Hampton Roads Sanitation District Post-Employment Medical Benefits

HRSD
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Actuarial Valuation to Determine Actuarially Determined Contribution

For FY2020

Bolton

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September 7, 2019

Lee Acors
Chief of Accounting
Hampton Roads Sanitation District
1434 Air Rail Avenue
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Dear Lee:

The following sets forth the Actuarially Determined Contribution (ADC) for Hampton Roads Sanitation District (HRSD) for the Fiscal Year Ending June 30, 2020. The GASB 75 employer accounting GASB74 Plan Accounting disclosures are in a separate report.

The ADC has decreased from $2,992,873 in FYE 2019 to $2,729,570 for FYE 2020. The unfunded liability has decreased from $7,852,950 as of June 30, 2018 to $3,245,820 as of June 30, 2019.

Section 1 is meant to give a high level of summary of the OPEB valuation. Sections 2 – 4 includes information used to determine the ADC. Section 5 summarizes the valuation data, Section 6 the plan provisions, and Section 7 the actuarial methods and assumptions.

This report has been prepared for HRSD for the purposes of determining the FYE 2020 ADC. It is neither intended nor necessarily suitable for other purposes. Bolton is not responsible for the consequences of any other use or the reliance by another party.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: retiree group benefits program experience differing from that anticipated by the assumptions; changes in assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in retiree group benefits program provisions or applicable law. Retiree group benefits models necessarily rely on the use of approximations and estimates, and are sensitive to changes in these approximations and estimates. Small variations in these approximations and estimates may lead to significant changes in actuarial measurements. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

The report is based on July 1, 2019 census data. The census data and medical premiums for fiscal year 2019 were submitted by HRSD. In preparing the valuation we relied on demographic and claims data provided by HRSD. We reviewed the data for reasonableness, but did not audit the data. The actuarial methods and assumptions used in this report comply with ASOP 6 and the actuarial standards of practice promulgated by the American Academy of Actuaries.

In general, post-employment medical valuations are based on assumptions for medical increases. If medical costs increase at a rate greater than our assumption there could be a dramatic increase in the cost. The healthcare cost trend rate selected for this valuation is consistent with prevalent practices. Standard actuarial practice is to assume an “ultimate trend” which is consistent with the best estimate of GNP growth. However, the number of years until the ultimate trend is attained and the rate of decrease are not known. There is a significant probability that between now and the next actuarial valuation we will not observe the anticipated amelioration of medical trend. If this is the case, typical practice is to reset the initial trend and to defer the year that the ultimate trend rate is attained. If this occurs annual actuarial losses of 5% to 15% of liabilities due to the revised trend rate can be expected.

Bolton Partners is completely independent of HRSD, its programs, activities, or any of its officers or key personnel. We and anyone closely associated with us does not have any relationship which would impair our independence on this assignment.

Kevin Binder 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 contained in this report.

Respectfully submitted,

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Section I Executive Summary

Background

Bolton Partners, Inc. has prepared the following report that sets forth the FYE 2020 Actuarial Determined Contribution (ADC) for Hampton Roads Sanitation District. In June 2015, the Government Accounting Standards Board (GASB) released Statements 74 and 75, which went into effect in FYE 2017 and FYE 2018.

The new accounting standard has separated budgeting and accounting. HRSD has elected to set the Actuarially Determined Contribution (ADC) using the same methods as used to determine the ARC under GASB45. This report provides the ADC results for FY2019. The GASB 74 and 75 accounting standard were disclosed separately.

The last valuation report, which developed the FYE 2018 ADC, was completed September 6, 2018 by Bolton.

Contribution Policy

The HRSD's contribution policy is to contribute the ADC to a trust established to pre-fund these benefits. Contributions are made monthly based on the estimated expense for the year and readjusted with each annual valuation.

Expected Rate of Return Assumption

The expected rate of return assumption of 6 percent was selected by the plan sponsor.

Asset Smoothing

Asset information as of July 1, 2019 and the asset reconciliation for the fiscal year ending 2019 was provided by HRSD.

The ADC is based on the actuarial value of assets (AVA). The market value of assets (MVA) is smoothed over a five-year period to determine the AVA. Asset gains and losses are determined by comparing the expected value of assets to the market value of assets. As of 6/30/2019 the actuarial value of assets is $51,008,180. The market value of assets is $52,025,285 as provided by HRSD.

Section I Executive Summary

Comparison with Previous Valuation

The prior valuation was based on July 1, 2018 data and completed September 6, 2019. The ADC has decreased from $2,992,873 for FYE 2018 to $2,729,570 for FYE 2019. The ADC decrease is mainly due to favorable claims experience. Updated long term medical trend increased the ADC. The overall effect was a decrease in the ADC.

The following table compares the data and reconciles the expense.

Comparison of Current and Previous Valuations		
Valuation Date	**July 1, 2018**	**July 1, 2019**
Fiscal Year Ending	**2019**	**2020**
Demographic Data		
Employees		
Currently with medical coverage	719	734
Not currently with medical coverage	67	70
Retirees Less Than Age 65[1]	82	78
Retirees Age 65 or Greater [1]	81	92
Reconciliation of Expense (ADC)		
FYE 2019 ADC		$2,992,873
Expected Increase due to Passage of Time		$90,946
Increase/(Decrease) due to Investment Experience		($7,945)
Increase/(Decrease) due to Demographic Experience		($8,005)
Increase/(Decrease) due to Claims Experience		($690,112)
Increase/(Decrease) due to Assumption Changes		$351,813
FYE 2020 ADC		$2,729,570

The following table reconciles the unfunded accrued liability.

Reconciliation of Unfunded Accrued Liability (UAL)	
7/1/2018 Unfunded Accrued Liability (UAL)	$7,852,950
Expected Increase due to Passage of Time	($726,696)
Increase/(Decrease) due to Investment Experience	($89,820)
Increase/(Decrease) due to Demographic Experience	($576,614)
Increase/(Decrease) due to Claims Experience	($5,699,000)
Increase/(Decrease) due to Assumption Changes	$2,485,000
7/1/2019 Unfunded Accrued Liability (UAL)	$3,245,820

[1] Spouses of retired employees with husband/wife (of family) coverage are not included in these counts.

