



PORT OF HOUSTON AUTHORITY POST-RETIREMENT MEDICAL PLAN

GASB 74 and 75 DISCLOSURE

Fiscal Year: January 1, 2020 to December 31, 2020

Prepared by

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Certification

Actuarial computations presented in this report under Statements No. 74 and 75 of the Governmental Accounting Standards Board are for purposes of assisting the Port of Houston in fulfilling its financial accounting requirements. No attempt is being made to offer any accounting opinion or advice. This report is for fiscal year January 1, 2020 to December 31, 2020. The reporting date for determining plan assets and obligations is December 31, 2020. The calculations enclosed in this report have been made on a basis consistent with our understanding of the plan provisions. Determinations for purposes other than meeting financial reporting requirements may be significantly different than the results contained in this report. Accordingly, additional determinations may be needed for other purposes, such as judging benefit security or meeting employer funding requirements.

In preparing this report, we relied, without audit, on information as of January 1, 2019 and December 31, 2020 furnished by the Port of Houston. This information includes, but is not limited to, statutory provisions, member census data, and financial information. Please see Milliman's valuation report dated October 30, 2020 for more information on the plan's participant group as of January 1, 2019 as well as a summary of the plan provisions and a summary of the actuarial methods and assumptions used for funding purposes.

Milliman has developed certain models to estimate the values included in this report. The intent of the models was to estimate retiree medical claims costs by age and gender and annual trends for retiree medical benefits. We have reviewed the models, including their inputs, calculations, and outputs for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice (ASOP). In addition, the valuation results were developed using models intended for valuations that use standard actuarial techniques.

We performed a limited review of the census and financial information used directly in our analysis and have found them to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

We hereby certify that, to the best of our knowledge, this report, including all costs and liabilities based on actuarial assumptions and methods, is complete and accurate and determined in conformance with generally recognized and accepted actuarial principles and practices, which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Code of Professional Conduct, amplifying Opinions and supporting Recommendations of the American Academy of Actuaries.

Each of the assumptions used in this valuation with the exception of those set by law was set based on industry standard published tables and data, the particular characteristics of the plan, relevant information from the plan sponsor or other sources about future expectations, and our professional judgment regarding future plan experience. We believe the assumptions are reasonable for the contingencies they are measuring, and are not anticipated to produce significant cumulative actuarial gains or losses over the measurement period. Assumptions related to the claims costs and healthcare trend (cost inflation) rates for the retiree healthcare program discussed in this report were determined by Milliman actuaries qualified in such matters.

Certification

This valuation report is only an estimate of the plan's financial condition as of a single date. It can neither predict the plan's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of plan benefits, only the timing of plan contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as, but not limited to, the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic 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 or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuarial assignment, we did not perform an analysis of the potential range of such future measurements.

There is substantial uncertainty regarding the impact of the COVID-19 pandemic on projected plan costs. Therefore, for purposes of this report, we have chosen not to make any adjustments to these costs. However, please be aware that the COVID-19 pandemic could have a material cost impact in future

Milliman's work is prepared solely for the internal use and benefit of the Port of Houston Authority. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exceptions: (a) the Plan Sponsor may provide a copy of Milliman's work, in its entirety, to the Plan Sponsor's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the Port of Houston; and (b) the Plan Sponsor may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their specific needs.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuary is independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and has been prepared in accordance with generally recognized accepted actuarial principles and practices. Jake Pringle is a member of the American Academy of Actuaries and meets the Qualification Standards to render the actuarial opinion contained herein.



Jake Pringle, MAAA
Consulting Actuary

Overview of GASB 74 and GASB 75

The Governmental Accounting Standards Board (GASB) released new accounting standards for public postemployment benefit plans other than pension (OPEB) and participating employers in 2015. These standards, GASB Statements No. 74 and 75, have substantially revised the accounting requirements previously mandated under GASB Statements No. 43 and 45. The most notable change is that the Annual Required Contribution (ARC) has been eliminated and the Net OPEB Liability will be an item on the employer's financial statement rather than a footnote entry.

GASB 74 applies to financial reporting for public OPEB plans funded by OPEB trusts and is required to be implemented for plan fiscal years beginning after June 15, 2016. Note that a plan's fiscal year might not be the same as the employer's fiscal year. Even if the plan does not issue standalone financial statements, but rather is considered a trust fund of a government, it is subject to GASB 74. Under GASB 74, enhancements to the financial statement disclosures are required, along with certain required supplementary information.

GASB 75 governs the specifics of accounting for public OPEB plan obligations for participating employers and is required to be implemented for employer fiscal years beginning after June 15, 2017. GASB 75 requires a liability for OPEB obligations, known as the Net OPEB Liability (Total OPEB Liability for unfunded plans), to be recognized on the balance sheets of participating employers. Changes in the Net OPEB Liability (Total OPEB Liability for unfunded plans) will be immediately recognized as OPEB Expense on the income statement or reported as deferred inflows/outflows of resources depending on the nature of the change.

Executive Summary

Relationship Between Valuation Date, Measurement Date, and Reporting Date

The Valuation Date is January 1, 2019. This is the date as of which the actuarial valuation is performed. The Measurement Date is December 31, 2020. This is the date as of which the total OPEB liability is determined. The Reporting Date is December 31, 2020. This is the plan's and/or employer's fiscal year ending date.

