KORN FERRY

Chatham County

Post-Retirement Medical Plan
GASB 74/75 Financial Accounting Disclosure
For the Fiscal Year Ending June 30, 2018

November 2018

Contents

Actuarial Certification

Chatham County retained Korn Ferry Hay Group to perform an actuarial valuation in accordance with GASB Statements No. 74 (Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans) and No. 75 (Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions). The purpose of this valuation is to provide the County with certain actuarial values that are required for its financial statements disclosure. Use of the valuation results for other purposes may not be appropriate.

We have relied on census and benefit information provided by the County and/or its benefits administrator. We have not audited the information provided and its sources although we have reviewed it for reasonableness and, where necessary, requested corrections and clarifications. We are satisfied that the information provided by the County is sufficient for the purpose for which it has been used.

The results shown in this report are reasonable actuarial results. However, a different set of actuarial results could also be considered reasonable as actuarial standards of practice describe a "best-estimate range" for each assumption, rather than a single best-estimate value. Thus, reasonable results differing from those presented in this report could have been developed by selecting different points within the best-estimate ranges for various assumptions.

Assumptions used for the valuation were selected by the plan sponsor with our advice and concurrence, and we believe they are each reasonable based on its own merits and in combination represent the expected experience of the plan. All calculations have been conducted in accordance with generally accepted actuarial principles and practices.

Future actuarial measurements may differ significantly from current measurements due to such factors as plan experience differing from that anticipated by the assumptions, changes in future assumptions, and changes in plan provisions or applicable law. Because of the limited scope of our engagement, an analysis of the potential range of such future differences in measurement was not performed.

The actuary certifying to this valuation is a member of the Society of Actuaries and other professional actuarial organizations and meets the General Qualification Standards of the American Academy of Actuaries for purposes of issuing Statements of Actuarial Opinion, including Code of Professional Conduct Precept 7 regarding conflict of interest. Neither Korn Ferry Hay Group nor any of its employees has any relationship with the Plan Sponsor that could impair or appear to impair the objectivity of this report.

Evi Laksana, ASA, MAAA

November 28, 2018

Section 1: Executive Summary

Chatham County ("the County") sponsors a medical and prescription drug plans as well as life insurance. Eligible retirees and their dependents may continue health care coverage through the County for life. The plan covers eligible retirees who elect to participate and pay any required contributions. This report is for the actuarial valuation of the postemployment health benefit plan. The County adopted GASB 74 for the year ended June 30, 2017 and GASB 75 for the year ended June 30, 2018.

The calculations were based on an actuarial valuation as of July 1, 2018 using census data and recent health care cost information which was provided by the County.

GASB 75

In June 2015 the Governmental Accounting Standards Board (GASB) issued Statement Number 74 (Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans) and 75 (Accounting and Financial Reporting for Postemployment Benefits Other than Pensions) which are meant to replace GASB 43 and 45. The effective date for GASB 74 is for plans with fiscal years beginning after June 15, 2016 and for employers with fiscal years beginning after June 15, 2017 for GASB 75. The County is assumed to be a single employer without a special funding situation with a qualified trust for the purposes of reporting under GASB 74/75.

GASB 74 and 75 requires the Total OPEB Liability (TOL) to be calculated based on the Entry Age Normal Level Percent of Pay (EAN) actuarial cost method. These benefits are currently pre-funded.

This valuation includes:

- all retirees who are currently receiving these benefits; and
- all active employees who will be eligible in the future to receive these benefits.

The County has provided a census of these employees and retirees. A summary of this data is presented in Section 6.

An actuarial valuation requires assumptions for the following parameters:

- A discount rate, at which future benefit cashflows are discounted, is set as (a) the long-term expected rate of return on OPEB Plan investments to the extent that the OPEB plan assets are projected to be sufficient to make projected benefit payments and expected to be invested using a strategy to achieve that return or (b) the yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale) if the conditions in (a) are not met;
- Mortality rates relevant to the underlying group of employees and retirees;
- Withdrawal rates relevant to the underlying group of employees;
- Retirement rates relevant to the underlying group of employees; and
- Current and future per capita claim costs for the benefits being valued.

In determining the initial per capita claim cost, we have relied on Health Cost information provided by the County (or its benefits administrator on its behalf).

The assumptions used in this valuation conform to the requirements of GASB 74 and 75 and generally accepted actuarial principles. Details of the assumptions are presented in Section 5 and Appendix A.

The calculations were performed using a Valuation Date (VD) of July 1, 2018 for reporting in the County's full accrual financial statements for a Measurement Date (MD) of June 30, 2018. This report presents results as of June 30, 2018 and may be used for June 30, 2018 financial statements, provided there are no material changes to:

- any of the benefits packages;
- any of the cost-sharing structures; and
- the census.

The County next valuation should be as of July 1, 2020, for reporting in the County's full accrual financial statement as of June 30, 2020.

Excise Tax

The impact of the Excise Tax provisions contained in the Patient Protection and Affordable Care Act was excluded from this analysis due to the uncertainty of its implementation. Under the provision of the Excise Tax, the County is liable for 40% of the cost of coverage above the excise tax thresholds beginning on January 1, 2022, which could have an impact on the County's liabilities.

Below is the summary of key results. The meaning of the terms presented in the table below can be found in Appendix B. **All valuation results below, and in subsequent tables, are shown in thousands**.