Section I Executive Summary

Plan Provisions

Employees who retired after July 1, 2002 with unreduced pension or disability benefits from the Virginia Retirement System and have at least 15 years of HRSD service are eligible for benefits. Retiring employees must also be participants in the employee health plan. Eligible dependents of participants may be covered under this Plan.

The underlying medical plan is the Cigna Surround Plan for Medicare eligible retirees and a high deductible health plan for pre-Medicare retirees.

For retiree only coverage, post Medicare, the retiree contribution is equal to the maximum VRS Health Insurance Credit of $45 per month. For pre Medicare, retiree only coverage, the retiree contribution is $120 per month. See Section 7 for more details.

Demographic Data

Demographic data as of July 1, 2019 was provided to us by the Hampton Roads Sanitation District. This data included retirees who currently receive benefits through the HRSD OPEB Plan. Although we have not audited this data we have no reason to believe that it is inaccurate.

Claims Data

Monthly paid claims and enrollment for employees and retirees from July 1, 2018 to June 30, 2019 were supplied by the carrier. The over age 65 costs are based on the premiums for the Medicare plan.

Although we have not audited the claims data we have no reason to believe that it is inaccurate.

Impact of Health Care Reform

We have adjusted the pre-65 medical care trend due to the projected impact of the “Cadillac Tax”. The Cadillac Tax is one of the provisions of the Affordable Care Act (ACA) of 2010. The Cadillac Tax provision is effective in 2022. The Cadillac Tax only applies to plans that cost $10,200 or more for an individual or $27,500 per family. There will be a 40 percent excise tax for expenditures over these thresholds. The cost thresholds are indexed by general inflation each year after 2018. Because medical trends are projected to be higher than general inflation we would expect the percentage of the premium that is subject to the premium tax to increase over time. We have assumed that general inflation will average 2.4 percent per annum for purposes of estimating the impact of the excise tax.

There are other provisions of the ACA that could impact future costs. Some of the provisions (for example risk adjustment charges for plans that cover healthier populations) could increase costs, while others (for example, less uninsured care costs might be passed on to those with insurance) may reduce costs over time. Because the impact of these provisions is unclear at this time, we have made no other adjustments to the medical care trend.

Section I Executive Summary

Implicit Subsidy

The published insurance rates for persons prior to Medicare eligibility are based primarily on the healthcare usage of active employees. Since retirees use healthcare at a rate much higher than employees, using these blended rates creates an implicit subsidy for the retiree group. ASOP 6 requires that the claims assumption we use for this valuation be based on the actual per-capita retiree cost. The difference between the actual usage of healthcare by retirees and the assumption built into the published rates is identified as the implicit subsidy amount.

Demographic Assumptions

The demographic assumptions are based on those used for State Employees in the Virginia Retirement System (VRS). Demographic assumptions used mirror those used for the VRS pension plan.

All employees are assumed to participate in the State of Virginia Retirement System (VRS). Section 7 details the assumptions for electing coverage.

Economic Assumptions

The discount rate assumption is tied to the return expected on the funds used to pay these benefits. The discount rate assumption of 6 percent is the long term expected return on trust assets and is unchanged from the prior actuarial report.

The medical trend assumption was developed using the Society of Actuaries (SOA) Long-Run Medical Cost Trend Model, version 2019_b. The following baseline assumptions were used as input variables into the SOA model:

Rate of Inflation	2.4%
Rate of Growth in Real Income / GDP per capita	1.5%
Extra Trend due to Technology and other factors	1.2%
Expected Health Share of GDP in 2028	20.5%
Health Share of GDP Resistance Point	25.0%
Year for Limiting Cost Growth to GDP Growth	2075

The 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 have been developed under the guidance of an SOA Project Oversight Group.

The pre-65 medical trend was increased to reflect the impact of the Cadillac Tax. For this purpose, general inflation was assumed to be 2.4 percent per annum.

Payroll is assumed to increase at 2.5% per annum. This assumption is used to determine the level percentage of payroll amortization factor.

Section II FYE 2020 Determination of ADC

Below is a summary of the calculation of the Plan's ADC as of June 30, 2019 under current plan provisions using 6.00% discount rate. The unfunded actuarial accrued liability is expected to be fully amortized in 15 years as of 6/30/2019. Item 6 shows the ADC if the medical trend was increased 1 percent.

		FYE 2020
(1)	Expected Rate of Return	6.00%
(2)	Accrued Liability	
	(a) Employees	$33,637,466
	(b) Retirees	$20,616,457
	(c) Totals (a + b)	$54,254,000
(3)	Actuarial Value of Assets	$51,008,180
(4)	Unfunded Accrued Liability (UAL) (2 – 3)	$3,245,820
(5)	Annual Determined Contribution (ADC)	
	(a) Normal Cost	$1,845,000
	(b) Amortization of Unfunded Accrued Liability (see Section 4)	$884,570
	(c) Total ADC (a + b)	$2,729,570
(6)	1% Sensitivity (ADC)	$4,243,908

Section III Assets

Market Value of Assets Reconciliation

Below is a reconciliation of market value of assets from last year to this year and the asset gain/(loss) development.

		FYE 2019
(1)	Assumed return on assets	6.0%
(2)	Market value of assets beginning of year	47,103,248
(3)	Employer Contributions	2,992,873
(4)	Retiree premiums received by HRSD	317,679
(5)	Investment gains/(losses)	3,203,831
(6)	Benefit payments paid from Trust	(1,467,155)
(7)	Investment expenses	(125,191)
(8)	Market value of assets end of year *(2) + (3) + (4) + (5) + (6)*	52,025,285
(9)	Expected investment gains/(losses)	2,881,497
(10)	Asset (gain)/loss *(9) – (5) – (7)*	(197,143)

Actuarial Value of Assets Calculation

		FYE 2019
(1)	Market value of assets (MVA) end of year	52,025,285
(2)	Prior asset (gain)/loss deferred	
	(a) 80% of FYE 2019 (gain)/loss	(157,715)
	(b) 60% of FYE 2018 (gain)/loss	(448,198)
	(c) 40% of FYE 2017 (gain)/loss	(702,080)
	(d) 20% of FYE 2016 (gain)/loss	290,888
	(e) Total deferred asset (gain)/loss	(1,017,104)
(3)	Actuarial value of assets (AVA) end of year *(1) + (2)*	51,008,180
(4)	AVA as percent of MVA	98.0%

Section III Assets

Asset Bases

FYE	(Gain)/Loss Base
2019	(197,143)
2018	(746,996)
2017	(1,755,201)
2016	1,454,440

Section IV Amortization Payments

Development of Experience Loss (Gain)

An initial unfunded liability base was established on 7/1/2014. This base is amortized over a closed 10-year period as a level percentage of total payroll. Each subsequent year a new base is established for experience losses and gains. Each base will be amortized over a 15-year period as a level percentage of total payroll. Assumption changes will also be amortized over 15 years as a level percentage of total payroll. This change was made to reduce expense volatility. The following determines the new base that will be established due to the difference between expected and actual experience for FYE 2019.