Significant Changes

There have been no significant changes between the valuation date and fiscal year end.

Participant Data as of January 1, 2019

Actives	644
Retirees	319
Beneficiaries	31
Spouses of Retirees	<u>178</u>
Total	1,172

Schedule of Employer Contributions

Fiscal Year Ending December 31	Actuarially Determined Contribution	Actual Employer Contribution	Contribution Deficiency (Excess)	Covered Payroll	Contribution as a % of Covered Payroll
2011	\$8,114,532	\$10,535,646	(\$2,421,114)	\$34,938,502	30.15%
2012	7,913,103	10,775,727	(2,862,624)	34,938,502	30.84%
2013	6,908,528	11,226,443	(4,317,915)	34,615,344	32.43%
2014	6,568,490	11,363,303	(4,794,813)	33,689,999	33.73%
2015	5,536,880	11,202,847	(5,665,967)	38,906,511	28.79%
2016	5,798,101	8,772,355	(2,974,254)	38,906,511	22.55%
2017	5,401,609	9,454,403	(4,052,794)	40,287,296	23.47%
2018	4,384,071	9,484,054	(5,099,983)	40,287,296	23.54%
2019	3,324,459	8,463,823	(5,139,364)	49,778,058	17.00%
2020	3,494,130	5,431,444	(1,937,314)	49,778,058	10.91%

Actuarial Methods and Assumptions Used for Funding Policy

The employer pre-funds benefits through contributions to the trust. The current funding policy is to contribute the Actuarially Determined Contribution as calculated by the actuary. The Actuarially Determined Contribution is the sum of the current year's normal cost plus an amount necessary to amortize the unfunded liability over a closed 10 year period. The following actuarial methods and assumptions were used in the January 1, 2019 funding valuation. Please see the appendices of this report for further details.

Valuation Timing	Actuarial valuations for funding purposes are performed biennially as of January 1. The most recent valuation was performed as of January 1, 2019.
Actuarial Cost Method	Entry Age Normal
Amortization Method	
Level percent or level dollar	Level dollar
Closed, open, or layered periods	Open
Amortization period at January 1, 2019	10 years
Amortization growth rate	0.00%
Asset Valuation Method	Market Value
Inflation	2.20%
Salary Increases	Age based
Discount Rate	6.25%
Healthcare Cost Trend Rates	Varies by year; see appendices of this report for full table.
Retirement Rates	Varies by age; see appendices of this report for full table.
Withdrawal Rates	Varies by age; see appendices of this report for full table.
Disability Rates	Varies by age and gender; see appendices of this report for full table.
Mortality	Pri-2012 Mortality for Employees, Healthy Annuitants, and Disabled Annuitants with generational projection per Scale MP-2019

Actuarially Determined Contribution

The following exhibit provides the detailed calculation of the Actuarially Determined Contribution for the January 1, 2020 plan year.

	January 1, 2020
Normal Cost	\$3,280,873
Unfunded Actuarial Accrued Liability	
Actuarial Accrued Liability	70,757,863
Assets	<u>82,262,382</u>
Unfunded Actuarial Accrued Liability	(11,504,519)
Amortization	
Period (years)	10
Amount	0
Interest to December 31, 2020	213,257
Actuarially Determined Contribution*	\$3,494,130
Sum of Normal Cost, Amortization, and Interest	

* Calculated using actuarial assumptions as of the end of the fiscal year, which are the same assumptions used to determine the Net OPEB Liability (6.50% discount rate, updated mortality improvement, and no excise tax or health insurer fee on healthcare cost trend rates).

Statement of Fiduciary Net Position

	<u>December 31, 2019</u>	<u>December 31, 2020</u>
Assets		
Cash and cash equivalents	\$860,304	\$1,846,537
Receivables and prepaid expenses:		
Receivable contributions	0	0
Receivable investment income	0	0
Receivables from brokers for unsettled trades	0	0
Prepaid expenses	0	0
Total receivables	0	0
Investments:		
Fixed income	36,969,780	41,057,621
Stocks	31,306,888	36,716,965
Short-term investments	0	0
Real estate	4,404,862	4,739,025
Alternative investments	8,720,548	10,788,103
Total investments	81,402,078	93,301,714
Invested securities lending cash collateral	0	0
Capital assets net of accumulated depreciation	0	0
Total assets	82,262,382	95,148,251
Liabilities		
Accrued expenses and benefits payable	0	0
Securities lending cash collateral	0	0
Payable to brokers for unsettled trades	0	0
Total liabilities	0	0
Net position restricted for postemployment benefits other than pensions	\$82,262,382	\$95,148,251

Statement of Changes in Fiduciary Net Position

December 31, 2020

Additions

Member contributions	\$0
Employer contributions	5,431,444
Total contributions	5,431,444
Investment income (loss):	
Interest	0
Dividends	0
Equity fund income, net	0
Net increase in fair value of investments	10,316,708
Securities lending income	0
Less investment expenses:	
Direct investment expense	281,526
Securities lending management fees	0
Securities lending borrower rebates	0
Net investment income	10,035,182
Other income	0
Total additions	15,466,626

Deductions

Service benefits	2,519,261
Disability benefits	N/A
Death benefits	N/A
Refunds of member contributions	N/A
Administrative expenses	61,496
Total deductions	2,580,757
Net increase (decrease)	12,885,869

Net position restricted for postemployment benefits other than pensions

Beginning of year (December 31, 2019)	82,262,382
End of year (December 31, 2020)	\$95,148,251

Money-Weighted Rate of Return

Fiscal Year Ending December 31	Net Money-Weighted Rate of Return
2011	N/A
2012	N/A
2013	N/A
2014	N/A
2015	N/A
2016	10.50%
2017	10.90%
2018	-5.80%
2019	16.61%
2020	11.98%

Calculation of Money-Weighted Rate of Return

The money-weighted rate of return considers the changing amounts actually invested during a period and weights the amount of plan investments by the proportion of time they are available to earn a return during that period. External cash flows are determined on a monthly basis and are assumed to occur at the beginning of each month. External cash inflows are netted with external cash outflows, resulting in a net external cash flow in each month. The money-weighted rate of return is calculated net of investment expenses.

