benefit changes	--	--
Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	-311,488	27,370
Expensed portion of current-period changes of assumptions or other inputs	--	--
Member contributions	-1,275,186	-1,303,764
Projected earnings on plan investments	-5,766,614	-5,773,822
Expensed portion of current-period differences between actual and projected earnings on plan investments	-975,244	988,069
Administrative expense	80,245	65,552
Other	--	--
Recognition of beginning of year deferred outflows of resources as pension expense	1,428,510	374,241
Recognition of beginning of year deferred inflows of resources as pension expense	-1,624,514	-1,580,357
Net amortization of deferred amounts from changes in proportion and differences between employer's contributions and proportionate share of contributions	<u>17,692</u>	<u>-97,389</u>
<b>Pension Expense</b>	<b>\$3,157,510</b>	<b>\$3,449,127</b>

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

Reporting Date for Employer under GASB 68	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASB 68	June 30, 2017	June 30, 2016
<b>Deferred Outflows of Resources</b>		
Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$17,504,762	\$540,021
Changes of assumptions or other inputs	0	0
Net difference between projected and actual earnings on pension plan investments	0	28,850,680
Difference between expected and actual experience in the Total Pension Liability	<u>804,992</u>	<u>1,207,488</u>
<b>Total Deferred Outflows of Resources</b>	<b>\$18,309,754</b>	<b>\$30,598,189</b>
<b>Deferred Inflows of Resources</b>		
Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$17,504,762	\$540,021
Changes of assumptions or other inputs	0	0
Net difference between projected and actual earnings on pension plan investments	24,100,416	0
Difference between expected and actual experience in the Total Pension Liability	<u>13,718,294</u>	<u>699,394</u>
<b>Total Deferred Inflows of Resources</b>	<b>\$55,323,472</b>	<b>\$1,239,415</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>		
2018	N/A	-\$2,804,065
2019	-\$21,212,254	-2,804,065
2020	2,028,285	20,436,474
2021	-3,877,759	14,530,430
2022	-13,951,990	0
2023	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 – Airport

Reporting Date for Employer under GASB 68	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASB 68	June 30, 2017	June 30, 2016

### Deferred Outflows of Resources

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	3,314,943
Difference between expected and actual experience in the Total Pension Liability	<u>92,494</u>	<u>138,740</u>
<b>Total Deferred Outflows of Resources</b>	<b>\$92,494</b>	<b>\$3,453,684</b>

### Deferred Inflows of Resources

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	2,769,138	0
Difference between expected and actual experience in the Total Pension Liability	<u>1,576,232</u>	<u>80,360</u>
<b>Total Deferred Inflows of Resources</b>	<b>\$4,345,370</b>	<b>\$80,360</b>

Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:

### Reporting Date for Employer under GASBS 68 Year Ended June 30:

2018	N/A	-\$322,187
2019	-\$2,437,288	-322,187
2020	233,050	2,348,151
2021	-445,554	1,669,546
2022	-1,603,084	0
2023	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, 2018	June 30, 2017
Measurement Date for Employer under GASB 68	June 30, 2017	June 30, 2016

### Deferred Outflows of Resources

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	9,451,483
Difference between expected and actual experience in the Total Pension Liability	<u>255,907</u>	<u>395,573</u>
<b>Total Deferred Outflows of Resources</b>	<b>\$255,907</b>	<b>\$9,847,056</b>

### Deferred Inflows of Resources

Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$5,553,966	\$0
Changes of assumptions or other inputs	0	0
Net difference between projected and actual earnings on pension plan investments	7,661,522	0
Difference between expected and actual experience in the Total Pension Liability	<u>4,361,046</u>	<u>229,121</u>
<b>Total Deferred Inflows of Resources</b>	<b>\$17,576,534</b>	<b>\$229,121</b>

Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:

### Reporting Date for Employer under GASBS 68 Year Ended June 30:

2018	N/A	-\$918,612
2019	-\$8,594,698	-918,612
2020	1,206,530	6,694,989
2021	-3,084,062	4,760,169
2022	-4,435,338	0
2023	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, 2018	June 30, 2017
Measurement Date for Employer under GASB 68	June 30, 2017	June 30, 2016