Table 1 - Executive Summary

	FY 2017/18	FY 2016/17
Valuation Date (VD)	July 1, 2018	July 1, 2017
Prior Measurement Date	June 30, 2017	June 30, 2016
Measurement Date (MD)	June 30, 2018	June 30, 2017
Membership Data as of 7/1/2018		
Inactive Members or Beneficiaries Currently Receiving Benefits[1]	832	628
Inactive Members Entitled to But Not Yet Receiving Benefits	0	0
Active Members	1,435	1,422
Total Membership	2,267	2,050
Discount Rate		
Municipal Bond Index Rate at Prior MD	3.58%	2.85%
Municipal Bond Index Rate at MD	3.87%	3.58%
Long-term Expected Asset Return at MD	7.00%	7.20%
Year in which Fiduciary Net Position is Projected to be Depleted	2044	2034
Single Equivalent Interest Rate at Prior MD	4.09%	3.36%
Single Equivalent Interest Rate at MD	4.75%	4.09%
Net OPEB Liability as of Measurement Date		
Total OPEB Liability (TOL)	$ 350,387	$ 398,123
Fiduciary Net Position (FNP)	74,554	65,521
Net OPEB Liability (NOL = TOL – FNP)	$ 275,833	$ 332,602
FNP as a percentage of TOL	21.3%	16.5%
OPEB Expense	$ 21,748	$ N/A[2]
Deferred Outflows of Resources	$ 80	$ N/A[2]
Deferred Inflows of Resources	$ (67,611)	$ N/A[2]

[1] Number of inactive members or beneficiaries currently receiving benefits for FY 2017/18 includes spouses of Medicare retirees who are listed as a separate record. In FY 2016/17 data, their records are combined with the retirees.
[2] The County only adopted GASB 74 for fiscal year ending June 30, 2017. These items are not required disclosures under GASB 74.

Section 2: Financial Accounting Information

In response to the GASB 74/75 requirements, this section provides the necessary accounting disclosures for the County's financial reports which are shown in the following exhibits:

- Table 2: Plan Demographics
- Table 3: Assumptions
- Table 4: OPEB Expense
- Table 5: Net OPEB Liability Sensitivity
- Table 6: Deferred Inflows and Outflows
- Table 7: Unamortized Balance of Deferred Inflows and Outflows
- Table 8: Schedule of Future Deferred Inflows and Outflows Amortization

Brief Summary of Membership and Assumptions

The table below displays the number of employees covered by the benefit terms as of the current valuation date.

Table 2 - Demographics

Inactive Employees or Beneficiaries Currently Receiving Benefits	832
Inactive Employees Entitled to but not yet Receiving Benefits	0
Active Employees	1,435
Total Membership	2,267

Significant assumptions and other inputs used to measure the Total OPEB Liability for the current fiscal year are summarized in the table below.

Table 3 - Assumptions

Inflation	3.00%
Salary Increases	Varies from 3.0% to 6.0% based on years of service
Discount Rate[3]	
Prior Measurement Date	4.09%
Measurement Date	4.75%
Long-term Expected Asset Return for Current Measurement Date	7.00%
Mortality Table	Non-disabled retiree: RP-2000 Male and Female Combined Healthy Mortality Tables projected to 2016 for males and 2020 for females using Projection Scale AA, further adjusted to include a margin for future improvement in life expectancy. Disabled retirees: RP-2000 Male and Female Disabled Retiree Mortality Tables projected to 2021 for males and to 2017 for females using Projection Sale AA, and then further adjusted to include a margin for future improvement in life expectancy.
Health Care Cost Trends	5.5% for 2019 decreasing to an ultimate rate of 3.8% by 2075

[3] The discount rate was based on the blended rate between the municipal bond index and expected asset return because the Trust is expected to be depleted in FYE 2044. Refer to the Discussion of Discount Rates section for additional information.

OPEB Expense

GASB states the OPEB expense also should be recognized in the current reporting period for costs incurred by the government related to the administration of OPEB. The measurement period for these costs should be the same as the measurement period applied to changes in the Total OPEB Liability.

The OPEB Expense consists of:

1. Service Costs for the year
2. Interest on the TOL using the bond rate at the beginning of the period
3. Change in the TOL due to benefit changes
4. The current year recognition of changes in the TOL due to Actual versus Expected experience
5. The current year recognition of changes in the TOL due to changes of assumptions or other inputs experience (including the change in discount rate)
6. Recognition of Deferred Inflows and Outflows of Resources from prior years.

The following table provides a breakdown of the OPEB Expense as of June 30, 2018:

Table 4 - OPEB Expense

Service Cost	$	23,030
Interest on Total OPEB Liability and Service Cost		17,089
Current Period Benefit Changes		0
Projected Earnings on OPEB Plan Investments		(4,868)
Current Period Recognition of Deferred Inflows and Outflows of Resources		
Difference Between Expected and Actual Experience in the Total OPEB Liability		(4,489)
Changes of Assumptions or Other Inputs		(9,034)
Net Difference Between Projected and Actual Earnings on OPEB Plan Investments		20
Other		0
OPEB Expense	**$**	**21,748**

Sensitivity Results

Measures of the Net OPEB Liability (NOL) calculated using each of the following rates, should be disclosed:

a. If applicable, a healthcare cost trend rate that is 1-percentage-point higher than the assumed healthcare cost trend rate, and a healthcare cost trend rate that is 1-percentage-point lower than the assumed healthcare cost trend rate.

b. A discount rate that is 1-percentage-point higher than that required by paragraph 36, and a discount rate that is 1-percentage-point lower than that required by paragraph 36.