	Net External Cash Flows	Periods Invested	Period Weight	Net External Cash Flows With Interest
Beginning Value - January 1, 2020	\$82,262,382	12.00	1.00	\$92,115,801
Monthly net external cash flows:				
July	237,557	12.00	1.00	266,012
August	237,557	11.00	0.92	263,615
September	237,557	10.00	0.83	260,945
October	237,557	9.00	0.75	258,594
November	237,557	8.00	0.67	256,264
December	237,557	7.00	0.58	253,668
January	237,557	6.00	0.50	251,382
February	237,557	5.00	0.42	249,117
March	237,557	4.00	0.33	246,594
April	237,557	3.00	0.25	244,372
May	237,557	2.00	0.17	242,170
June	237,557	1.00	0.08	239,717
Ending Value - December 31, 2020	95,148,251			95,148,251
Money-Weighted Rate of Return				11.98%

Long-Term Expected Rate of Return

The assumption for the long-term expected rate of return is determined by adding expected inflation to expected long-term real returns and reflecting expected volatility and correlation. The capital market assumptions are per Milliman's investment consulting practice as of June 30, 2020 and are based on a 20-year investment horizon.

Asset Class	Index	Target Allocation	Long-Term Expected Arithmetic Real Rate of Return	Long-Term Expected Geometric Real Rate of Return
US Long Bonds	Barclays LT Gvt/Credit	20.00%	2.45%	1.98%
US Gvt Bonds	Barclays Gvt	20.00%	1.34%	1.21%
Emerging Markets Bonds	JPM EMBI Plus	5.00%	3.48%	2.54%
US Large Caps	S&P 500	15.00%	4.29%	3.13%
US Large & Mid Caps	Russell 1000	7.50%	4.49%	3.27%
US Small Caps	Russell 2000	10.00%	5.50%	3.62%
Foreign Developed Equity	MSCI EAFE NR	7.50%	5.50%	3.91%
US REITs	FTSE NAREIT Equity REIT	5.00%	5.01%	3.27%
Master Limited Partnerships	Alerian MLP	10.00%	4.18%	2.83%

Assumed Inflation - Mean	2.20%	2.20%
Assumed Inflation - Standard Deviation	2.02%	2.02%
Portfolio Real Mean Return	3.40%	2.98%
Portfolio Nominal Mean Return	5.61%	5.24%
Portfolio Standard Deviation		9.08%
Long-Term Expected Rate of Return		6.25%

Depletion Date Projection

GASB 74 and 75 generally require that a blended discount rate be used to measure the Total OPEB Liability (the Actuarial Accrued Liability calculated using the Individual Entry Age Normal Cost Method). The long-term expected return on plan investments may be used to discount liabilities to the extent that the plan's Fiduciary Net Position (fair market value of assets) is projected to cover benefit payments and administrative expenses. A 20-year high quality (AA/Aa or higher) municipal bond yield or index rate must be used for periods where the Fiduciary Net Position is not projected to cover benefit payments and administrative expenses. Determining the discount rate under GASB 74 and 75 will often require that the actuary perform complex projections of future benefit payments and asset values. GASB 74 and 75 (paragraph 29) do allow for alternative evaluations of projected solvency, if such evaluation can reliably be made. GASB does not contemplate a specific method for making an alternative evaluation of sufficiency; it is left to professional judgment.

The following circumstances justify an alternative evaluation of sufficiency for the Port of Houston Authority:

- The Port of Houston Authority has at least a 5-year history of paying at least 100% of the Actuarially Determined Contribution (previously termed the Annual Required Contribution).
- The Actuarially Determined Contribution is based on a closed amortization period, which means that payment of the Actuarially Determined Contribution each year will bring the plan to a 100% funded position by the end of the amortization period.
- GASB 74 and 75 specify that the projections regarding future solvency assume that plan assets earn the assumed rate of return and there are no future changes in the plan provisions or actuarial methods and assumptions, which means that the projections would not reflect any adverse future experience which might impact the plan's funded position.

Based on these circumstances, it is our professional opinion that the detailed depletion date projections outlined in GASB 74 and 75 will show that the Fiduciary Net Position is always projected to be sufficient to cover benefit payments and administrative expenses.

Net OPEB Liability

Net OPEB Liability	<u>December 31, 2019</u>	<u>December 31, 2020</u>
Total OPEB liability	\$70,757,863	\$65,501,897
Fiduciary net position	82,262,382	95,148,251
Net OPEB liability	(11,504,519)	(29,646,354)
Fiduciary net position as a % of total OPEB liability	116.26%	145.26%
Covered payroll	49,778,058	49,778,058
Net OPEB liability as a % of covered payroll	-23.11%	-59.56%

The total OPEB liability was determined by an actuarial valuation as of the valuation date, calculated based on the discount rate and actuarial assumptions below, and was then projected forward to the measurement date. Any significant changes during this period have been reflected as prescribed by GASB 74 and 75.