### Deferred Outflows of Resources

Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$16,186,710	\$194,778
Changes of assumptions or other inputs	0	0
Net difference between projected and actual earnings on pension plan investments	0	14,122,408
Difference between expected and actual experience in the Total Pension Liability	<u>400,323</u>	<u>591,065</u>
<b>Total Deferred Outflows of Resources</b>	<b>\$16,587,033</b>	<b>\$14,908,251</b>

### Deferred Inflows of Resources

Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$11,853,407	\$345,243
Changes of assumptions or other inputs	0	0
Net difference between projected and actual earnings on pension plan investments	11,985,137	0
Difference between expected and actual experience in the Total Pension Liability	<u>6,822,108</u>	<u>342,353</u>
<b>Total Deferred Inflows of Resources</b>	<b>\$30,660,651</b>	<b>\$687,596</b>

Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:

#### Reporting Date for Employer under GASBS 68 Year Ended June 30:

2018	N/A	-\$1,390,282
2019	-\$9,077,853	-1,390,282
2020	2,382,277	9,888,573
2021	-439,718	7,112,646
2022	-6,938,324	0
2023	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, 2018	June 30, 2017
Measurement Date for Employer under GASB 68	June 30, 2017	June 30, 2016

### Deferred Outflows of Resources

Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$1,318,052	\$345,243
Changes of assumptions or other inputs	0	0
Net difference between projected and actual earnings on pension plan investments	0	1,961,846
Difference between expected and actual experience in the Total Pension Liability	<u>56,269</u>	<u>82,109</u>
<b>Total Deferred Outflows of Resources</b>	<b>\$1,374,321</b>	<b>\$2,389,198</b>

### Deferred Inflows of Resources

Changes in proportion and differences between employer's contributions and proportionate share of contributions <sup>(1)</sup>	\$97,389	\$194,778
Changes of assumptions or other inputs	0	0
Net difference between projected and actual earnings on pension plan investments	1,684,619	0
Difference between expected and actual experience in the Total Pension Liability	<u>958,909</u>	<u>47,559</u>
<b>Total Deferred Inflows of Resources</b>	<b>\$2,740,917</b>	<b>\$242,337</b>

Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:

#### Reporting Date for Employer under GASBS 68 Year Ended June 30:

2018	N/A	-\$172,984
2019	-\$1,102,415	-172,984
2020	619,488	1,504,761
2021	91,575	988,069
2022	-975,244	0
2023	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, 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 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 GASBS 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, 2017 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, 2016. 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 Pension Fund which is four years determined as of June 30, 2015 (the beginning of the measurement period ending June 30, 2016). This is described in Paragraph 33a. of GASBS 68.

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

Reporting Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASBS 68	June 30, 2017	June 30, 2016
<b>Beginning Net Pension Liability</b>	\$792,790,368	\$719,497,885
Pension expense	39,730,868	50,462,284
Employer contributions	-53,817,000	-54,236,000
New net deferred inflows/outflows	-69,176,557	59,329,208
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	2,804,065	17,736,991
Recognition of prior deferred inflows/outflows due to change in proportion	<u>0</u>	<u>0</u>
<b>Ending Net Pension Liability</b>	\$712,331,744	\$792,790,368

## Schedule of Reconciliation of Net Pension Liability – Airport

Reporting Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASBS 68	June 30, 2017	June 30, 2016
<b>Beginning Net Pension Liability</b>	\$91,091,613	\$82,670,307
Pension expense	4,565,077	5,798,116
Employer contributions	-6,183,573	-6,231,716
New net deferred inflows/outflows	-7,948,386	6,816,926
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	322,187	2,037,980
Recognition of prior deferred inflows/outflows due to change in proportion	<u>0</u>	<u>0</u>
<b>Ending Net Pension Liability</b>	\$81,846,917	\$91,091,613

## Schedule of Reconciliation of Net Pension Liability – Watershed

Reporting Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASBS 68	June 30, 2017	June 30, 2016
<b>Beginning Net Pension Liability</b>	\$259,718,125	\$235,707,507
Pension expense	10,779,123	16,531,444
Employer contributions	-17,108,424	-17,767,714
New net deferred inflows/outflows	-21,991,227	19,436,249
Change in allocation of prior deferred inflows/outflows	-284,781	0
New net deferred flows due to change in proportion	-5,553,966	0
Recognition of prior deferred inflows/outflows	891,412	5,810,638
Recognition of prior deferred inflows/outflows due to change in proportion	<u>0</u>	<u>0</u>
<b>Ending Net Pension Liability</b>	\$226,450,261	\$259,718,125