Changes in the discount and health care cost trend rates affect the measurement of the TOL. Lower discount rates produce a higher TOL whereas lower trend rates produce a lower TOL. The converse is true for higher discount rates and trend rates. Because discount rate and trend rates do not affect the measurement of assets, the percentage change in the NOL can be very significant for a relatively small change in either rates. The table below shows the sensitivity of the NOL to the discount rate and healthcare cost trend rates.

Table 5 - Net OPEB Liability Sensitivity

Healthcare Cost Trend	Discount Rate		
	1% Increase (5.75%)	Current (4.75%)	1% Decrease (3.75%)
1% Decrease		$ 225,100	
Current	$ 228,082	$ 275,833	$ 335,337
1% Increase		$ 339,979	

Deferred Inflows and Outflows

The following table provides a summary of the Deferred Outflows of Resources and Deferred Inflows of Resources as of June 30, 2018:

Table 6 - Deferred Inflows and Outflows

Differences between Expected and Actual Experience					
FYE	Initial Balance	Initial Amortization Period (in years)	Annual Recognition	Recognized in OPEB Expense through June 30, 2018	Unamortized Balance as of June 30, 2018
6/30/2018	$ (26,931)	6	$ (4,489)	$ (4,489)	$ (22,442)

Changes in Assumptions					
FYE	Initial Balance	Initial Amortization Period (in years)	Annual Recognition	Recognized in OPEB Expense through June 30, 2018	Unamortized Balance as of June 30, 2018
6/30/2018	$ (54,203)	6	$ (9,034)	$ (9,034)	$ (45,169)

Net Difference between Projected and Actual Earnings on OPEB Plan Investments					
FYE	Initial Balance	Initial Amortization Period (in years)	Annual Recognition	Recognized in OPEB Expense through June 30, 2018	Unamortized Balance as of June 30, 2018
6/30/2018	$ 100	5	$ 20	$ 20	$ 80

Deferred Inflows and Outflows of resources for (a) differences between expected and actual experience and (b) changes of assumptions or other inputs should be recognized in OPEB expense, beginning in the current reporting period, using a systematic and rational method over a closed period equal to the average of the expected remaining service lives of all employees that are provided with OPEB through the OPEB plan (active employees and inactive employees) determined as of the beginning of the measurement period.

For the current fiscal year, the average expected remaining service life of active and inactive employees is 6.30 years and the Deferred Inflows and Outflows of resources for (a) differences between expected and actual experience and (b) changes of assumptions or other inputs as of June 30, 2018 are amortized over 6 years.

Deferred Inflows and Outflows of resources due to net difference between projected and actual earnings on OPEB Plan investments will be recognized in OPEB expense over a 5-year period.

Table 7 – Unamortized Balance of Deferred Inflows and Outflows

	Deferred Outflows of Resources		Deferred Inflows of Resources	
Differences Between Expected and Actual Experience	$	0	$	(22,442)
Changes of Assumptions or Other Inputs		0		(45,169)
Net Difference Between Projected and Actual Earnings on OPEB Plan Investments	$	80	$	0
Total	**$**	**80**	**$**	**(67,611)**

The following table presents the Deferred Inflows and Outflows by year of recognition for each of the next five years and all years thereafter.

Table 8 - Schedule of Future Deferred Inflows and Outflows Amortization

Measurement Period Ended June 30:		
2019	$	(13,503)
2020	$	(13,503)
2021	$	(13,503)
2022	$	(13,503)
2023	$	(13,519)
Thereafter	$	0

Actuarially Determined Contribution

Actuarially Determined Contribution is the recommended contribution that, if paid on an ongoing basis, is expected to provide sufficient resources to fund (a) future normal costs (the costs for new service) and (b) the amortized unfunded liabilities (the costs attributed to past service). There is no requirement to fund OPEB benefit under GASB 74/75 and it is the Plan Sponsor's responsibilities to determine the OPEB contributions based on their other fiscal needs and/or constraints.

	Fiscal Years Ending	
	2018	2019
Discount Rate for Funding Purposes[4]	7.20%	7.00%
Cost Method	Entry Age Normal Level % of Salary	Entry Age Normal Level % of Salary
Amortization Method	Level % of Salary	Level % of Salary
Salary Scale for Amortization Purposes	3.00%	3.00%
Amortization Period (in years)	30	29
Actuarial Accrued Liability (AAL) – beginning of year	$ 246,813	$ 255,454
Actuarial Value of Assets (AVA) – beginning of year	(65,521)	(74,554)
Unfunded AAL – beginning of year	$ 181,292	$ 180,900
Normal Cost – end of year	$ 11,352	$ 14,311
Amortization of unfunded AAL	10,583	10,505
Annual Required Contribution	$ 21,935	$ 24,816
Expected Benefit Payments[5]	$ 6,721	$ 10,571

[4] Based on the expected rate of return of the OPEB Trust.
[5] Actual benefit payment is shown for FYE 2018.

