



WSSC Water

Other Post-Employment Benefits

Actuarial Valuation as of July 1, 2019

January 2020

Submitted by

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This report presents the July 1, 2019 actuarial valuation results for the WSSC Water Other Post-Employment Benefits (OPEB) Plan. The purposes of this report are to:

- (1) Determine WSSC Water's actuarial OPEB obligation;
- (2) Establish the basis for GASB 74/75 reporting;
- (3) Provide information that may be helpful in future planning for OPEB.

A summary of the major results is shown in the Executive Summary, while the Principal Valuation Results section provides more detail. Financial Reporting information under GASB 74 and 75 is now provided in a separate report. This report establishes the basis for Actuarially Determined Contribution.

The actuarial costs and liabilities shown in this report are based upon the data and plan provisions provided by WSSC Water, as summarized in the Demographic Information and Plan Provisions Sections, and the funding method and actuarial assumptions outlined in the Methods and Assumptions Section of this report.

To the best of our knowledge, this report is complete and accurate and conforms to generally accepted actuarial principles and methodology.

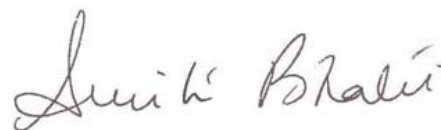
This report is intended for the sole use of the addressee. It is intended only to supply sufficient information for WSSC Water to comply with the stated purposes, and may not be appropriate for other business purposes. Reliance on information contained in the report by anyone for other than the intended purposes puts the relying entity at risk of being misled because of confusion or failure to understand applicable assumptions, methodologies, or limitations of the Report's conclusions.

The undersigned are members of the American Academy of Actuaries, and meet the Qualification Standards of the Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,



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Executive Summary

WSSC Water provides healthcare, life insurance and prescription drug benefits to retirees and their dependents. The cost of the insurance is paid partially by the retiree and partially by WSSC Water. Employees who retire or qualify for disability or retirement directly from WSSC Water, and meet the eligibility criteria, may participate.

The following table summarizes the valuation results. These figures have been calculated based on assumptions as to current claim cost, projected increases in health care costs, participation, demographics, and investment earnings.

This summary identifies the actuarial value of benefits as of July 1, 2019 and actuarial cost, reflecting full pre-funding, utilizing a discount rate of 7.00% and amortizing the Unfunded Actuarial Accrued Liability as a level dollar amount (28 years remaining).

	7/1/2019	7/1/2017
Present Value of Projected Benefits (PVPB)	\$281,238,198	\$262,407,087
Actuarial Accrued Liability (AAL)	250,628,483	236,603,033
Plan Asset Value	135,177,866	100,123,140
Unfunded Actuarial Accrued Liability	115,450,617	136,479,893
Funding Ratio	53.9%	42.3%
Actuarially Determined Contribution (ADC)	\$13,051,507	\$14,004,405
Estimated Employer Benefit Payments	14,332,634	\$14,248,329

The funding has improved since the prior valuation. This is due to favorable experience as well as an increase in the Plan asset value. The actuarial cost (ADC) has also decreased due to a lower unfunded actuarial accrued liability.

Principal Valuation Results

This section presents detailed valuation results for WSSC Water's OPEB program.

- The Present Value of Projected Benefits (PVPB) is the total present value of all expected future benefits, based on a set of actuarial assumptions. Essentially, the PVPB is the value (on the valuation date) of the benefits promised to current plan participants. The Plan's PVPB (at July 1, 2019) is \$281.2 million. About 39% (\$108.9 million) of this liability is for current active employees (future retirees), with the remainder attributable to current retirees enrolled in WSSC Water's healthcare plan.
- The Actuarial Accrued Liability (AAL) is the liability or obligation for benefits earned through the valuation date, based on a set of actuarial methods and assumptions. The Plan's AAL (at July 1, 2019) is \$250.6 million. The AAL represents approximately 89% of the PVPB.
- The Normal Cost is the value of benefits expected to be earned during the year (active employees only), again based on certain actuarial methods and assumptions. The Normal Cost for the plan is \$3.3 million.

The AAL and Normal Cost have been developed using the Entry Age actuarial cost method.

The following table shows results by active and retired employee groups.