(1)	Discount rate	6.0%
(2)	Unfunded Accrued Liability (UAL) last year	7,852,950
(3)	Interest on UAL	471,177
(4)	Last year Normal Cost (EOY)	1,795,000
(5)	Employer Contributions	(2,992,873)
(6)	Expected UAL *(2) + (3) + (4) + (5)*	7,126,254
(7)	Actual UAL *(Exhibit 2 item 4)*	3,245,820
(8)	Experience Loss (Gain) (7)-(6)	3,880,434

Unfunded Amortization Liability (UAL) Bases as of 7/1/2019

Date Established	Description	Original Base Amount	Outstanding Base Amount	Years Remaining	Payment EOY
7/1/2014	Initial UAL	7,120,320	4,365,316	5	988,612
7/1/2014	Experience (gain)/loss	(1,759,841)	(1,435,205)	10	(176,125)
7/1/2014	Decrement change	(53,000)	(43,224)	10	(5,304)
7/1/2015	FYE 2015 base	96,239	82,908	11	9,397
7/1/2016	FYE 2016 base	1,495,553	1,349,863	12	142,463
7/1/2017	FYE 2017 base	1,296,257	1,217,403	13	120,467
7/1/2018	FYE 2018 base	1,635,742	1,589,193	14	148,309
7/1/2019	FYE 2018 base	(2,213,434)	(3,880,434)	15	(343,249)
	Total		**3,245,820**		**884,570**

Section V Valuation Data

Counts – Employees and Retirees

The following table summarizes the participant counts and ages, as of 7/1/2019 and 7/1/2018, for the population:

Data as of			7/1/2019	7/1/2018
(1)	Number of Participants			
	(a)	Employees	804	786
	(b)	Healthy Retirees[2]	159	153
	(c)	Disabled Retirees[2]	11	11
(2)	VRS Plan 1 Participants			
	(a)	Number of Employees	402	419
	(b)	Average Age	51.93	51.10
	(c)	Average VRS Service	22.93	22.12
(3)	VRS Plan 2 Participants			
	(a)	Number of Employees	177	179
	(b)	Average Age	40.04	38.94
	(c)	Average VRS Service	8.26	7.32
(4)	Hybrid Plan Participants			
	(a)	Number of Employees	225	188
	(b)	Average Age	35.20	35.25
	(c)	Average VRS Service	2.83	2.47
(5)	Retiree Statistics – Average Age			
	(a)	Healthy	66.42	65.81
	(b)	Disabled	61.67	60.67
	(c)	**Total**	**66.12**	**65.47**

[2] Retirees with retiree and spouse or family coverage are counted as one (1) for this purpose

Section V Valuation Data

Active Age - Service Distribution

Shown below is a distribution based on age and VRS service of all HRSD active employees as of July 1, 2019.

	Years of VRS Service as of 7/1/2019								
Age	**Under 1**	**01-04**	**05-09**	**10-14**	**15-19**	**20-24**	**25-29**	**30+**	**Total**
Under 25	10	14	0	0	0	0	0	0	24
25 - 29	16	44	22	1	0	0	0	0	83
30 - 34	7	30	40	20	0	0	0	0	97
35 - 39	4	27	29	37	10	1	0	0	108
40 - 44	4	17	18	22	16	8	0	0	85
45 - 49	2	16	23	20	20	18	10	1	110
50 - 54	0	6	7	19	8	18	20	22	100
55 - 59	0	7	8	13	5	19	21	56	129
60 - 64	1	2	3	6	13	6	12	15	58
65 & Up	0	1	0	1	1	2	1	4	10
Total	**44**	**164**	**150**	**139**	**73**	**72**	**64**	**98**	**804**

Retiree Age – Medical Coverage Distribution

Shown below is a distribution based on age of retiree participants who are currently receiving medical and drug benefits from the HRSD.

Age	Individual	Husband/Wife	Total
Less Than 45	0	0	0
45 – 50	1	1	2
50 – 55	2	0	2
55 – 60	21	4	25
60 – 65	35	14	49
65 – 70	39	6	45
70 – 75	28	2	30
75 – 80	13	1	14
80 or more	3	0	3
Total	**142**	**28**	**170**

Section VI Summary of Principal Plan Provisions

The following summary describes principal plan provisions assumed in calculating the cost of this Plan.

In order to receive retiree medical benefits from the HRSD Plan (the "Plan"), an employee of Hampton Roads Sanitation District (HRSD) must:

(1) Qualify for an unreduced retirement benefit from the Virginia Retirement System (VRS),
(2) Be covered by the HRSD group health plan for active employees at retirement,
(3) Have 15 or more years of service with HRSD, or have at least 10 years of service with HRSD and 10 or more years of service with a VRS employer with a retiree health plan, and
(4) Be at least age 55.

An eligible participant may cover himself and his eligible dependents in the HRSD Plan. Participating dependents are also entitled to continue coverage under the Plan after the death of the retired employee.

Virginia Retirement System (VRS) Retirement Eligibility

VRS has three benefit structures for members.

- VRS Plan 1 is for employees hired prior to July 1, 2010 and vested by January 1, 2013, or previous VRS members who did not take a refund of employee contributions.
- VRS Plan 2 is for employees hired on or after July 1, 2010 plus employees not vested by January 1, 2013.
- Hybrid Retirement Plan is for any employee hired for the first time in a covered position, with no prior VRS creditable service, on or after January 1, 2014.

The Hybrid Retirement Plan includes judges appointed or elected to an original term on or after January 1, 2014. Members of SPORS and VaLORS, and political subdivision employees who have enhanced hazardous duty coverage, are exempt from this provision.

Members in VRS Plan 1 or VRS Plan 2 may elect to transfer to the Hybrid Retirement Plan.

Below is a summary of the current earliest retirement eligibility conditions from VRS.