## Schedule of Reconciliation of Net Pension Liability – General

Reporting Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASBS 68	June 30, 2017	June 30, 2016
<b>Beginning Net Pension Liability</b>	\$388,070,885	\$352,625,914
Pension expense	21,229,158	24,683,597
Employer contributions	-26,763,195	-26,548,522
New net deferred inflows/outflows	-34,401,502	29,041,647
Change in allocation of prior deferred inflows/outflows	228,999	28,625
New net deferred flows due to change in proportion	4,466,076	-345,243
Recognition of prior deferred inflows/outflows	1,394,462	8,682,257
Recognition of prior deferred inflows/outflows due to change in proportion	<u>17,692</u>	<u>-97,389</u>
<b>Ending Net Pension Liability</b>	\$354,242,577	\$388,070,885

## Schedule of Reconciliation of Net Pension Liability – Sanitation

Reporting Date for Employer under GASBS 68	June 30, 2018	June 30, 2017
Measurement Date for Employer under GASBS 68	June 30, 2017	June 30, 2016
<b>Beginning Net Pension Liability</b>	\$53,909,745	\$48,494,157
Pension expense	3,157,510	3,449,127
Employer contributions	-3,761,808	-3,688,048
New net deferred inflows/outflows	-4,835,441	4,034,386
Change in allocation of prior deferred inflows/outflows	55,782	-28,625
New net deferred flows due to change in proportion	1,087,890	345,243
Recognition of prior deferred inflows/outflows	196,004	1,206,115
Recognition of prior deferred inflows/outflows due to change in proportion	<u>-17,692</u>	<u>97,389</u>
<b>Ending Net Pension Liability</b>	\$49,791,989	\$53,909,745

## 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 GASBS 68 Year Ended June 30:

Reporting Date for Employer under GASBS 68 Year Ended June 30	Differences between Expected and Actual Experience	Recognition Period (Years)	2017	2018	2019	2020	2021	2022	2023	Thereafter
2015	\$0	N/A	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2016	-1,398,788	4	-349,697	-349,697	-349,697	0	0	0	0	0
2017	1,609,982	4	402,494	402,496	402,496	402,496	0	0	0	0
2018	-17,824,795	4	N/A	<u>-4,456,198</u>	<u>-4,456,199</u>	<u>-4,456,199</u>	<u>-4,456,199</u>	<u>0</u>	<u>0</u>	<u>0</u>
Net increase (decrease) in pension expense			N/A	-\$4,403,399	-\$4,403,400	-\$4,053,703	-\$4,456,199	\$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 Pension Fund (active and inactive employees) determined as of June 30, 2016 (the beginning of the measurement period ending June 30, 2017) is four years.

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

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

Reporting Date for Employer under GASBS 68 Year Ended June 30	Assumption Changes	Recognition Period (Years)	2017	2018	2019	2020	2021	2022	2023	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	N/A	<u>0</u>						
Net increase (decrease) in pension expense			N/A	\$0	\$0	\$0	\$0	\$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 Pension Fund (active and inactive employees) determined as of June 30, 2016 (the beginning of the measurement period ending June 30, 2017) 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 GASBS 68 Year Ended June 30:**

Reporting Date for Employer under GASBS 68 Year Ended June 30	Differences between Expected and Actual Earnings	Recognition Period (Years)	2017	2018	2019	2020	2021	2022	2023	Thereafter
2015	-\$114,454,212	5	-\$22,890,842	-\$22,890,842	-\$22,890,842	\$0	\$0	\$0	\$0	\$0
2016	27,517,738	5	5,503,548	5,503,548	5,503,548	5,503,548	0	0	0	0
2017	72,652,150	5	14,530,430	14,530,430	14,530,430	14,530,430	14,530,430	0	0	0
2018	-69,759,950	5	N/A	<u>-13,951,990</u>	<u>-13,951,990</u>	<u>-13,951,990</u>	<u>-13,951,990</u>	<u>-13,951,990</u>	<u>0</u>	<u>0</u>
Net increase (decrease) in pension expense			N/A	-\$16,808,854	-\$16,808,854	\$6,081,988	\$578,440	-\$13,951,990	\$0	\$0