Schedule of Changes in Total OPEB Liability and Fiduciary Net Position

	Fiscal Years Ending	
	2018	2017
Total OPEB Liability (TOL)		
Service Cost[6]	$ 23,030	$ 27,675
Interest on Total OPEB Liability and Service Cost[6]	17,089	13,927
Changes of benefit terms	0	0
Difference between expected and actual experience	(26,931)	0
Changes of assumptions or other inputs	(54,203)	(54,121)
Benefit payments	(6,721)	(7,702)
Net change in Total OPEB Liability	**$ (47,736)**	**$ (20,221)**
Total OPEB Liability – beginning	**$ 398,123**	**$ 418,344**
Total OPEB Liability – ending	**$ 350,387**	**$ 398,123**
Plan Fiduciary Net Position (FNP)		
Contributions – Employer	$ 11,534	$ 17,988
Contributions – Member	0	809
Net investment income	4,768	4,043
Benefit payments	(6,721)	(7,702)
Administrative expenses	(548)	0
Net change in Plan Fiduciary Net Position	**$ 9,033**	**$ 15,138**
Plan Fiduciary Net Position – beginning	**$ 65,521**	**$ 50,383**
Plan Fiduciary Net Position – ending	**$ 74,554**	**$ 65,521**
Net OPEB Liability (NOL) – ending	**$ 275,833**	**$ 332,602**
FNP as % of TOL	21.3%	16.5%
Covered payroll	$ 72,822	$ 67,370
NOL as % of covered payroll	378.8%	493.7%

This schedule is present to illustrate the requirement to show information for 10 years. However, until a full 10 year trend is compiled, information for those years for which information is available is shown.

[6] Service Cost is shown as of the beginning of the year for FYE 2018 but as of the end of the year for FYE 2017. Consequently, FYE 2018 Interest includes an interest on the Service Cost but not for FYE 2017.

Schedule of Employer Contributions

Actuarially Determined Contributions prior to FYE 2018 is based on the Annual Required Contribution shown in prior GASB 45 actuarial valuation reports.

	Fiscal Years Ending				
	2018	2017	2016	2015	2014
Actuarially Determined Contributions (ADC)	$ 21,935	$ 16,938	$ 16,250	$ 15,351	$ 13,981
Contributions in relation to the ADC	$ 11,534	$ 17,988	$ 13,854	$ 9,713	$ 9,483
Contribution deficiency / (excess)	$ 10,401	$ (1,050)	$ 2,396	$ 5,638	$ 4,498
Covered-employee payroll	$ 72,822	$ 67,370	$ 63,511	$ 59,825	$ 60,251
Contributions in relation to the ADC as % of covered-employee payroll	15.8%	26.7%	21.8%	16.2%	15.7%

	Fiscal Years Ending				
	2013	2012	2011	2010	2009
Actuarially Determined Contributions (ADC)	$ 13,318	$ 14,298	$ 13,581	$ 10,711	$ 10,205
Contributions in relation to the ADC	$ 9,586	$ 8,900	$ 8,324	$ 8,631	$ 7,650
Contribution deficiency / (excess)	$ 3,732	$ 5,398	$ 5,257	$ 2,080	$ 2,555
Covered-employee payroll	$ 60,251	$ 61,180	$ 62,754	$ 63,436	$ 63,973
Contributions in relation to the ADC as % of covered-employee payroll	15.9%	14.5%	13.3%	13.6%	12.0%

Section 3: Projected Benefit Payments

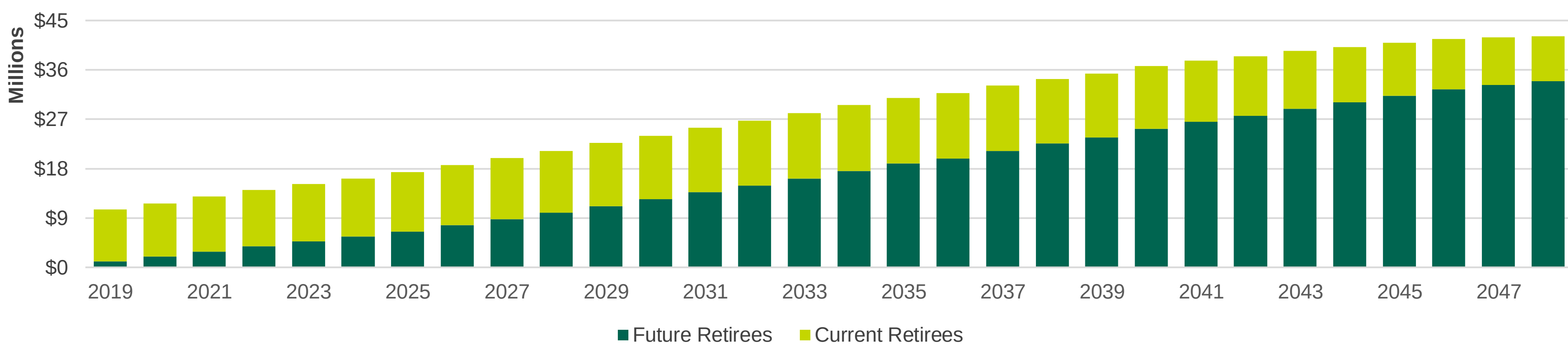
The following table is not a required financial accounting disclosure under GASB 75 but it's been provided for information purposes only. The table below shows the projected benefit payments for the next 30 years for future retirees (currently active employees) and retirees (pay-as-you-go cost). Projected benefit payments shown below include explicit subsidy (if any) and implicit subsidy, and net of any retiree contributions.