VRS Plan 1 (Employees hired before July 1, 2010 and vested by January 1, 2013) – earlier of

- Attain age 55 with 5 years of VRS creditable service, or
- Attain age 50 with 10 years of VRS creditable service [3].

[3] VRS requires age 50 with 10 years of service for retirement benefits. However, to receive HRSD OPEB benefits, a participant must be at least age 55.

Section VI Summary of Principal Plan Provisions

Virginia Retirement System (VRS) Retirement Eligibility

VRS Plan 2 and Hybrid Retirement Plan – earlier of

- Attain Social Security Normal Retirement Age with 5 years of VRS creditable service,
- Age plus years of VRS creditable service equal 90, or
- Attain age 60 with 5 years of VRS creditable service.

The earliest unreduced pension retirement eligibility is:

VRS Plan 1 (Employees hired before July 1, 2010 and vested by January 1, 2013) – earlier of

- Attain age 65 with 5 years of VRS creditable service, or
- Attain age 50 with 30 years of VRS creditable service.

VRS Plan 2 and Hybrid Retirement Plan – earlier of

- Attain Social Security Normal Retirement Age with 5 years of VRS creditable service, or
- Age plus years of VRS creditable service equal 90.

Vesting under VRS (VRS Plan 1, VRS Plan 2 and the Hybrid Retirement Plan) requires 5 years of service credit.

Disability Retirement

There are two types of disability retirement under VRS, work related and non work related. There is no age or service requirement for disability retirement. However, the amount of benefit from VRS will depend upon years of service and type of disability retirement.

Participants eligible for disability retirement from VRS must have 15 or more years of service with HRSD to be eligible for this Plan.

VRS Health Insurance Credit

The Virginia Retirement System (VRS) offers a Health Insurance Credit (HIC) to eligible members. The HIC is a cash reimbursement to assist members with the cost of retiree health insurance premiums. The credit is added to the member’s monthly retirement benefit from VRS.

The monthly credit is calculated as a dollar amount for each year of VRS service. The credit ends upon the member’s death and cannot exceed the amount of the member’s individual health insurance premium. (The credit applies to the retiree portion of the premium only.) Currently, the monthly credit is $1.50 per year of VRS service, up to a maximum of $45.

To be eligible for the HIC, the member must have a minimum of 15 years of VRS creditable service at retirement. Members retiring on VRS disability or receiving a long-term disability benefit through the Virginia Sickness & Disability Program (VSDP) also are eligible.

Section VI Summary of Principal Plan Provisions

VRS Health Insurance Credit

Disabled participants are eligible for the maximum health insurance credit, regardless of actual years of service.

The VRS HIC reduces the amount a retired employee pays out of pocket. It has no effect on the explicit subsidy provided by HRSD.

Retiree Contributions

HRSD shares the cost of coverage under the Plan with participating retirees. HRSD pays the difference between the contributions it requires retirees to make toward the cost of their coverage and the cost to HRSD of providing that coverage. Retirees must pay almost all of the cost for their participating dependents.

A retiree's contribution towards the cost of retiree only coverage, post Medicare, corresponds to the typical retiree's VRS HIC. The table below summarizes the monthly retiree health insurance premiums covered retirees must pay for fiscal year ending June 30, 2019.

Monthly Retiree Contributions		
	Retiree	**Spouse**
Pre Age 65	$120	$415
Post Age 65	$45	$397

Surviving spouses pay the same premium as dependent spouses.

The retiree is responsible for payment of any applicable deductibles and co-payments in addition to the retiree's monthly contribution.

Section VI Summary of Principal Plan Provisions

Medical Plan Description

HRSD expressly reserves the right to add, modify or eliminate the benefits provided under the Plan. Employees participate in a wellness program. Employees who satisfy the wellness program requirements are placed in Plan A which has lower deductibles than Plan B. All pre-Medicare retirees are placed in Plan A, which is a Cigna High Deductible Health Plan (HDHP). Current plan provisions for Plan A include:

- Coinsurance: There is no coinsurance for in network charges. For out-of-network charges the coinsurance is 20% after the deductible is met.
- Deductible:
    - In network providers - for employee only, $1,500 per year; for family coverage, $3,000 per year.
    - Out of network providers – for employee only, $3,000 per year; for family coverage $6,000 per year.
- Contract year out of pocket maximum:
    - In network providers - for employee only, $3,000; for family coverage, $6,000
    - Out of network providers - for employee only, $6,000; for family coverage, $12,000
- For prescription drugs, out of network providers are not covered. For non preventative drugs, the plan deductible must be met first before the co-pays apply. Prescription drug copayments for in-network providers vary from $0 to $50 depending on three factors:
    - Whether the drug is (1) generic, (2) preferred, (3) non-preferred;
    - Whether the drug is preventative versus non-preventative; and
    - Retail versus home delivery.

All Medicare eligible participants are required to enroll in both Medicare Part A and Part B. Medicare eligible participants are enrolled in the Cigna Medicare Surround and Cigna Medicare Rx (PDP) Supplement Plan. The Cigna plan is secondary to Medicare.

Dental and Vision Benefit

Retirees may elect dental and/or vision coverage. This benefit is entirely paid for by retirees (there is no employer subsidy for dental or vision coverage). Hence there is no liability to HRSD for this benefit.

Changes in Plan Provisions Since Prior Valuation

None.

Section VII Valuation Methods and Assumptions

Valuation Date
July 1, 2019

Adjustments for Events After the Measurement date
None

Rollforward Method
For the FYE 2020 expense calculation, liability was not rolled forward. Market value of assets was not rolled forward.

Cost Method
This valuation uses the Projected Unit Credit method, with linear pro-ration to assumed benefit commencement to determine the ADC. However, the GASB 74 and 75 required disclosures (in a separate report) use the Entry Age Normal method for the valuation.

Who is Ultimately Responsible for Assumptions
HRSD.

Asset Valuation Method
The asset valuation method is the smoothed market value with phase-in method, using a smoothing period of 5 years, as described in paragraph 3.11 of IRS Revenue Procedure 2000-40. This smoothing period is also used by VRS.