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

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

Reporting Date for Employer under GASBS 68 Year Ended June 30	Total	Recognition Period (Years)	2017	2018	2019	2020	2021	2022	2023	Thereafter
2015	-\$114,454,212	5	-\$22,890,842	-\$22,890,842	-\$22,890,842	\$0	\$0	\$0	\$0	\$0
2016	26,118,950	5	5,153,851	5,153,851	5,153,851	5,503,548	0	0	0	0
2017	74,262,132	5	14,932,924	14,932,926	14,932,926	14,932,926	14,530,430	0	0	0
2018	-87,584,745	5	N/A	<u>-18,408,188</u>	<u>-18,408,189</u>	<u>-18,408,189</u>	<u>-18,408,189</u>	<u>-13,951,990</u>	<u>0</u>	<u>0</u>
Net increase (decrease) in pension expense			N/A	-\$21,212,253	-\$21,212,254	\$2,028,285	-\$3,877,759	-\$13,951,990	\$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 NPL between the measurement periods ending on June 30, 2017 and June 30, 2016 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, 2017 is recognized over the average of the expected remaining service lives of all employees (four years). These amounts are shown on the following pages. 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, 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	Thereafter
Airport	\$0	4	\$0	\$0	\$0	\$0	\$0
Watershed	-7,405,286	4	-1,851,320	-1,851,322	-1,851,320	-1,851,322	0
General	5,954,766	4	1,488,690	1,488,692	1,488,690	1,488,692	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>
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, 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	Thereafter
Airport	\$0	4	\$0	\$0	\$0	\$0	\$0	\$0
Watershed	0	4	0	0	0	0	0	0
General	-460,324	4	-115,081	-115,081	-115,081	-115,081	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>
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, 2016**

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

Department	Total Change to be Recognized	Recognition Period (Years)	2016	2017	2018	2019	2020	2021	Thereafter
Airport	\$0	4	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Watershed	0	4	0	0	0	0	0	0	0
General	389,557	4	97,390	97,389	97,389	97,389	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>
Total for All Departments	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0

## Section 3: Actuarial Assumptions and Methods and Appendices

### EXHIBIT I – ACTUARIAL ASSUMPTIONS AND ACTUARIAL COST METHOD

<b>Actuarial Valuation Date used to Measure NPL as of June 30, 2017:</b>	June 30, 2016												
<b>Rationale for Assumptions:</b>	The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the Experience Study Report for the 7½ year period ended June 30, 2011. The following assumptions were used in the actuarial valuation as of June 30, 2016.												
<b>Net Investment Return:</b>	7.50%, the investment return rate is assumed to be net of investment and administrative expenses. The net investment return assumption was chosen by the Pension Fund's Board of Trustees, with input from the actuary. This assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes, as well as the Plan's target asset allocation.												
<b>Salary Increases:</b>	<table border="1"> <thead> <tr> <th>Age</th> <th>Rate (%)</th> </tr> </thead> <tbody> <tr> <td>Under 30</td> <td>7.25</td> </tr> <tr> <td>30 - 39</td> <td>5.25</td> </tr> <tr> <td>40 - 49</td> <td>4.25</td> </tr> <tr> <td>50 - 59</td> <td>3.75</td> </tr> <tr> <td>60 &amp; over</td> <td>3.50</td> </tr> </tbody> </table> <p><i>Salary increases include an assumed inflation rate of 2.75% and 0.75% productivity.</i></p>	Age	Rate (%)	Under 30	7.25	30 - 39	5.25	40 - 49	4.25	50 - 59	3.75	60 & over	3.50
Age	Rate (%)												
Under 30	7.25												
30 - 39	5.25												
40 - 49	4.25												
50 - 59	3.75												
60 & over	3.50												
<b>Vacation Pay Adjustment:</b>	Retirement benefits are increased by 4% to reflect vacation pay.												
<b>Payroll Growth:</b>	3.50%, used to amortize the unfunded actuarial accrued liability as a level percentage of payroll.												
<b>Cost-of-Living Adjustments:</b>	3.00%, compounded annually for hires before November 1, 2011 1.00%, compounded annually for hires after October 31, 2011												