	July 1, 2019	July 1, 2017
Present Value of Projected Benefits		
Active Employees	\$108,735,019	\$92,668,890
<u>Receiving Benefits</u>	<u>172,503,179</u>	<u>169,738,197</u>
Total	\$281,238,198	\$262,407,087
Actuarial Accrued Liability (AAL)		
Active Employees	\$78,125,304	\$66,864,836
<u>Receiving Benefits</u>	<u>172,503,179</u>	<u>169,738,197</u>
Total AAL	\$250,628,483	\$236,603,033
Plan Assets	\$135,177,866	\$100,123,140
Unfunded AAL	115,450,617	136,479,893
Normal Cost	\$3,307,764	\$2,809,328

Actuarially Determined Contribution and Funding

Actuarially Determined Contribution (ADC)

The Actuarially Determined Contribution (ADC) includes both the value of benefits earned during the year (Normal Cost) and an amortization of the Unfunded Accrued Liability (UAAL). Accordingly, the following table shows WSSC Water's ADC based on a 28-year amortization of the unfunded AAL.

	July 1, 2019	July 1, 2017
Normal Cost	\$3,307,764	\$2,809,328
Unfunded AAL Amortization	8,889,906	10,278,901
Interest to End of Year	853,837	916,176
Actuarially Determined Contribution (ADC)	\$13,051,507	\$14,004,405

Benefits paid directly (i.e., not from the Trust) as well as Trust contributions can be used to satisfy payment of the ADC.

History of Funding Progress

Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a / b)
7/1/2007	\$0	\$232,273,947	\$232,273,947	0.0%
7/1/2008	1,861,000	237,714,544	235,853,544	0.8%
7/1/2009	5,070,986	208,728,929	203,657,943	2.4%
7/1/2010	11,308,207	213,159,274	201,851,067	5.3%
7/1/2011	21,295,568	205,940,969	184,645,401	10.3%
7/1/2013	41,300,000	217,195,977	175,895,977	19.0%
7/1/2015	69,136,817	218,174,615	149,037,798	31.7%
7/1/2017	100,123,139	236,603,033	136,479,893	42.3%
7/1/2019	135,177,866	250,628,483	115,450,617	53.9%

Payout Projection

Annual Payments expected based on the assumptions detailed in the Methods and Assumptions section. These amounts include total benefits/claims net of retiree contributions.

Year Ending	Expected Payout
6/30/2020	\$14,332,634
6/30/2021	15,084,182
6/30/2022	15,818,038
6/30/2023	16,281,300
6/30/2024	16,798,160
6/30/2025	17,406,099
6/30/2026	17,793,145
6/30/2027	18,286,385
6/30/2028	18,686,272
6/30/2029	19,105,560

Demographic Information

The following Table summarizes active and retiree demographic information.

	Number of Participants	
	7/1/2019	7/1/2017
Actives*	1,675	1,569
Retired (Beneficiaries and Disabled participants)	1,543	1,474
Spouses	480	628
Total Participants	3,698	3,671

	7/1/2019	7/1/2017
Average Age (Medical/Drug) (with insurance coverage)		
• Active Participants	47.7	47.7
• Retired (Beneficiaries and Disabled Participants)	70.8	70.1
Average Service (for actives)	12.5	12.9

* Includes those with Health and/or Life Insurance coverage.

Plan Provisions

Medical/Drug	United Healthcare ChoicePlus POS, United Healthcare Select EPO, Kaiser Permanente HMO for retirees/spouses under 65, United Healthcare Medicare Supplement or Kaiser Permanente HMO Medicare Plus for retirees/spouses 65 and over.
Eligibility	<p>WSSC Water employees are eligible to continue with their group insurance coverage if retiring employee had coverage in effect for 2 years prior to retirement. Retirement is effective on the last day of the month.</p> <p>The surviving spouse and dependent children who were covered under WSSC Water health insurance may continue coverage after the death of the employee/Retiree, if a joint and contingent survivor option is chosen at pension commencement.</p> <p>Retirement eligibility for the closed group: Normal retirement is the earlier of age 60 with one year of service or 30 years of service. Early retirement is the rule of 65 attaining at least age 45 with 15 years of service.</p> <p>Retirement eligibility for the open group hired prior to 3/1/1994: Normal retirement is the earlier of age 62 with 3 years of service or the rule of 85 with at least 30 years of service. Early retirement is at least age 50 with 15 years of service.</p> <p>Retirement eligibility for the open group hired on or after 3/1/1994: Normal retirement is the earlier of age 65 with 5 years of service or the rule of 85 with at least 30 years of service. Early retirement is at least age 50 with 15 years of service.</p>
Retiree Payment	WSSC Water pays a portion of the full premium for retiree coverage for eligible participants and qualified dependents.
Life Insurance Benefit	When an employee retires, the basic life insurance amount (equal to the annual base pay before retirement) will be reduced on the first day of retirement by 15%. On each of the next four anniversaries of retirement, the insurance amount will be further reduced by that same dollar amount. The insurance amount will never be less than 25% of annual base pay immediately prior to retirement, nor less than \$5,000.