The actuarial value of assets will equal the market value of assets with gains subtracted or losses added at the rate described below:

a) 4/5 of the prior year's gain or loss
b) 3/5 of the second preceding year's gain or loss
c) 2/5 of the third preceding year's gain or loss
d) 1/5 of the fourth preceding year's gain or loss

The gain or loss for a year is determined by calculating the difference between the expected value of assets for the year and the market value of assets at the valuation date. The expected value of assets for the years is the market value of assets brought forward with interest at the valuation interest rate to the current valuation date. If the expected value is less than the market value, the difference is a gain. If the expected value is greater than the market value, there is a loss.

Amortization of the Unfunded Liability
An initial unfunded liability base was established on 7/1/2014. This base is amortized over a closed 10 year period as a level percentage of total payroll. Each subsequent year a new base is established for experience losses and gains. Each base will be amortized over a 15 year period as a level percentage of total payroll. Assumption changes will also be amortized over 15 years as a level percentage of total payroll. This change was made to reduce expense volatility.

Section VII Valuation Methods and Assumptions

Coverage Status and Age of Spouse

For participants who are inactive on the valuation date, the actual medical coverage (e.g. individual, husband/wife) found in the data is used.

For participants who are active employees on the valuation date, 95% of active employees are assumed to have employee health insurance at retirement. Of the employees that have employee health insurance at retirement, 100% of eligible employees are assumed to elect OPEB coverage. 35% of participating retirees are assumed to select employee plus spouse coverage. The remainder (65%) are assumed to elect individual coverage.

For both actives and inactives, females are assumed three (3) years younger than male spouse.

Interest Assumptions

	As of June 30, 2018	As of June 30, 2019
Expected Rate of Return on Assets	6.00%	6.00%
Payroll Growth	2.50%	2.50%

Trend Assumptions

The trend is based on the SOA Long Run Medical Cost Trend Model v. 2019_b, with 1.5% GDP assumption. The pre-65 medical trend was increased to reflect the impact of the Cadillac Tax. For this purpose, general inflation was assumed to be 2.4 percent per annum. The tables below illustrate the trend.

Pre Medicare Medical and Drug	Pre Medicare Medical and Drug	Post Medicare Medical and Drug
2019	5.4%	5.4%
2020	5.4%	5.4%
2030	5.2%	5.2%
2040	6.0%	5.2%
2050	5.4%	4.9%
2060	5.1%	4.7%
2070	4.5%	4.3%
Ultimate	**4.1%**	**3.9%**

Total premiums, total medical costs and assumed costs are assumed to increase with medical trend shown above.

Section VII Valuation Methods and Assumptions

Salary Scale

The following salary scale will be used in the calculation of EAN liability (required for disclosures under GASB 74 and 75):

Service	Rate
1 - 2	5.35%
3	4.75%
4 - 6	4.45%
7	4.35%
8	4.25%
9 - 10	4.00%
11 - 19	3.65%
20 +	3.50%

Decrement Assumptions

Below is a summary of decrements used in this valuation. Sample retirement, disability, and termination rates are illustrated in the tables below. The decrement assumptions with the exception of mortality are based on the decrements used for the Virginia Retirement System (VRS) State Employees.

Mortality Decrements		Description
(1)	Healthy	RP-2014 Mortality Table, Fully Generational, Projected with Scale MP-2014
(2)	Disabled	RP-2014 Disabled Mortality Table, Fully Generational, Projected with Scale MP-2014

Section VII Valuation Methods and Assumptions

Decrement Assumptions

Retirement – VRS Plan 1[4] Male Years of Service						
Age	5	6-9	10	11-29	30	>30
< 50	-	-	-	-	-	-
50	-	-	.02200	.02200	.12500	.12500
51	-	-	.02200	.02000	.08000	.09000
52	-	-	.02200	.02000	.08000	.09000
53	-	-	.02200	.02000	.05000	.09000
54	-	-	.02200	.02000	.05000	.09000
55	.03000	.03000	.03000	.02333	.05000	.09000
56	.03000	.02667	.02667	.02667	.05000	.09000
57	.03000	.02667	.02667	.02667	.07500	.09000
58	.03000	.02667	.02667	.02667	.10000	.09000
59	.03000	.02667	.02667	.02667	.10000	.09000
60	.03000	.03333	.03333	.03333	.11500	.09000
61	.10000	.05000	.05000	.05000	.16500	.15000
62	.10000	.06667	.06667	.06667	.20000	.20000
63	.10000	.06667	.06667	.06667	.20000	.17500
64	.10000	.09000	.09000	.09000	.20000	.17500
65	.25000	.25000	.25000	.25000	.25000	.25000
66	.27500	.25000	.25000	.25000	.25000	.25000
67	.27500	.22000	.22000	.22000	.22000	.22000
68-74	.20000	.22000	.22000	.22000	.22000	.22000
75	.00000	.00000	.00000	.00000	.00000	.00000

[4]Retirement decrement begins (and termination decrement ends) when the employee reaches earliest retirement eligibility. Based on consultation with HRSD staff, the VRS retirement rates for VRS Plan 1 were reduced by a third for the age and service combinations in which employees are eligible for reduced retirement benefits but not yet eligible for unreduced retirement benefits.

Section VII Valuation Methods and Assumptions

Decrement Assumptions

Retirement – VRS Plan 1[5]						
Female						
Years of Service						
Age	5	6-9	10	11-29	30	>30
< 50	-	-	-	-	-	-
50	-	-	0.02000	0.02000	0.07500	0.07500
51	-	-	0.02333	0.02000	0.07500	0.06000
52	-	-	0.02333	0.02000	0.07500	0.06000
53	-	-	0.02333	0.02333	0.10000	0.09000
54	-	-	0.03333	0.02333	0.10000	0.09000
55	0.03333	0.03333	0.03333	0.02667	0.10000	0.09000
56	0.03333	0.03333	0.03333	0.03333	0.10000	0.09000
57	0.03333	0.03333	0.03333	0.03333	0.10000	0.09000
58	0.03333	0.03333	0.03333	0.03333	0.10000	0.09000
59	0.03333	0.03333	0.03333	0.03333	0.10000	0.09000
60	0.03333	0.03333	0.03333	0.03333	0.12000	0.12500
61	0.05000	0.05333	0.05333	0.05333	0.16500	0.17500
62	0.06667	0.08000	0.08000	0.08000	0.22500	0.25000
63	0.11667	0.08000	0.08000	0.08000	0.22500	0.17500
64	0.11667	0.10000	0.10000	0.10000	0.22500	0.17500
65	0.27500	0.27500	0.27500	0.27500	0.27500	0.30000
66	0.30000	0.30000	0.30000	0.30000	0.30000	0.30000
67	0.30000	0.25000	0.25000	0.25000	0.25000	0.25000
68-74	0.25000	0.25000	0.25000	0.25000	0.25000	0.25000
75	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

[5] Retirement decrement begins (and termination decrement ends) when the employee reaches earliest retirement eligibility. Based on consultation with HRSD staff, the VRS retirement rates for VRS Plan 1 were reduced by a third for the age and service combinations in which employees are eligible for reduced retirement benefits but not yet eligible for unreduced retirement benefits.