**Mortality Rates:***Healthy:*

RP-2000 Combined Healthy Mortality Table with sex-distinct rates

*Disabled:*

RP-2000 Disabled Retiree Mortality Table with sex-distinct rates

These mortality tables were determined to contain provision appropriate to reasonably reflect future mortality improvement, based on a 7½ year review of mortality experience for the 2003-2011 period. The mortality assumption will be assessed again at the time of the next review, and further adjustment or expected improvements in life expectancy will be made if warranted.

**Mortality and Disability Rates before Retirement:**

Age	Rate (%)			
	Mortality		Ordinary Disability*	
	Male	Female	Male	Female
20	0.03	0.02	0.00	0.00
25	0.04	0.02	0.00	0.00
30	0.04	0.03	0.00	0.00
35	0.08	0.05	0.12	0.11
40	0.11	0.07	0.17	0.17
45	0.15	0.11	0.27	0.25
50	0.21	0.17	0.46	0.40
55	0.36	0.27	0.80	0.67
60	0.67	0.51	1.19	0.82

\*Occupational disability rates are 10% of the ordinary disability rates

**Termination Rates before Retirement:**

Years of Service	Rate (%)*
Less than 1	25.00
1	22.00
2	12.00
3	11.00
4	10.00
5	9.00
6	7.00
7	7.00
8	6.50
9	5.50
10	5.00
11	4.50
12	4.00
13	3.50
14	3.00
15 or more	2.50

*\*Withdrawal rates do not apply at or beyond the later of eligibility for early retirement or age 55.*

<b>Retirement Rates:</b>	<b>Less than 30 Years of Service</b>		<b>30 or More Years of Service</b>	
	Age	Rate (%)	Age	Rate (%)
	50-52	2.0	50-52	30.0
	53-54	3.0	53-54	35.0
	55	5.0	55	35.0
	56	6.0	56	35.0
	57	6.0	57	40.0
	58-59	7.0	58-59	40.0
	60	20.0	60	40.0
	61-64	15.0	61-64	27.0
	65-66	25.0	65-66	25.0
	67-68	15.0	67-68	25.0
	69	25.0	69	25.0
70	100.0	70	100.0	
	The retirement rates were based on historical and current demographic data, adjusted to reflect estimated future experience and professional judgment. As part of the analysis, a comparison was made between the actual number of retirements by age and the projected number based on the prior year's assumption over the 7½ year period ended June 30, 2011.			
<b>Retirement Age for Vested Inactive Participants:</b>	Age 60			
<b>Unknown Data for Participants:</b>	There were no records that were missing both service amounts and dates of hire.			
<b>Weighted Average Retirement Age:</b>	Age 61.2, determined as follows: The weighted average retirement age for each participant is calculated as the sum of the product of each potential current or future retirement age times the probability of surviving from current age to that age and then retiring at that age, assuming no other decrements. The overall weighted retirement age is the average of the individual retirement ages based on all the active participants included in the July 1, 2016 actuarial valuation.			
<b>Percent Married:</b>	75%			
<b>Age of Spouse:</b>	Females are assumed to be three years younger than their male spouses.			

<b>Refunds of Employee Contributions for Terminated Vested Participants:</b>	50% of employee contribution balances for hires before November 1, 2011 100% of employee contribution balances for hires after October 31, 2011
<b>Actuarial Value of Assets:</b>	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five-year period, further adjusted, if necessary, to be within 20% of the market value.
<b>Actuarial Cost Method:</b>	Entry Age Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary.
<b>Expected Remaining Service Lives:</b>	The average of the expected service lives of all employees is determined by: <ul style="list-style-type: none"> <li>• Calculating each active employee's expected remaining service life as the present value of \$1 per year of future service at zero percent interest.</li> <li>• Setting the remaining service life to zero for each nonactive or retired member.</li> <li>• Dividing the sum of the above amounts by the total number of active employee, nonactive, and retired members.</li> </ul> As of the June 30, 2017 measurement date, this average is four years (unchanged from last year).
<b>Change in Actuarial Assumptions:</b>	There have been no changes in actuarial assumptions or methods since the last valuation.