FYE	Future Retirees	Current Retirees	Total
2019	$ 1,103	$ 9,468	$ 10,571
2020	$ 1,984	$ 9,678	$ 11,662
2021	$ 2,890	$ 9,991	$ 12,881
2022	$ 3,866	$ 10,257	$ 14,123
2023	$ 4,701	$ 10,461	$ 15,162
2024	$ 5,585	$ 10,607	$ 16,192
2025	$ 6,539	$ 10,796	$ 17,335
2026	$ 7,659	$ 10,960	$ 18,619
2027	$ 8,803	$ 11,096	$ 19,899
2028	$ 9,929	$ 11,266	$ 21,195

FYE	Future Retirees	Current Retirees	Total
2029	$ 11,146	$ 11,500	$ 22,646
2030	$ 12,396	$ 11,584	$ 23,980
2031	$ 13,684	$ 11,726	$ 25,410
2032	$ 14,880	$ 11,833	$ 26,713
2033	$ 16,165	$ 11,958	$ 28,123
2034	$ 17,576	$ 11,986	$ 29,562
2035	$ 18,892	$ 11,943	$ 30,835
2036	$ 19,791	$ 11,937	$ 31,728
2037	$ 21,242	$ 11,874	$ 33,116
2038	$ 22,569	$ 11,789	$ 34,358

FYE	Future Retirees	Current Retirees	Total
2039	$ 23,644	$ 11,644	$ 35,288
2040	$ 25,230	$ 11,463	$ 36,693
2041	$ 26,528	$ 11,154	$ 37,682
2042	$ 27,657	$ 10,832	$ 38,489
2043	$ 28,949	$ 10,483	$ 39,432
2044	$ 30,088	$ 10,089	$ 40,177
2045	$ 31,313	$ 9,656	$ 40,969
2046	$ 32,430	$ 9,181	$ 41,611
2047	$ 33,246	$ 8,670	$ 41,916
2048	$ 33,963	$ 8,134	$ 42,097

Projected Benefit Payments



Section 4: Summary of Plan Provisions

Eligibility

Law Enforcement and Emergency Medical Service Personnel employees hired before July 1, 2013 are eligible for lifetime retiree health benefit and life insurance upon attainment of any one of the following criteria

- Age 55 with any service,
- Age 50 and 15 years of service, or
- Any age with 25 years of service.

All other employees (including Law Enforcement and Emergency Medical Service Personnel employees hired on/after July 1, 2013) are eligible for lifetime retiree health benefit and life insurance upon attainment of any one of the following criteria:

- Age 62 with any service,
- Age 55 and 10 years of service, or
- Any age with 25 years of service.

Spouse Benefits

Employees are allowed to elect spousal coverage at retirement. Coverage continues to surviving spouses of retirees upon the member's death. Surviving spouses contributions are the same as those required of the member prior to his / her death.

Retiree Contributions

Retirees are required to contribute the following monthly amounts as determined by the County effective on July 1, 2018.

Health Plans	Retiree	Retiree & Spouse
Post-65 Medicare Advantage (Aetna)	$ 32.00	$ 64.00
Pre-65 POS (BCBS)	$ 36.00	$ 168.00
Pre-65 PPO (BCBS)	$ 90.00	$ 258.00

Health Plans

The same benefit options are available to active employees and retirees. The County's health plans are self-insured for active and pre-Medicare retirees and fully-insured for Medicare retirees (experience-rated for prescription drug benefit only).

The monthly premium equivalent rates / premium rates are as shown below and they were provided by the County's benefit consultants.

	Eff. 1/1/2018	
Pre-65 Health Plans	**Retiree**	**Retiree & Spouse**
BCBS POS	$ 642.36	$ 1,284.73
BCBS PPO	$ 722.80	$ 1,445.61

Post-65 Medicare Advantage[7]	Eff. 1/1/2018	Eff. 1/1/2019
Medical	$ 232.34	$ 126.00
Prescription Drug	$ 197.44	$ 242.71
Total	$ 429.78	$ 368.71

Life Insurance

Employees are eligible for $10,000 life insurance benefit that is fully paid by the County upon retirement.

[7] Premium rates shown are per person.

Section 5: Actuarial Methods and Assumptions

This section explains the actuarial methodology used for valuation of the postemployment retiree health benefits program for the current County population.

Actuarial Valuation Process

1. The actuarial cost method used in this report is the Entry Age Normal Level Percentage of Pay Cost Method (EAN). For employees who have not yet retired, the accrued benefit is defined to be the pro-rata portion of the benefit projected to be payable upon retirement. For each active employee, the valuation considers the future OPEB benefit and determines the annual cost based on a constant percentage of pay for each individual.
   - a The benefit projected to be payable at retirement is defined to be the per capita claim cost at that date and is subject to increases after that date. The initial per capita claim cost is the value in effect at the Valuation Date. This is developed from either claims or premium information, as appropriate. Subsequent values are determined by applying cost trend factors to the initial value.
   - b For retirees, the accrued benefit is 100% of the benefit currently being received, which is represented by the initial per capita claim cost. This benefit is subject to future increases.
   - c Assumptions for per capita claim costs and cost trend factors are discussed later in this section.
   - d Once each employee's accrued benefit is determined, the TOL is calculated on a seriatim basis.
2. The Service Cost is determined for each employee, by considering the future OPEB benefit and determines the annual cost based on a constant percentage of pay for active member. There is no Service Cost for retirees because, by definition, there is no incremental benefit.
3. The Deferred Inflows and Outflows is that portion of the TOL that is required to be funded in a given year. Under GASB 75 changes in the TOL actuarial experience and assumption change impacts are recognized in the OPEB Expense over a closed period equal to the average of the expected remaining service lives of all employees that are provided with benefits through the OPEB plan (active employees and inactive employees), beginning in the current period.
4. The OPEB expense (OE) is the sum of interest to the Measurement Date on the TOL, the Service Cost, benefit payments, and recognition of increases/decreases in the TOL due to changes in benefit structure, difference between expected and actual experience, and assumption changes. The difference between expected and actual experience and assumption changes are spread over the average remaining service lives of the population for the purposes of the OPEB expense.
5. The item Contribution consists of benefits paid by the County in respect of retirees. This typically consists of amounts spent by the County on retirees' premiums.