Discount Rate

Discount rate	6.50%	6.25%
Long-term expected rate of return, net of investment expense	6.50%	6.25%
Municipal bond rate	N/A	N/A

The plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the discount rate for calculating the total OPEB liability is equal to the long-term expected rate of return.

Other Key Actuarial Assumptions

The actuarial assumptions that determined the total OPEB liability as of December 31, 2020 were based on the results of an actuarial experience study for the period August 1, 2014 - August 1, 2019.

Valuation date	January 1, 2019	January 1, 2019
Measurement date	December 31, 2019	December 31, 2020
Actuarial cost method	Entry Age Normal	Entry Age Normal
Inflation	2.20%	2.20%
Mortality	RP-2006 Mortality for Employees, Healthy Annuitants, and Disabled Annuitants with generational projection per Scale MP-2018	Pri-2012 Mortality for Employees, Healthy Annuitants, and Disabled Annuitants with generational projection per Scale MP-2019
Salary increases including inflation	Age based	Age based

Please see the appendices of this report for more detail.

Changes in Net OPEB Liability

Changes in Net OPEB Liability	Increase (Decrease)		
	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (a) - (b)
Balances as of December 31, 2019	\$70,757,863	\$82,262,382	(\$11,504,519)
Changes for the year:			
Service cost	3,210,903		3,210,903
Interest on total OPEB liability	4,727,383		4,727,383
Effect of plan changes	0		0
Effect of economic/demographic gains or losses	0		0
Effect of assumptions changes or inputs	(10,674,991)		(10,674,991)
Benefit payments	(2,519,261)	(2,519,261)	0
Employer contributions		5,431,444	(5,431,444)
Member contributions		0	0
Net investment income		10,035,182	(10,035,182)
Administrative expenses		(61,496)	61,496
Balances as of December 31, 2020	65,501,897	95,148,251	(29,646,354)

Sensitivity Analysis

The following presents the net OPEB liability of the Port of Houston, calculated using the discount rate of 6.25%, as well as what the Port of Houston's net OPEB liability would be if it were calculated using a discount rate that is 1 percentage point lower (5.25%) or 1 percentage point higher (7.25%) than the current rate.

	Current		
	1% Decrease 5.25%	Discount Rate 6.25%	1% Increase 7.25%
Total OPEB liability	\$74,330,028	\$65,501,897	\$58,231,415
Fiduciary net position	95,148,251	95,148,251	95,148,251
Net OPEB liability	(20,818,223)	(29,646,354)	(36,916,836)

The following presents the net OPEB liability of the Port of Houston, calculated using the current healthcare cost trend rates as well as what the Port of Houston's net OPEB liability would be if it were calculated using trend rates that are 1 percentage point lower or 1 percentage point higher than the current trend rates.

	Current		
	1% Decrease	Trend Rate	1% Increase
Total OPEB liability	\$56,430,410	\$65,501,897	\$76,952,011
Fiduciary net position	95,148,251	95,148,251	95,148,251
Net OPEB liability	(38,717,841)	(29,646,354)	(18,196,240)

Schedule of Changes in Net OPEB Liability and Related Ratios
(in 1,000s)

	Fiscal Year Ending December 31									
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Total OPEB Liability										
Service cost	\$3,211	\$3,081	\$3,289	\$3,081	N/A	N/A	N/A	N/A	N/A	N/A
Interest on total OPEB liability	4,727	5,145	4,864	4,593	N/A	N/A	N/A	N/A	N/A	N/A
Effect of plan changes	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Effect of economic/demographic (gains) or losses	0	(7,445)	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Effect of assumption changes or inputs	(10,675)	(1,408)	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Benefit payments	(2,519)	(3,464)	(4,084)	(3,654)	N/A	N/A	N/A	N/A	N/A	N/A
Net change in total OPEB liability	(5,256)	(4,091)	4,069	4,020	N/A	N/A	N/A	N/A	N/A	N/A
Total OPEB liability, beginning	70,758	74,849	70,779	66,759	N/A	N/A	N/A	N/A	N/A	N/A
Total OPEB liability, ending (a)	65,502	70,758	74,849	70,779	N/A	N/A	N/A	N/A	N/A	N/A
Fiduciary Net Position										
Employer contributions	\$5,431	\$8,464	\$9,484	\$9,454	N/A	N/A	N/A	N/A	N/A	N/A
Member contributions	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Net Investment income	10,035	11,391	(3,915)	5,714	N/A	N/A	N/A	N/A	N/A	N/A
Benefit payments	(2,519)	(3,464)	(4,084)	(3,654)	N/A	N/A	N/A	N/A	N/A	N/A
Administrative expenses	(61)	(93)	(100)	0	N/A	N/A	N/A	N/A	N/A	N/A
Net change in plan fiduciary net position	12,886	16,298	1,385	11,514	N/A	N/A	N/A	N/A	N/A	N/A
Fiduciary net position, beginning	82,262	65,964	64,579	53,066	N/A	N/A	N/A	N/A	N/A	N/A
Fiduciary net position, ending (b)	95,148	82,262	65,964	64,579	N/A	N/A	N/A	N/A	N/A	N/A
Net OPEB liability, ending = (a) - (b)	(\$29,646)	(\$11,505)	\$8,884	\$6,200	N/A	N/A	N/A	N/A	N/A	N/A
Fiduciary net position as a % of total OPEB liability	145.26%	116.26%	88.13%	91.24%	N/A	N/A	N/A	N/A	N/A	N/A
Covered payroll	\$49,778	\$49,778	\$40,287	\$40,287	\$38,907	\$38,907	\$33,690	\$34,615	\$34,939	\$34,939
Net OPEB liability as a % of covered payroll	-59.56%	-23.11%	22.05%	15.39%	N/A	N/A	N/A	N/A	N/A	N/A