## APPENDIX – GLOSSARY OF TERMS

Definitions of certain terms *as they are used in Statement 68*. The terms may have different meanings in other contexts.

<b>Active Employees:</b>	Individuals employed at the end of the reporting or measurement period, as applicable.
<b>Actual Contributions:</b>	Cash contributions recognized as additions to a pension Plan Fiduciary Net Position.
<b>Actuarial Present Value of Projected Benefit Payments:</b>	Projected benefit payments discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
<b>Actuarial Valuation:</b>	The determination, as of a point in time (the actuarial valuation date), of the service cost, Total Pension Liability, and related actuarial present value of projected benefit payments for pensions performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.
<b>Actuarial Valuation Date:</b>	The date as of which an actuarial valuation is performed.
<b>Actuarially Determined Contribution:</b>	A target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.
<b>Ad Hoc Cost-of-Living Adjustments (Ad Hoc COLAs):</b>	Cost-of-living adjustments that require a decision to grant by the authority responsible for making such decisions.
<b>Ad Hoc Postemployment Benefit Changes:</b>	Postemployment benefit changes that require a decision to grant by the authority responsible for making such decisions.
<b>Agent Employer:</b>	An employer whose employees are provided with pensions through an agent multiple-employer defined benefit pension plan.
<b>Agent Multiple-Employer Defined Benefit Pension Plan (Agent Pension Plan):</b>	A multiple-employer defined benefit pension plan in which pension plan assets are pooled for investment purposes but separate accounts are maintained for each individual employer so that each employer's share of the pooled assets is legally available to pay the benefits of only its employees.
<b>Allocated Insurance Contract:</b>	A contract with an insurance company under which related payments to the insurance company are currently used to purchase immediate or deferred annuities for individual employees. Also may be referred to as an annuity contract.

<b>Automatic Cost-of-Living Adjustments (Automatic COLAs):</b>	Cost-of-living adjustments that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).
<b>Automatic Postemployment Benefit Changes:</b>	Postemployment benefit changes that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).
<b>Closed Period:</b>	A specific number of years that is counted from one date and declines to zero with the passage of time. For example, if the recognition period initially is five years on a closed basis, four years remain after the first year, three years after the second year, and so forth.
<b>Collective Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions:</b>	Deferred outflows of resources and deferred inflows of resources related to pensions arising from certain changes in the collective Net Pension Liability.
<b>Collective Net Pension Liability:</b>	The Net Pension Liability for benefits provided through (1) a cost-sharing pension plan or (2) a single-employer or agent pension plan in circumstances in which there is a special funding situation.
<b>Collective Pension Expense:</b>	Pension expense arising from certain changes in the collective Net Pension Liability.
<b>Contributions:</b>	Additions to a pension Plan Fiduciary Net Position for amounts from employers, non-employer contributing entities (for example, state government contributions to a local government pension plan), or employees. Contributions can result from cash receipts by the pension plan or from recognition by the pension plan of a receivable from one of these sources.
<b>Cost-of-Living Adjustments:</b>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<b>Cost-Sharing Employer:</b>	An employer whose employees are provided with pensions through a cost-sharing multiple-employer defined benefit pension plan.
<b>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (Cost-Sharing Pension Plan):</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>Covered-Employee Payroll:</b>	The compen of employees that are provided with pensions through the pension plan.