Section VII Valuation Methods and Assumptions

Decrement Assumptions

Retirement – VRS Plan 2 and Hybrid, Male						
	Years of Service					
Age	0-4	5	6-25	30	35	>=40
< 50	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.125
51	0.000	0.000	0.000	0.000	0.000	0.080
52	0.000	0.000	0.000	0.000	0.000	0.090
53	0.000	0.000	0.000	0.000	0.000	0.090
54	0.000	0.000	0.000	0.000	0.000	0.090
55	0.000	0.000	0.000	0.000	0.050	0.090
56	0.000	0.000	0.000	0.000	0.050	0.090
57	0.000	0.000	0.000	0.000	0.090	0.090
58	0.000	0.000	0.000	0.000	0.090	0.090
59	0.000	0.000	0.000	0.000	0.090	0.090
60	0.000	0.045	0.045	0.115	0.090	0.090
61	0.000	0.150	0.075	0.165	0.150	0.150
62	0.000	0.150	0.100	0.200	0.200	0.200
63	0.000	0.150	0.100	0.175	0.175	0.175
64	0.000	0.150	0.135	0.175	0.175	0.175
65	0.000	0.250	0.250	0.250	0.250	0.250
66	0.000	0.275	0.250	0.250	0.250	0.250
67	0.000	0.275	0.220	0.220	0.220	0.220
68-74	0.000	0.200	0.220	0.220	0.220	0.220
< 75	0.000	1.000	1.000	1.000	1.000	1.000

Section VII Valuation Methods and Assumptions

Decrement Assumptions

Retirement – VRS Plan 2 and Hybrid, Female						
	Years of Service					
Age	0-4	5	6-25	30	35	>=40
< 50	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.075
51	0.000	0.000	0.000	0.000	0.000	0.075
52	0.000	0.000	0.000	0.000	0.000	0.060
53	0.000	0.000	0.000	0.000	0.000	0.090
54	0.000	0.000	0.000	0.000	0.000	0.090
55	0.000	0.000	0.000	0.000	0.100	0.090
56	0.000	0.000	0.000	0.000	0.100	0.090
57	0.000	0.000	0.000	0.000	0.090	0.090
58	0.000	0.000	0.000	0.000	0.090	0.090
59	0.000	0.000	0.000	0.000	0.090	0.090
60	0.000	0.050	0.050	0.120	0.125	0.125
61	0.000	0.075	0.080	0.165	0.175	0.175
62	0.000	0.100	0.120	0.250	0.250	0.250
63	0.000	0.175	0.120	0.175	0.175	0.175
64	0.000	0.175	0.150	0.175	0.175	0.175
65	0.000	0.275	0.275	0.300	0.300	0.300
66	0.000	0.300	0.300	0.300	0.300	0.300
67	0.000	0.300	0.250	0.250	0.250	0.250
68-74	0.000	0.250	0.250	0.250	0.250	0.250
< 75	0.000	1.000	1.000	1.000	1.000	1.000

Section VII Valuation Methods and Assumptions

Decrement Assumptions

Disability Rates		
Age	Male	Female
20	0.00111	0.00110
25	0.00180	0.00250
30	0.00228	0.00528
35	0.00323	0.00703
40	0.00530	0.00885
45	0.00858	0.01185
50	0.01243	0.01573
55	0.01573	0.01855
60	0.01725	0.01838
65	0.01643	0.01633
70	0.01430	0.02103

The disability rates are equal to 2.5 times the disability rates used in the valuation of VRS. All disability is assumed to be not in the line of duty.

Termination, Males Years of Service											
Age	0	1	2	3	4	5	6	7	8	9	>=10
20	0.25852	0.25852	0.25694	0.23691	0.19663	0.15321	0.11602	0.09132	0.08331	0.08331	0.08331
25	0.22297	0.22297	0.22056	0.20171	0.16921	0.13670	0.10954	0.09132	0.08251	0.07732	0.07214
30	0.17601	0.17601	0.17095	0.15425	0.13244	0.11401	0.10011	0.08993	0.08095	0.06790	0.05485
35	0.15120	0.14553	0.13631	0.12195	0.10694	0.09577	0.08902	0.08387	0.07574	0.05878	0.04183
40	0.14480	0.12618	0.11198	0.09890	0.08767	0.08029	0.07681	0.07442	0.06799	0.04938	0.03077
45	0.14223	0.11470	0.09617	0.08321	0.07345	0.06888	0.06600	0.06412	0.05934	0.04282	0.02630
50	0.13789	0.10338	0.08617	0.07370	0.06544	0.06362	0.05994	0.05630	0.05128	0.03879	0.02630
55	0.13242	0.10032	0.08050	0.07094	0.06491	0.06348	0.05950	0.05391	0.04470	0.03550	0.02630
60	0.13038	0.09617	0.07857	0.07094	0.06491	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
65	0.13038	0.09477	0.07859	0.07094	0.06491	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
70	0.13038	0.09477	0.07859	0.07094	0.06491	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Section VII Valuation Methods and Assumptions

Decrement Assumptions

						Termination, Females					
						Years of Service					
Age	0	1	2	3	4	5	6	7	8	9	>=10
20	0.31434	0.31434	0.30334	0.27392	0.23350	0.18606	0.14708	0.12545	0.12362	0.12362	0.12362
25	0.26747	0.26747	0.25594	0.23170	0.20061	0.16601	0.13663	0.11705	0.11136	0.11136	0.11136
30	0.21874	0.20726	0.19398	0.17630	0.15700	0.13853	0.12163	0.10538	0.09500	0.09045	0.09045
35	0.19257	0.17078	0.15532	0.14101	0.12758	0.11658	0.10633	0.09380	0.08241	0.07177	0.06019
40	0.17770	0.14790	0.12987	0.11685	0.10577	0.09775	0.09030	0.08135	0.07188	0.05904	0.03747
45	0.17029	0.13335	0.11247	0.09984	0.08920	0.08275	0.07531	0.06872	0.06277	0.05214	0.03025
50	0.16721	0.12286	0.09934	0.08763	0.07822	0.07316	0.06479	0.05936	0.05545	0.05088	0.03025
55	0.16695	0.11694	0.09149	0.08236	0.07660	0.07039	0.06175	0.05711	0.05138	0.05088	0.03025
60	0.16695	0.11656	0.09060	0.08236	0.07660	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
65	0.16695	0.11656	0.09060	0.08236	0.07660	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
70	0.16695	0.11656	0.09060	0.08236	0.07660	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Claims Assumption