This schedule is presented to illustrate the requirement to show information for 10 years. However, recalculations of prior years are not required, and if prior years are not reported in accordance with the current GASB standards, they should not be reported.

Schedule of Port of Houston Contributions
(in 1,000s)

	Fiscal Year Ending December 31									
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Actuarially Determined Contribution*	\$3,494	\$3,324	\$4,384	\$5,402	\$5,798	\$5,537	\$6,568	\$6,909	\$7,913	\$8,115
Contributions in relation to the										
Actuarially Determined Contribution	5,431	8,464	9,484	9,454	8,772	11,203	11,363	11,226	10,776	10,536
Contribution deficiency/(excess)	(1,937)	(5,139)	(5,100)	(4,053)	(2,974)	(5,666)	(4,795)	(4,318)	(2,863)	(2,421)
Effect of assumption changes or inputs										
Covered payroll	49,778	49,778	40,287	40,287	38,907	38,907	33,690	34,615	34,939	34,939
Contributions as a percentage of										
covered payroll	10.91%	17.00%	23.54%	23.47%	22.55%	28.79%	33.73%	32.43%	30.84%	30.15%

* Annual Required Contribution (ARC) under GASB 45 for 2017 and prior.

This schedule is presented to illustrate the requirement to show information for 10 years. However, recalculations of prior years are not required, and if prior years are not reported in accordance with the current GASB standards, they should not be reported.

OPEB Expense

OPEB Expense	January 1, 2019 to December 31, 2019	January 1, 2020 to December 31, 2020
Service cost	\$3,080,632	\$3,210,903
Interest on total OPEB liability	5,145,247	4,727,383
Effect of plan changes	0	0
Administrative expenses	93,144	61,496
Member contributions	0	0
Expected investment return net of investment expenses	(4,615,506)	(5,438,244)
Recognition of Deferred Inflows/Outflows of Resources		
Recognition of economic/demographic gains or losses	(1,063,544)	(1,063,544)
Recognition of assumption changes or inputs	(201,180)	(1,869,147)
Recognition of investment gains or losses	334,866	(584,522)
OPEB Expense	2,773,659	(955,675)

As of December 31, 2020, the deferred inflows and outflows of resources are as follows:

Deferred Inflows / Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources
Differences between expected and actual experience	(\$5,317,719)	\$0
Changes of assumptions	(10,012,922)	0
Net difference between projected and actual earnings	(7,742,867)	3,379,944
Contributions made subsequent to measurement date	0	0
Total	(23,073,508)	3,379,944

Amounts currently reported as deferred outflows of resources and deferred inflows of resources related to other postemployment benefits will be recognized in OPEB expense as follows:

Year ended December 31:	
2021	(\$3,517,213)
2022	(3,517,211)
2023	(5,207,186)
2024	(3,852,077)
2025	(2,932,688)
Thereafter*	(667,189)

* Note that additional future deferred inflows and outflows of resources may impact these numbers.

Schedule of Deferred Inflows and Outflows of Resources

	Original Amount	Date Established	Original Rec. Period*	Amount Recognized in Expense for FYE 12/31/2020	Amount Recognized in Expense through 12/31/2020	Balance of Deferred Inflows 12/31/2020	Balance of Deferred Outflows 12/31/2020
Economic/ demographic (gains)/losses	\$0	12/31/2020	0.0	0	0	0	0
	(\$7,444,807)	12/31/2019	7.0	(\$1,063,544)	(\$2,127,088)	(\$5,317,719)	\$0
		Total		(1,063,544)	(2,127,088)	(5,317,719)	0
Assumption changes or inputs	(10,674,991)	12/31/2020	6.4	(1,667,967)	(1,667,967)	(9,007,024)	0
	(1,408,258)	12/31/2019	7.0	(201,180)	(402,360)	(1,005,898)	0
		Total		(1,869,147)	(2,070,327)	(10,012,922)	0
Investment (gains)/losses	(4,596,938)	12/31/2020	5.0	(919,388)	(919,388)	(3,677,550)	0
	(6,775,527)	12/31/2019	5.0	(1,355,105)	(2,710,210)	(4,065,317)	0
	8,449,857	12/31/2018	5.0	1,689,971	5,069,913	0	3,379,944
		Total		(584,522)	1,440,315	(7,742,867)	3,379,944
Total for economic/demographic gains or losses and assumption changes or inputs						(15,330,641)	0
Net deferred (inflows)/outflows for investment gains or losses						(4,362,923)	0
Total deferred (inflows)/outflows						(19,693,564)	0
Total net deferrals						(19,693,564)	

* Investment (gains)/losses are recognized in OPEB expense over a period of five years; economic/demographic (gains)/losses and assumption changes or inputs are recognized over the average remaining service life for all active and inactive members.