<b>Deferred Retirement Option Program (DROP):</b>	A program that permits an employee to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The employee continues to provide service to the employer and is paid for that service by the employer after the DROP entry date; however, the pensions that would have been paid to the employee (if the employee had retired and not entered the DROP) are credited to an individual employee account within the defined benefit pension plan until the end of the DROP period.
<b>Defined Benefit Pension Plans:</b>	Pension plans that are used to provide defined benefit pensions.
<b>Defined Benefit Pensions:</b>	Pensions for which the income or other benefits that the employee will receive at or after separation from employment are defined by the benefit terms. The pensions may be stated as a specified dollar amount or as an amount that is calculated based on one or more factors such as age, years of service, and compensation. (A pension that does not meet the criteria of a defined contribution pension is classified as a defined benefit pension for purposes of Statement 68.)
<b>Defined Contribution Pension Plans:</b>	Pension plans that are used to provide defined contribution pensions.
<b>Defined Contribution Pensions:</b>	Pensions having terms that (1) provide an individual account for each employee; (2) define the contributions that an employer is required to make (or the credits that it is required to provide) to an active employee's account for periods in which that employee renders service; and (3) provide that the pensions an employee will receive will depend only on the contributions (or credits) to the employee's account, actual earnings on investments of those contributions (or credits), and the effects of forfeitures of contributions (or credits) made for other employees, as well as pension plan administrative costs, that are allocated to the employee's account.
<b>Discount Rate:</b>	The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following: <ol style="list-style-type: none"> <li>1. The actuarial present value of benefit payments projected to be made in future periods in which (a) the amount of the pension Plan Fiduciary Net Position is projected (under the requirements of Statement 68) to be greater than the benefit payments that are projected to be made in that period and (b) pension plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on pension plan investments.</li> <li>2. The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.</li> </ol>

<b>Entry Age Actuarial Cost Method:</b>	A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age(s). The portion of this actuarial present value allocated to a valuation year is called 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 called the actuarial accrued liability.
<b>Inactive Employees:</b>	Terminated individuals that have accumulated benefits but are not yet receiving them, and retirees or their beneficiaries currently receiving benefits.
<b>Measurement Period:</b>	The period between the prior and the current measurement dates.
<b>Multiple-Employer Defined Benefit Pension Plan:</b>	A defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
<b>Net Pension Liability (NPL):</b>	The liability of employers and non-employer contributing entities to employees for benefits provided through a defined benefit pension plan.
<b>Non-Employer Contributing Entities:</b>	Entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of Statement 68, employees are not considered non-employer contributing entities.
<b>Other Postemployment Benefits:</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>Pension Plans:</b>	Arrangements through which pensions are determined, assets dedicated for pensions are accumulated and managed and benefits are paid as they come due.
<b>Pensions:</b>	Retirement income and, if provided through a pension plan, postemployment benefits other than retirement income (such as death benefits, life insurance, and disability benefits). Pensions do not include postemployment healthcare benefits and termination benefits.
<b>Plan Members:</b>	Individuals that are covered under the terms of a pension plan. Plan members generally include (1) employees in active service (active plan members) and (2) terminated employees who have accumulated benefits but are not yet receiving them and retirees or their beneficiaries currently receiving benefits (inactive plan members).

<b>Postemployment:</b>	The period after employment.
<b>Postemployment Benefit Changes:</b>	Adjustments to the pension of an inactive employee.
<b>Postemployment Healthcare Benefits:</b>	Medical, dental, vision, and other health-related benefits paid subsequent to the termination of employment.
<b>Projected Benefit Payments:</b>	All benefits estimated to be payable through the pension plan to current active and inactive employees as a result of their past service and their expected future service.
<b>Public Employee Retirement System:</b>	A special-purpose government that administers one or more pension plans; also may administer other types of employee benefit plans, including postemployment healthcare plans and deferred compensation plans.
<b>Real Rate of Return:</b>	The rate of return on an investment after adjustment to eliminate inflation.
<b>Service Costs:</b>	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
<b>Single Employer:</b>	An employer whose employees are provided with pensions through a single-employer defined benefit pension plan.
<b>Single-Employer Defined Benefit Pension Plan (Single-Employer Pension Plan):</b>	A defined benefit pension plan that is used to provide pensions to employees of only one employer.
<b>Special Funding Situations:</b>	<p>Circumstances in which a non-employer entity is legally responsible for making contributions directly to a pension plan that is used to provide pensions to the employees of another entity or entities and either of the following conditions exists:</p> <ol style="list-style-type: none"> <li>1. The amount of contributions for which the non-employer entity legally is responsible is not dependent upon one or more events or circumstances unrelated to the pensions.</li> <li>2. The non-employer entity is the only entity with a legal obligation to make contributions directly to a pension plan.</li> </ol>
<b>Termination Benefits:</b>	Inducements offered by employers to active employees to hasten the termination of services, or payments made in consequence of the early termination of services. Termination benefits include early-retirement incentives, severance benefits, and other termination-related benefits.
<b>Total Pension Liability (TPL):</b>	The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of Statement 68.

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