2019 Premiums (Monthly)

	<i>WSSC Water</i>	<i>Retiree</i>
United Healthcare Choice Plus POS		
Retiree	\$838.50	\$279.50
2-Person	1,656.00	552.00
United Healthcare Medicare Supplement		
Retiree	519.82	138.18
2-Person	1,042.80	277.20
United Healthcare Select EPO		
Retiree	606.72	161.28
2-Person	1,213.44	322.56
Kaiser Permanente HMO		
Retiree	434.50	115.50
2-Person	869.00	231.00
Kaiser Permanente Medicare Plus		
Retiree	196.71	52.29
2-Person	392.63	104.37

Changes in Plan Provisions

For the 2019 Plan Year, WSSC Water contributes 75% of the monthly premium towards the United Healthcare Choice Plus POS Plan and 79% of the monthly premium for all other plans.

For the 2018 Plan Year, WSSC Water contributed 76% of the monthly premium towards the United Healthcare Choice Plus POS Plan and 79% of the monthly premium for all other plans.

Actuarial Methods and Assumptions

All of the assumptions and methods used for this study are in compliance with relevant Actuarial Standards of Practice, as well as with GASB Statements 74 and 75.

Actuarial Cost Method Entry Age, individual, level percentage of pay

Amortization Period Closed, 28 years remaining

Amortization Method Level Dollar

Investment Return/ Discount rate 7.00%, net of expenses and including inflation

Healthcare Trend

Year	UHC POS (Pre-65)	UHC EPO/HMO (Pre-65)	Medicare Plus/ Supplement
2019	6.50%	7.00%	4.50%
2020	6.25%	6.75%	4.25%
2021	6.00%	6.50%	4.00%
2022	5.75%	6.25%	4.00%
2023	5.50%	6.00%	4.00%
2024	5.25%	5.75%	4.00%
2025	5.00%	5.50%	4.00%
2026	4.75%	5.25%	4.00%
2027	4.50%	5.00%	4.00%
2028	4.25%	4.75%	4.00%
2029 +	4.25%	4.50%	4.00%

Expected Annual Per Capita Claims (representative amounts)

Age	UHC POS (Retiree)	UHC POS (Dependent)	UHC EPO (Retiree)	UHC EPO (Dependent)	Kaiser HMO (Retiree)	Kaiser HMO (Dependent)
45	\$10,447	\$10,185	\$7,488	\$7,488	\$6,215	\$6,215
50	12,099	11,796	8,672	8,672	7,198	7,198
55	14,438	14,076	10,349	10,349	8,589	8,589
60	17,973	17,523	12,883	12,883	10,692	10,692
65	6,667	6,707	6,667	6,707	2,590	2,580
70	7,360	7,404	7,360	7,404	2,859	2,848
75	8,026	8,075	8,026	8,075	3,118	3,106
80	8,646	8,699	8,646	8,699	3,359	3,346
85	9,087	9,143	9,087	9,143	3,530	3,516

The per capita costs above were developed based on standard aging rates and plan demographic and premium information. The trend rates are based on a consolidated version of the Society of Actuaries' Getzen Model of Long-Run Medical Cost Trends.

Demographic assumptions are based on a comprehensive experience study and assumption review conducted in 2016.

Mortality

The RP-2000 Healthy Annuitant mortality tables (males and females), with Blue Collar adjustments and one year set forward, are assumed to represent non-disability retirement pensioner mortality (for pre-retirement, 50% is applied).

For disability retirement pension mortality, the RP2000 Disabled mortality tables are used.

To account for future improvements in longevity, 25 years of projection Scale BB is applied to each of these tables.

Retirement

Age	Rate
50-59	7.5%
60	9.4%
61	11.7%
62	14.6%
63	18.3%
64	22.9%
65-69	28.6%
70+	100.0%

Disability (Sample Rates)

Age	Males	Females
25	0.021%	0.035%
35	0.035%	0.055%
45	0.069%	0.104%
55	0.248%	0.338%
65	0.00%	0.00%
70+	0.00%	0.00%

Age Difference/ Family Assumptions

Males are assumed to be 3 years older than females; For current retirees and actives, actual family status, plan elections and ages were used, 70% of both males and females are assumed to be married; 85% of actives are assumed to continue in the medical plan after retirement.