To determine the pre Medicare assumed cost, we weighted the FYE 2020 pre Medicare premium rates by the current enrollment. The post Medicare assumed cost was set equal to the per member per month premium for the Cigna Medicare Supplemental Plan (with Medicare Part D).

Gross claims for retirees are based on enrollment and paid medical claims and prescription for employees and retirees paid from July 1, 2018 to June 30, 2019. Claims were projected assuming annual increases of 6% for pre 65 medical claims and prescription drug claims. The average weighted claims were age adjusted using aging factors developed using CMS data. The over age 65 costs are based on the age adjusted premiums for the Medicare plan.

Administrative costs of $1,053 per annum were assumed for the pre age 65 claims. Pre Medicare family coverage is assumed to be 2.80 times the cost of individual coverage for the same age band. Post Medicare family coverage is assumed to be 2.00 times the cost of individual coverage for the same age band.

The following chart shows explicit costs (based on published rates), and total medical and drug cost. The explicit and total cost is split by pre vs. post-Medicare, single vs. family coverage.

Section VII Valuation Methods and Assumptions

Claims Assumption

	FYE 2020	
Total Costs (per annum)	**Single**	**Family**
1. Assumed Costs (Explicit Costs)		
a. Pre-Medicare	7,494	20,983
b. Medicare Age	4,951	9,902
2. Total Medical Costs (includes prescription drugs)		
a. Under 50	7,619	21,333
b. Age 50-54	9,129	25,560
c. Age 55-59	10,542	29,517
d. Age 60-64	12,368	34,630
e. Age 65-69	4,440	8,879
f. Age 70-74	5,294	10,588
g. Age 75-80	5,573	11,147
h. Age 80-84	6,002	12,004
i. Over Age 85	6,007	12,015

Other Assumptions

- Active participants for which we did not receive VRS service were valued assuming 0 years of service as of valuation date.

Changes in methods and assumptions since prior valuation

- The claims assumption was updated to include the most recent plan experience.
- The medical trend was updated to the latest SOA long term medical trend.

Section VIII Glossary

Actuarially Determined Contribution:
For Plans with irrevocable trusts, the recommended contribution to the Plan (determined in conformity with Actuarial Standards of Practice) that is projected to result in assets equaling the actuarial accrued liability within a period of time.

Covered Group:
Plan members included in an actuarial valuation.

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

Election Rate:
The percentage of retiring employees assumed to elect coverage.

Employer's Contributions:
Contributions made in relation to the actuarially determined contributions of the employer (ADC). An employer has made a contribution in relation to the ADC if the employer has (a) made payments of benefits directly to or on behalf of a retiree or beneficiary, (b) made premium payments to an insurer, or (c) irrevocably transferred assets to a trust, or an equivalent arrangement, in which plan assets are dedicated to providing benefits to retirees and their beneficiaries in accordance with the terms of the plan and are legally protected from creditors of the employer(s) or plan administrator.

Entry Age Normal Funding Method:
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.

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.

Measurement Date:
A day selected by the local government from the last day of the prior fiscal year to the last day of the current fiscal year. The measurement date is not necessarily the same date as the valuation date.

Section VIII Glossary

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 insurance premiums).

Other Post-Employment Benefits:
Post-employment benefits other than pension benefits. Other post-employment benefits (OPEB) include post-employment healthcare benefits, life insurance, regardless of the type of plan that provides them, and all post-employment benefits provided separately from a pension plan, excluding benefits defined as termination offers and benefits.

Pay-as-you-go (PAYGO):
A method of financing a benefit 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 covered payroll attributable to inflation; used in applying the level percentage of projected payroll amortization method.

Plan Liabilities:
Obligations payable by the plan at the reporting date, including, primarily, benefits and refunds due and payable to plan members and beneficiaries, and accrued investment and administrative expenses. Plan liabilities do not include actuarial accrued liabilities for benefits that are not due and payable at the reporting date.

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.

Post-employment:
The period between termination of employment and retirement as well as the period after retirement.

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

Section VIII Glossary

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 2000, 7.5% for 2001, and 7% for 2002 and thereafter, then 8% and 7.5% are select rates, and 7% is the ultimate rate.

Service Cost:

That portion of the Actuarial Present Value of plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

Valuation Date:

The as-of date for employee census data. Under GASB75, the valuation date must be within 30 months of the last day of the fiscal year.

Appendix 1. The Actuarial Valuation Process

Step 1 – Determining the Present Value of Benefits

The first step of the actuarial valuation process is to determine the Present Value of Benefits (PVB). The PVB represents the estimated amount needed to provide all future OPEB benefits.

For a retiree it is based on the following assumptions:

- The current cost of medical benefits
- How fast medical costs will increase (medical trend)
- Mortality

For an employee it *also* considers the following assumptions:

- How many employees will leave before becoming eligible for the benefit
- At what age will employees retire
- What percentage of eligible retirees will elect coverage
- What percent of eligible retirees will have spouse coverage

Based on these assumptions, the actuary estimates a payment stream for each year in the future.

The streams of payments are discounted to the valuation date using a discount rate. The discount rate is similar to the rate of return you would expect to earn on funds in a bank or other investment vehicle. The sum of the discounted payment stream is the PVB.

Step 2 – The Actuarial Funding Method

If the entire present value of benefits was deposited into a trust when every new employee was hired, there would be (in the absence of actuarial losses caused by experience different than that assumed) no cost after the first year. The goal of an actuarial funding method is to spread the present value of benefits throughout the employee's career.