Milliman Financial Reporting Valuation

Summary Chart

	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability	Deferred Inflows	Deferred Outflows	Net Investment (Inflows)/ Outflows	Net Deferrals	Net OPEB Liability plus Net Deferrals	Annual Expense
Balances as of December 31, 2019	(\$70,757,863)	\$82,262,382	\$11,504,519	(\$7,588,341)	\$0	(\$350,507)	(\$7,938,848)	\$3,565,671	
Service cost	(3,210,903)		(3,210,903)						3,210,903
Interest on total OPEB liability	(4,727,383)		(4,727,383)						4,727,383
Effect of plan changes	0		0						0
Effect of liability gains or losses	0		0				0		
Effect of assumption changes or inputs	10,674,991		10,674,991				(10,674,991)		
Benefit payments	2,519,261	(2,519,261)	0	(10,674,991)					
Administrative expenses		(61,496)	(61,496)						61,496
Member contributions		0	0						0
Expected net investment income		5,438,244	5,438,244						(5,438,244)
Investment gains or losses		4,596,938	4,596,938			(4,596,938)	(4,596,938)		
Employer contributions		5,431,444	5,431,444					5,431,444	
Recognition of liability gains or losses				1,063,544			1,063,544		(1,063,544)
Recognition of assumption changes or inputs				1,869,147			1,869,147		(1,869,147)
Recognition of investment gains or losses						584,522	584,522		(584,522)
Annual expense								955,675	(955,675)
Balances as of December 31, 2020	(65,501,897)	95,148,251	29,646,354	(15,330,641)	0	(4,362,923)	(19,693,564)	9,952,790	

Port of Houston Authority Post-Retirement Medical Plan

This work product was prepared solely for the Port of Houston for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

Glossary

Actuarially Determined Contribution	A target or recommended contribution to a defined benefit OPEB plan for the reporting period, determined based on the funding policy and most recent measurement available when the contribution for the reporting period was adopted.
Deferred Inflows/Outflows of Resources	Portion of changes in net OPEB liability that is not immediately recognized in OPEB Expense. These changes include differences between expected and actual experience, changes in assumptions, and differences between expected and actual earnings on plan investments.
Discount Rate	Single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the sum of: <ol style="list-style-type: none">1) The actuarial present value of benefit payments projected to be made in future periods where the plan assets are projected to be sufficient to meet benefit payments, calculated using the Long-Term Expected Rate of Return.2) The actuarial present value of projected benefit payments not included in (1), calculated using the Municipal Bond Rate.
Fiduciary Net Position	Equal to market value of assets.
Long-Term Expected Rate of Return	Long-term expected rate of return on plan investments expected to be used to finance the payment of benefits, net of investment expenses.
Money-Weighted Rate of Return	The internal rate of return on plan investments, net of investment expenses.
Municipal Bond Rate	Yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher.
Net OPEB Liability	Total OPEB Liability minus the Plan's Fiduciary Net Position.
Projected Benefit Payments	All benefits estimated to be payable through the OPEB plan to current active and inactive employees as a result of their past service and expected future service.
Service Cost	The portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
Total OPEB Liability	The portion of actuarial present value of projected benefit payments that is attributable to past periods of member service using the Entry Age Normal cost method based on the requirements of GASB 74 and 75.

Appendix A. Actuarial Cost Method and Assumptions

The actuarial cost method used for determining the benefit obligations is the Entry Age Normal Cost Method. Under this method, a projected retirement benefit at assumed retirement age is computed for each participant using anticipated future pay increases. The normal cost for each participant is computed as the level percentage of pay, which if paid from each participant's date of employment by the employer or any predecessor employer (thus, entry age) to his assumed retirement date, would accumulate with interest at the rate assumed in the valuation to an amount sufficient to fund his projected retirement benefit. The normal cost for the plan is the total of the individually computed normal costs for all participants including the costs for any death or disability benefits under the plan.

The accrued liability at any point in time for an active participant is the theoretical fund that would have been accumulated on his behalf from his normal cost payments and the earnings thereon for all prior years if the plan had always been in effect. For persons receiving benefits or entitled to a deferred vested retirement income, the accrued liability cost is equal to the present value of their future benefit payments. The accrued liability for the plan is the total of the individually computed accrued liability for all participants. The unfunded accrued liability for the plan is the excess of the accrued liability over the assets which have been accumulated for the plan.

It should be noted that the accrued liability as of any date is not the actuarially computed present value of accrued or accumulated plan benefits as of that date. The accrued liability is the portion of the ultimate cost assigned to prior years by the cost method being used.

Economic Assumptions

Discount Rate

December 31, 2019: 6.50% effective annual rate

December 31, 2019: 6.25% effective annual rate.

The discount rate is based on the expected long term return on assets as selected by the employer.

Salary Increases

Age	Rate
20	10.0%
25	7.3%
30	6.8%
35	5.2%
40	4.2%
45	4.5%
50	4.5%
55	3.7%
60	3.7%
65	2.7%

Inflation

2.20% per annum, compounded annually

Demographic Assumptions

Based on the experience study conducted in 2020 for the Port of Houston Authority Restated Retirement Plan, withdrawal rates, retirement rates, disability rates, base-table mortality rates, and salary scale are used in this valuation to determine liabilities and costs.