Actuarial Assumptions

In accordance with GASB 75, the selection of all actuarial assumptions, in valuations of post-retirement health care plans including the health care cost trend rate, should be guided by Actuarial Standard of Practice No. 6, Measuring Retiree Group Benefit Obligations, as revised from time to time by the Actuarial Standards Board. Accordingly, actuarial assumptions should be based on the actual experience of the covered group, to the extent that creditable experience data are available, but should emphasize expected long-term future trends rather than give undue weight to recent past experience. The reasonableness of each actuarial assumption should be considered independently based on its own merits, its consistency with each other assumption, and the combined impact of all assumptions.

The assumptions used in this valuation are similar to what was used in past OPEB valuations. Demographic and payroll growth assumptions are based on the same assumptions used in the actuarial valuation of the Chatham County Employees' Retirement Plan as of July 1, 2017.

The actuarial assumptions used to value the post-retirement medical liabilities can be categorized into three groups:

1. Economic assumptions
2. Medical assumptions
3. Demographic assumptions

Changes since Prior Valuation

Two assumptions have been updated since the prior valuation, which was as of July 1, 2017:

- The assumed long-term expected rate of return on the OPEB Trust has been reduced from 7.2% to 7.0% based on the updated information provided by the investment consultant.
- Based on the updated projected benefit payments, long-term expected rate of return on the OPEB Trust, and municipal bond index as of June 30, 2018, the discount rate used for accounting disclosure purposes has increased from 4.09% to 4.75%, which caused a decrease in the County's liabilities. The OPEB Trust is now expected to be depleted in FYE 2044 compared to FYE 2034 as indicated in prior year's valuation. Refer to Discussion of Discount Rates for additional information on the discount rate setting.
- Amortization period used in the ADC calculation has been changed from an open 30-year period to a closed 30-year period, which caused an increase in the ADC. This means that for FY 2019, the unfunded AAL is now amortized over 29 years instead of 30.
- Health care trend rates have been updated based on the new Society of Actuaries (SOA) Long-Run Medical Cost Trend Model (Version 2018_c), which caused a reduction in the County's liabilities.

Economic Assumptions

The three economic assumptions used in the valuation are discount rate, health care cost trend rates, and payroll growth. The economic assumptions are used to account for changes in the cost of benefits over time and to discount future benefit payments for the time value of money.

Discussion of Discount Rate

Under GASB 74/75, the discount rate is set as (a) the long-term expected rate of return on OPEB Plan investments to the extent that the OPEB plan assets are projected to be sufficient to make projected benefit payments and expected to be invested using a strategy to achieve that return or (b) the yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale) if the conditions in (a) are not met.

1. The long-term expected rate of return of the OPEB Trust is 6.92%% as of June 30, 2018, which was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns before inflation, net of OPEB Plan investment expense) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future rates of return by the target allocation percentage. The expected inflation is 3.00%. The County's expected future real rates of return by asset class is as shown below.

Asset Class	Target Allocation %	Real Rates of Return[8]
Large Cap Equity	30%	4.60%
Mid Cap Equity	10%	8.40%
Small Cap Equity	10%	8.00%
Fixed Income	50%	1.80%
Total	100%	3.92%

2. The municipal bond index as of the prior and current measurement dates are as shown below:

Bond Index	June 30, 2017	June 30, 2018
Bond Buyer 20-Bond GO Index	3.58%	3.87%

3. The final equivalent single discount rate used for accounting disclosure is 4.09% as of June 30, 2017 and 4.75% as of June 30, 2018 with the expectation that the County will continue to fund the full pay-go cost plus an additional $4,959,000 (based on the average pre-funding contribution in 2013 to 2016 and 2018)[9] in the future. Under this funding scenario, the OPEB Trust is expected to be depleted by FYE 2044.

   The discount rate used to calculate the Actuarially Determined Contribution for recommended funding contribution is 7.00%.

[8] The expected real rates of return and inflation rate are based on the information provided by the investment advisor (Dahab).
[9] County's pre-funding contribution in 2017 seemed to be an outlier as it is much higher than prior years and has been excluded from the averaging.

Health Care Cost Trend Rates

The medical trend assumptions used in the valuation were developed using the Society of Actuaries (SOA) Long-Run Medical Cost Trend Model (Version 2018_c). The SOA model was first released in December 2007 and was most recently updated in September 2017.

The widely used SOA Long-Run Medical Cost Trend Model and its baseline projection are based on an econometric analysis of historical U.S. medical expenditures and the judgments of experts in the field. The long-run baseline projection and input variables were developed under the guidance of the SOA Project Oversight Group.

The following assumptions were used as input variables into this model:

Rate of Inflation	2.2%
Rate of Growth in Real Income/ GDP per capita	1.6%
Income Multiplier for Health Spending	1.3%
Health Share of GDP Resistance Point	25.0%
Year for Limiting Cost Growth to GDP Growth	2075

Table 9 shows the medical cost trends used in the valuation and are an output of the SOA Long-Run Medical Cost Trend Model.

Table 9 - Health Care Cost Trend Rate Assumption

Year	Annual Trend
2018	5.50%
2019	5.40%
2020	5.30%
2025	5.19%
2030	5.19%
2035	5.19%
2040	5.19%
2050	4.83%
2060	4.63%
2070	4.18%
2075 & Ultimate	3.84%

Payroll Growth

Payroll growth assumption used in this valuation is based on the Chatham County Employees' Retirement Plan last updated in 2011 and used in the July 1, 2017 actuarial valuation. Annual rates at select service are as shown below.