Withdrawal/Termination

Years of Service	Males	Females	Years of Service	Males	Females
0	11.0%	16.5%	11	1.8%	2.8%
1	9.4%	14.0%	12	1.6%	2.3%
2	7.9%	11.9%	13	1.3%	2.0%
3	6.8%	10.1%	14	1.1%	1.7%
4	5.7%	8.6%	15	1.0%	1.4%
5	4.9%	7.3%	16	0.8%	1.2%
6	4.1%	6.2%	17	0.7%	1.0%
7	3.5%	5.3%	18	0.6%	0.9%
8	3.0%	4.5%	19	0.5%	0.8%
9	2.5%	3.8%	20+	0.0%	0.0%
10	2.2%	3.2%			

Method and Assumption Changes

The claims assumptions were updated to reflect actual experience and available information regarding healthcare costs.

Glossary of Actuarial Terms

Actuarial Accrued Liability

A plan's actuarial accrued liability is the level of assets estimated by the system actuary to be needed as of the valuation date to

Finance all previously earned benefits for actively employed members of the plan (and their beneficiaries, if applicable) for when they eventually retire, die or terminate with deferred vested benefits, and

Finance all currently payable benefits of current pensioners and their beneficiaries (if applicable).

The Actuarial Accrued Liability is not a debt; instead, it is an asset target set by the actuarial cost method to produce an orderly accumulation of assets to pay for the plan's obligations.

Annually Determined Contribution (ADC)

The annual cost of the plan. The ADC is the Sum of the Normal cost and the amortization of the unfunded actuarial accrued liability.

Normal Cost

The Normal Cost is calculated as the annual amount necessary to fund each member's benefits from that member's Plan entry date to the end of his or her projected working life.

Other Postemployment Benefits (OPEB)

Postemployment benefits other than pensions, OPEB, generally takes the form of health insurance and dental, vision, prescription drugs or other healthcare benefits.

Unfunded Actuarial Accrued Liability

When the actuarial value of assets is below the Actuarial Accrued Liability, there is an Unfunded Actuarial Accrued Liability which must be paid off or amortized on a schedule. When the actuarial value of assets is in excess of the Actuarial Accrued Liability, this can lead to a reduction in future contributions on an amortization schedule.

15 Year Projection of Cash Flows

The projections shown below are based on only one scenario, in which there are no gains or losses from investments or otherwise. The actual figures will be based on actual experience during this time frame and will differ from what is shown in the table.

WSSC Water OPEB Fund

Year Beginning <u>July 1</u>	Plan Assets Beginning of Year	Trust <u>Contribution~</u>	Expected Benefit Payments~	Estimated Investment Income*	Net Increase in Fund	Actuarial Accrued Liability	Funding Ratio
2019	\$135,177,866	\$5,400,000	\$14,626,525	\$9,648,254	\$15,048,254	\$250,628,483	54%
2020	150,226,120	5,400,000	15,393,483	10,701,632	16,101,632	256,581,990	59%
2021	166,327,752	5,400,000	16,142,387	11,828,746	17,228,746	262,321,653	63%
2022	183,556,498	5,400,000	16,615,148	13,034,758	18,434,758	267,858,664	69%
2023	201,991,256	5,400,000	17,142,606	14,325,191	19,725,191	273,472,310	74%
2024	221,716,448	5,400,000	17,763,011	15,705,955	21,105,955	279,119,566	79%
2025	242,822,402	8,142,442	18,157,993	16,652,953	6,637,401	284,715,204	85%
2026	249,459,804	8,348,509	18,661,347	17,107,342	6,794,504	290,497,751	86%
2027	256,254,308	8,564,052	19,069,434	17,576,332	7,070,950	296,377,560	86%
2028	263,325,258	8,789,508	19,497,319	18,064,333	7,356,521	302,469,787	87%
2029	270,681,779	9,025,331	19,890,751	18,573,867	7,708,447	308,779,074	88%
2030	278,390,226	9,271,998	20,453,743	19,102,574	7,920,829	315,366,980	88%
2031	286,311,055	9,530,009	20,955,234	19,648,654	8,223,429	322,088,831	89%
2032	294,534,484	9,799,885	21,477,037	20,215,626	8,538,474	329,029,353	90%
2033	303,072,958	10,082,171	22,133,115	20,800,458	8,749,513	336,195,117	90%

*Assuming 7.00% returns each year.

~Actuarially Determined Contribution assumed to be contributed and benefits assumed to be paid from trust after 80% funding is reached. Therefore, the employer contribution prior to reaching 80% funding is equal to the Trust contribution plus the benefit payments.