Healthy Mortality

For Salaried participants, Pri-2012 White Collar Mortality Table projected with Scale MP-2019 for males and females. For Hourly participants, Pri-2012 Blue Collar Mortality Table projected with Scale MP-2019 for males and females. Adopted December 31, 2020.

Disabled Mortality

Pri-2012 Disabled Mortality Table projected with Scale MP-2019 for males and females. Adopted December 31, 2020.

Disability Rates

Selected rates are as follows. Rates vary by age and gender.

Male		Female	
Age	Rate	Age	Rate
20	0.10%	20	0.17%
25	0.11%	25	0.18%
30	0.12%	30	0.19%
35	0.13%	35	0.21%
40	0.16%	40	0.26%
45	0.25%	45	0.39%
50	0.47%	50	0.77%
55	0.94%	55	1.46%
60	1.38%	60	2.24%

Retirement Rates

Rates are as follows. Rates vary by age.

Age	Rate	
	<30 Years	30+ Years
55	0%	30%
56-57	0%	5%
58	0%	5%
59	0%	10%
60-61	0%	20%
62	10%	25%
63-64	5%	25%
65-69	30%	30%
70+	100%	100%

Withdrawal Rates

Selected rates are as follows. Rates vary by service.

Service	Rate
0-2	10.00%
3	7.50%
4-8	5.00%
9-14	2.00%
15-16	4.00%
17-18	2.00%
19-21	1.00%
22	2.00%
30+	0.00%

Coverage at Retirement

100% of active employees are assumed to elect coverage in retirement. Pre-65 retirees are assumed to be covered and are valued based on a weighted claims curve (claims curve is weighted for current retirees' elections in AETNA Open Access plan and Kelsey Care plan). Post-65 retirees are assumed to be covered in the AETNA Medicare Choice PPO 20/20 Plan.

Current retirees are assumed to continue to elect current medical plan election.

Spouse Coverage

80% of employees are assumed to have a covered spouse in retirement (no dependent children are assumed). Current retirees electing medical coverage who have a spouse date of birth on file are assumed to pick up spouse coverage immediately (despite current medical election).

Spouse Age

If spouse age is not available, female spouses are assumed to be three years younger than male spouses.

Hourly / Salaried Indicator

Participants missing an hourly / salaried indicator are assumed to have been salaried employees.

Per Capita Medical Benefit Costs

**Annual Medical Claims Costs at Sample Ages
Pre-65 (74% AETNA Open Access, 26% Kelsey Care)**

Age	Retiree		Spouse	
	Male	Female	Male	Female
45	\$15,537	\$21,225	\$12,717	\$14,417
50	\$15,367	\$18,394	\$13,845	\$15,776
55	\$16,399	\$17,480	\$15,723	\$17,255
60	\$19,649	\$19,303	\$18,659	\$18,982
64	\$24,407	\$22,031	\$22,661	\$21,023

**Annual Medical Claims Costs at Sample Ages
AETNA Medicare Choice 20/20 PPO: Pre-65 Disability, Post-65 Medicare**

Age	Retiree		Spouse	
	Male	Female	Male	Female
45	\$1,353	\$1,848	\$840	\$988
50	\$1,338	\$1,602	\$937	\$1,106
55	\$1,428	\$1,522	\$1,101	\$1,235
60	\$1,711	\$1,681	\$1,356	\$1,385
64	\$2,125	\$1,918	\$1,703	\$1,562
65	\$1,992	\$1,930	\$1,992	\$1,930
70	\$2,410	\$2,233	\$2,410	\$2,233
75	\$2,859	\$2,578	\$2,859	\$2,578
80	\$3,277	\$2,918	\$3,277	\$2,918
85	\$3,727	\$3,307	\$3,727	\$3,307
90	\$4,146	\$3,679	\$4,146	\$3,679

**Annual Medical Claims Costs at Sample Ages
AETNA Medicare ESA PPO 20: Post-65 Medicare**

Age	Retiree		Spouse	
	Male	Female	Male	Female
65	\$2,135	\$2,068	\$2,135	\$2,068
70	\$2,583	\$2,393	\$2,583	\$2,393
75	\$3,064	\$2,763	\$3,064	\$2,763
80	\$3,512	\$3,128	\$3,512	\$3,128
85	\$3,994	\$3,544	\$3,994	\$3,544
90	\$4,444	\$3,943	\$4,444	\$3,943

COVID-19 Pandemic

While it is possible that the COVID-19 pandemic could have a material impact on future costs, we have determined that there is not sufficient information at this time to reflect any changes in this year's disclosure calculations. We will continue to monitor this and if events occur that are both substantial and that can be predicted with reasonable certainty, then we will reflect these changes and expectations in future calculations.

The plan's assumptions are based on long-term expectations. Even if the plan is materially impacted in the short-term due to an event, we cannot determine if it will have an ongoing effect to warrant a change in assumptions.

Inactive participants are primarily impacted by the mortality assumption, which is based on Society of Actuaries' published mortality tables and projected scales. Unless there is a specific event that impacts the plans' populations differently than the rest of the United States, mortality due to any event will be incorporated in future mortality tables and projection scales published by the Society of Actuaries once the mortality data is received and analyzed by the Society of Actuaries.