Service	Rates
0	6.0%
1	5.0%
2 – 5	4.5%
6 – 15	4.0%
16 – 34	3.5%
35+	3.0%

Medical Assumptions

The valuation projects the healthcare costs for employees who remain insured by the County with coverage after retirement. Under GASB 75 and ASOP 6, the initial per capita claim cost should be based on the recent claims experience of the County and must be age-banded, unless the County has premium equivalent rates or fully-insured rates that are determined using retirees only claims experience.

Depending on the credibility of the experience data provided by the County, industry-wide information may be incorporated into the analysis. The cost of covering retirees is on average significantly higher than the cost of covering active employees. By charging retirees a blended premium that is less than their true cost of coverage would dictate, the County is providing an additional subsidy for these retirees (implicit subsidy). Under the rules set out in GASB 75, both the direct contribution and the implicit subsidy must be considered in measuring the County's postemployment medical benefit obligation.

Following actuarial standards, specifically ASOP 6, leads us to develop age-specific health care cost estimates which are based on active employees and pre-Medicare retirees claims and enrollment experience for the 24-month period ending December 31, 2017 for under 65 costs. Over 65 costs are based on Medicare retirees' prescription drug claims and enrollment experience for the 24-month period ending December 31, 2017 plus the average 2018 and 2019 medial premium rates for the Medicare Advantage plan. The table below shows annual per capita costs at representative ages for 2018/19 period. These costs are assumed to increase with health care trend rates in the future.

Table 10 - Initial Per Capita Claim Costs

Age	Medical/Rx
50	$ 9,301
55	$ 10,941
60	$ 13,057
64	$ 15,392

Age	Medical/Rx
65	$ 6,989
70	$ 7,760
80	$ 9,157
90	$ 9,701

Demographic Assumptions

The demographic assumptions used for valuing the liabilities of the retiree medical plan are those used in the Chatham County Employees' Retirement Plan actuarial valuation as of July 1, 2017.

The demographic assumptions include the rates of mortality, withdrawal, retirement, and disability. Ancillary demographic assumptions include the participation rates, spousal coverage election rate, and plan participation. The complete set of demographic assumptions is included in Appendix A.

Section 6: Participant Data

The following table shows the current participants as of July 1, 2018. The participant data is provided by the County as of June 30, 2018. The data has been reviewed for reasonableness and no material modification was made to the information provided.

Table 11 - Current Retired and Active Population

Retirees			
Age Group	Females	Males	Total
<55	16	27	43
55 – 59	46	41	87
60 – 64	75	69	144
65 – 69	109	110	219
70 – 74	90	86	176
75 – 79	42	44	86
80 – 84	30	22	52
85 – 89	9	8	17
90+	7	1	8
Total	**424**	**408**	**832**

Active Employees			
Age Group	Females	Males	Total
<29	73	86	159
30 – 34	79	62	141
35 – 39	83	81	164
40 – 44	95	73	168
45 – 49	120	93	213
50 – 54	114	97	211
55 – 59	106	97	203
60 – 64	65	61	126
65+	18	32	50
Total	**753**	**682**	**1,435**

Average Age	68.5

Average Age	46.1
Average Service	8.3

Appendix A: Detailed Actuarial Assumptions

General Assumptions

Measurement Date	June 30, 2018
Valuation Date	July 1, 2018; liabilities as of June 30, 2018 are based on July 1, 2018 valuation with no adjustment. Liabilities as of June 30, 2017 are based on July 1, 2017 valuation with no adjustment.
Discount Rate	For accounting disclosure purposes: 4.75% as of June 30, 2018 and 4.09% as of June 30, 2017. For funding purposes in calculating the ADC: 7.00% as of June 30, 2018 and 7.20% as of June 30, 2017 Refer to the Discussion of Discount Rate section for complete information on the discount rate setting.

Mortality

For non-disabled retirees: RP-2000 Male and Female Combined Healthy Mortality Table projected to 2016 for males and to 2020 for females using Projection Scale AA, further adjusted to include a margin for future improvement in life expectancy.

For disabled retirees: RP-2000 Male and Female Disabled Retiree Mortality Tables projected to 2021 for males and to 2017 for females using Projection Scale AA, further adjusted to include a margin for future improvement in life expectancy.

Disability

Annual disability rates at sample ages are as shown below. The rates are based on the same assumption used in the Chatham County Employees' Retirement Plan actuarial valuation as of July 1, 2017, which is 20% of Hunter's disability rates.

Age	Male	Female
20	0.0206%	0.0412%
30	0.0224%	0.0449%
40	0.0333%	0.0666%
50	0.0678%	0.1357%
60	0.2161%	0.4322%
70+	1.0218%	2.0435%

Turnover

Annual turnover rates by group at sample ages are as shown below. The rates are based on the same assumption used in the Chatham County Employees' Retirement Plan actuarial valuation as of July 1, 2017.

Age	General and Library		Law Enforcement	
	<5 YOS	5+ YOS	<5 YOS	5+ YOS
20	15.6%	4.2%	18.6%	6.6%
25	14.7%	4.0%	17.8%	5.9%
30	13.9%	3.6%	17.1%	5.2%
35	13.0%	3.4%	16.3%	4.5%
40	12.1%	3.1%	15.6%	3.8%
45	11.2%	2.8%	14.8%	3.1%
50	10.3%	2.5%	14.1%	2.4%
55	9.5%	2.2%	0.0%	0.0%
60+	0.0%	0.0%	0.0%	0.0%

Retirement

Annual retirement rates by group are as shown below and are based on the same assumptions used in the Chatham County Employees' Retirement Plan actuarial valuation as of July 1, 2017.