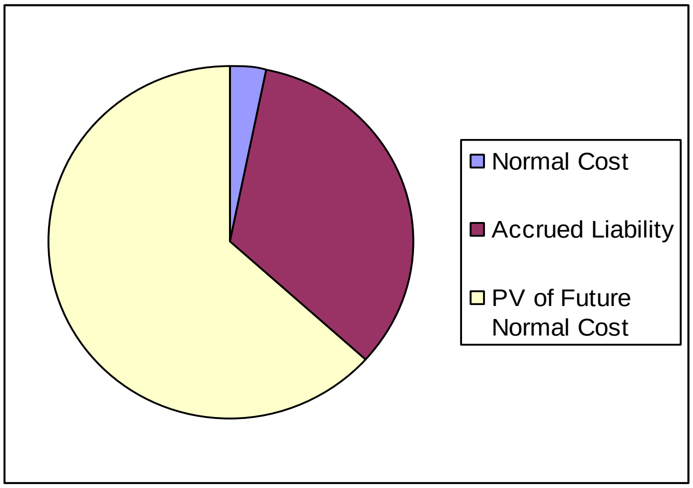
Accordingly, the second step of an actuarial valuation is to divide the Present Value of Benefits into three components:

- The normal cost (the liability accrual for the year)
- The accrued liability (the liability amount allocated for past service)
- The present value of future normal costs (the liability amount allocated to the future)

Appendix 1 - The Actuarial Valuation Process

Step 2 – The Actuarial Funding Method

The following chart illustrates the 3 components of the Present Value of Benefits:



For a retired employee, the present value of benefits equals the accrued liability.

The ADC is determined using the Projected Unit Credit Actuarial Funding method. The GASB 75 accounting standard requires the use of the Entry Age Normal Actuarial Funding Method.

The Projected Unit Credit (PUC) Actuarial Funding Method

The PUC method allocates the present value of benefits by the service at valuation date divided by the service at retirement. So, for an employee with 10 years of service who is expected to retire in 20 years with 30 years of service, the actuarial accrued liability would be one third (10 divided by 30) of the present value of benefits.

The Entry Age Normal (EAN) Actuarial Funding Method

The goal of the EAN method is that the annual accrual (or normal cost) be a level percent of pay throughout an employee's career. This method requires a salary increase assumption. The normal cost percentage is equal to the present value of benefits divided by the present value of future salary determined when the employee was hired. The actuarial accrued liability is equal to the present value of benefits minus the normal cost percentage times the present value of future salaries at the valuation date.

While it depends upon the discount rate and the salary increase assumption generally the EAN method has a higher actuarial accrued liability than the PUC Method.

Appendix 2 - Projection Based on 2019 Valuation

FYE	2020 7/01/2019 - 6/30/2020	2021 7/01/2020 - 6/30/2021	2022 7/01/2021 - 6/30/2022	2023 7/01/2022 - 6/30/2023	2024 7/01/2023 - 6/30/2024	2025 7/01/2024 - 6/30/2025	2026 7/01/2025 - 6/30/2026	2027 7/01/2026 - 6/30/2027	2028 7/01/2027 - 6/30/2028	2029 7/01/2028 - 6/30/2029	2030 7/01/2029 - 6/30/2030
Assumptions:											
Trust Investment Return	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
Discount Rate	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
Payroll growth	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
Ultimate Trend	3.90%	3.90%	3.90%	3.90%	3.90%	3.90%	3.90%	3.90%	3.90%	3.90%	3.90%
Unfunded Accrued Liability:											
APBO BOY	54,254,000	57,599,120	61,016,097	64,471,043	68,005,286	71,619,373	75,289,165	79,043,665	82,882,685	86,806,056	90,969,099
Assets (AVA) BOY	51,008,180	55,353,127	60,486,704	64,518,354	68,951,159	73,493,579	77,050,668	80,680,073	84,380,723	88,151,508	92,146,748
Unfunded APBO (UAL)	3,245,820	2,245,993	529,393	(47,311)	(945,873)	(1,874,206)	(1,761,503)	(1,636,408)	(1,498,038)	(1,345,452)	(1,177,649)
Percent Funded	94%	96%	99%	100%	101%	103%	102%	102%	102%	102%	101%
End of Year Annual Expense:											
Normal Cost (EOY)	1,845,000	1,917,000	1,992,000	2,070,000	2,151,000	2,235,000	2,322,000	2,413,000	2,507,000	2,605,000	2,707,000
Amortization of unfunded liability	884,570	879,262	815,255	853,929	871,580	(225,156)	(230,785)	(236,554)	(242,468)	(248,530)	(22,497)
ADC	**2,729,570**	**2,796,262**	**2,807,255**	**2,923,929**	**3,022,580**	**2,009,844**	**2,091,215**	**2,176,446**	**2,264,532**	**2,356,470**	**2,684,503**
Trust Assets:											
Beginning of Year MVA	52,025,285	56,121,252	60,328,819	64,557,783	68,951,159	73,493,579	77,050,668	80,680,073	84,380,723	88,151,508	92,146,748
Return on Investments	3,121,517	3,367,275	3,619,729	3,873,467	4,137,070	4,409,615	4,623,040	4,840,804	5,062,843	5,289,090	5,528,805
Employer Contributions	2,729,570	2,796,262	2,807,255	2,923,929	3,022,580	2,009,844	2,091,215	2,176,446	2,264,532	2,356,470	2,684,503
Benefit Payments with Interest	(1,755,120)	(1,955,970)	(2,198,020)	(2,404,020)	(2,617,230)	(2,862,370)	(3,084,850)	(3,316,600)	(3,556,590)	(3,650,320)	(3,777,010)
End of Year MVA	56,121,252	60,328,819	64,557,783	68,951,159	73,493,579	77,050,668	80,680,073	84,380,723	88,151,508	92,146,748	96,583,046
Benefit Payments *(no interest)*	1,704,000	1,899,000	2,134,000	2,334,000	2,541,000	2,779,000	2,995,000	3,220,000	3,453,000	3,544,000	3,667,000

* *These calculations assume (1) a stable population, (2) no changes to plan provisions, methods or assumptions in any future year, (3) HRSD will continue to contribute the ARC to the OPEB Trust in each future year.*

* *The Plan's actual expense may be different than the figures estimated above due to for example, demographic changes, changes in assumptions or methods, asset returns, or changes in laws/regulations.*

* *For these calculations we used the same data, methods, assumptions and plan provisions as described in this valuation report.*