Age	General and Library	Law Enforcement
50 – 53	N/A	5%
54	N/A	25%
55	10%	35%
56 – 58	5%	10%
59 – 60	5%	15%
61	25%	15%
62 – 63	20%	50%
64	40%	100%
65 – 66	30%	100%
67 – 70	50%	100%
71+	100%	100%

Ancillary Demographic Assumptions

Participation Rates

Given the lack of alternative sources of subsidized health coverage for most retirees, we have assumed that 100% of eligible participants will elect coverage at retirement. As we collect additional data over time we will be able to refine this assumption.

Spousal Coverage Election Rates

For current retirees, actual coverage status and spouse age is used.

For future retirees, 60% of retirees are assumed to elect family coverage. This assumption was developed from the analysis of the coverage election rates of the retired population over the past. Husbands are assumed to be three years older than wives.

Plan Participation

50% of employees are assumed to elect PPO plan at retirement with the remaining 50% electing POS plan prior to Medicare eligibility.

Appendix B: Glossary

Actuarial Accrued Liability

Same definition as Total OPEB Liability (TOL).

Actuarial Cost Method

A procedure to allocate the Actuarial Present Value of Future Benefits into time periods, usually in the form of Normal Cost and Actuarial Accrued Liability.

Actuarial Present Value of Future Benefits

Total projected benefits estimated to be payable to Plan Members as a result of their service through the valuation date and their expected future service. The actuarial present value of future benefits as of the valuation date is:

a. The present value of the cost to finance benefits payable in the future,
b. Discounted using the Investment Return to reflect the expected effects of the time value of money and the probabilities of payment (which is contingent on occurrence of certain events such as death, disability, retirement, etc).

Expressed another way, it is the amount that would have to be invested on the valuation date so that the amount invested plus investment earnings will provide sufficient asset to pay total projected benefits when due.

Covered Group

Plan Members included in actuarial valuation.

Deferred Inflows

Gains in the Total OPEB Liability and in the OPEB Plan's Fiduciary Net Position (for funded plan only) due to be recognized in the future.

Deferred Outflows

Loses in the Total OPEB Liability and in the OPEB Plan's Fiduciary Net Position (for funded plan only) due to be recognized in the future.

Defined Benefit OPEB Plan

An OPEB plan having terms that specify the amount of benefits to be provided at or after separation from employment. The benefits may be specified in dollars (for example, a flat dollar payment or an amount based on one or more factors such as age, years of service, and compensation), or as a type or level of coverage (for example, prescription drugs or a percentage of healthcare premiums).

Fiduciary Net Plan Position

OPEB plan assets in a secure Trust that meet the following criteria:

a. Contributions from employers to the OPEB plan and earnings on those contributions are irrevocable.
b. OPEB plan assets are dedicated to providing OPEB to plan members in accordance with the benefit terms.
c. OPEB plan assets are legally protected from the creditor of employers, OPEB plan administrator, and the plan members.

Funded Ratio

The actuarial value of assets expressed as a percentage of the Actuarial Accrued Liability.

Healthcare Cost Trend Rate

The rate of change in per capita health claim costs over time as a result of factors such as medical inflation, utilization of healthcare services, plan design, and technological developments.

Investment Return Assumption (Discount Rate)

The rate used to adjust a series of future payments to reflect the time value of money.

Normal Cost

That portion of the Actuarial Present Value of plan benefits and expenses which is allocated to a 12-month period following the valuation date by the Actuarial Cost Method.

Net OPEB Liability (NOL)

The Total OPEB Liability less the Fiduciary Net Plan Position set aside to pre-fund the benefit.

Other Postemployment Benefits (OPEB)

Postemployment benefits (such as death benefits, life insurance, disability, and long-term care) as well as postemployment healthcare benefits that are paid in the period after employment and are provided separately from the pension plan. OPEB does not include benefits defined as termination benefits or termination payments for sick leave.

Pay-as-you-go (PAYGO)

A method of financing a pension plan under which the contributions to the plan are generally made at about the same time and in about the same amount as benefit payments and expenses becoming due.

Payroll Growth Rate

An actuarial assumption with respect to future increases in total coverage payroll attributable to inflation; used in the Actuarial Cost Method in the determination of the Total OPEB Liability.

Plan Members

The individuals covered by the terms of an OPEB plan. The plan membership generally includes employees in active service, terminated employees who have accumulated benefits but are not yet receiving them, and retired employees and beneficiaries currently receiving benefits.

Postemployment Healthcare Benefits

Medical, dental, vision, and other health-related benefits provided to terminated or retired employees and their dependents and beneficiaries.

Select and Ultimate Rates

Actuarial assumptions that contemplate different rates for successive years. Instead of a single assumed rate with respect to, for example, the investment return assumption, the actuary may apply different rates for the early years of a projection and a single rate for all subsequent years. For example, if an actuary applies an assumed investment return of 8% for year 20X1, 7.5% for 20X2, and 7% for 20X3 and thereafter, then 8% and 7.5% are select rates, and 7% is the ultimate rate.

Total OPEB Liability (TOL)

The portion of the Actuarial Present Value of projected benefit payments that is attributed to employees' past service as of the valuation date as determined by Actuarial Cost Method.

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