ASOP 56 Modeling

ASOP 56 provides guidance to actuaries in respect to the development and involvement of models used in their actuarial services. The signing actuary should have a limited ability either to obtain information about the model or to understand the underlying workings of the model. Certain disclaimers and disclosures are required whenever particular models or field experts are relied upon.

The valuation results were developed using models intended for valuations that use standard actuarial techniques.

Healthcare Inflation Rate

Long term trend rates are developed for the group based on the results of a Society of Actuaries (SOA) study that contains a structured approach to projecting long-term healthcare trends, and a corresponding model (the Getzen model). Milliman has developed an add-on to the Getzen model that adjusts for aging, administrative trend, deductible leveraging, and other deviations based on internal research. Our resulting health care inflation rate assumption is shown on the next page.

The president signed into law a bill Senate Amendment to H.R. 1865, Further Consolidated Appropriations Act, 2020, on Friday, December 20, 2019 to fund the federal government through fiscal year 2020.

This bill includes the repeal of three health related taxes established by the ACA. They include:

1. The health insurance providers fee (also known as the health insurance tax)
2. The medical device excise tax
3. The excise tax on high-cost employer health plans (also known as the Cadillac tax)

Although the Cadillac tax has been twice delayed, it was scheduled to go into effect in 2022. The medical device excise tax was scheduled to expire on December 31, 2019. The health insurance providers fee had a moratorium placed on it during 2019, will go back into effect in 2020, and will be eliminated permanently beginning in 2021.

Milliman Financial Reporting Valuation

Year	<i>To Determine Net OPEB Liability</i> Without Excise Tax and Health Insurer Fee			<i>To Determine OPEB Expense</i> With Excise Tax and Health Insurer Fee		
	Pre-65 No Medicare	Post-65 PPO Medicare	Post-65 ESA Medicare	Pre-65 No Medicare	Post-65 PPO Medicare	Post-65 ESA Medicare
2019	3.90%	12.00%	7.90%	3.90%	12.00%	7.90%
2020	4.30%	5.40%	2.30%	4.30%	8.00%	5.10%
2021	4.70%	6.60%	5.10%	7.90%	6.60%	5.10%
2022	5.10%	5.20%	5.20%	6.00%	5.20%	5.20%
2023	5.00%	5.10%	5.10%	5.90%	5.10%	5.10%
2024	4.90%	5.00%	5.00%	5.80%	5.00%	5.00%
2025	4.80%	4.90%	4.90%	5.70%	4.90%	4.90%
2026	4.80%	4.80%	4.80%	5.60%	4.80%	4.80%
2027	4.70%	4.70%	4.70%	5.40%	4.70%	4.70%
2028 - 2034	4.60%	4.70%	4.70%	5.30%	4.70%	4.70%
2035 - 2037	4.70%	4.70%	4.70%	5.30%	4.70%	4.70%
2038 - 2043	4.70%	4.80%	4.80%	5.30%	4.80%	4.80%
2044 - 2047	4.80%	4.80%	4.80%	5.20%	4.80%	4.80%
2048 - 2049	4.80%	4.90%	4.90%	5.20%	4.90%	4.90%
2050	4.70%	4.80%	4.80%	5.10%	4.80%	4.80%
2051 - 2052	4.70%	4.70%	4.70%	5.10%	4.70%	4.70%
2053 - 2055	4.60%	4.70%	4.70%	5.00%	4.70%	4.70%
2056 - 2062	4.60%	4.60%	4.60%	4.90%	4.60%	4.60%
2063 - 2064	4.50%	4.60%	4.60%	4.80%	4.60%	4.60%
2065	4.40%	4.50%	4.50%	4.70%	4.50%	5.40%
2066	4.40%	4.40%	4.40%	4.60%	4.40%	5.30%
2067	4.30%	4.30%	4.30%	4.50%	4.30%	5.10%
2068	4.20%	4.20%	4.20%	4.40%	4.20%	5.00%
2069	4.10%	4.20%	4.20%	4.30%	4.90%	4.90%
2070	4.10%	4.10%	4.10%	4.30%	4.90%	4.80%
2071	4.00%	4.00%	4.00%	4.20%	4.80%	4.70%
2072	3.90%	4.00%	4.00%	4.10%	4.70%	4.60%
2073	3.90%	3.90%	3.90%	4.00%	4.60%	4.50%
2074+	3.80%	3.80%	3.80%	4.00%	4.50%	4.40%

Appendix B. Summary of Benefits

The following description of retiree health benefits is intended to be only a brief summary. For details, reference should be made to the 2019 Employee Retirement Guide for the Port of Houston.

Eligibility

For employees hired prior to January 1, 2010, retiree medical insurance coverage is provided with no years of service requirement. For employees hired on or after January 1, 2010, retiree medical insurance coverage is available after 12 years of service upon retirement. Retirees and eligible dependents over the age of 65, or disabled retirees or dependents who qualify for Social Security disability benefits, must have Medicare Part A and Part B to be eligible for any Port Authority medical plans.

Dependent Eligibility

Spouses of eligible retirees at the time of retirement are eligible for coverage as well.

Health Benefits

Pre-65 eligible retirees and spouses may choose between the AETNA Open Access plan and the Kelsey Care plan. Post-65 retirees and spouses may choose between the AETNA Medicare Choice 20/20 PPO and the AETNA Medicare ESA PPO 20 plans.

Retiree Contributions

Retirees pay 0% of the total premium and the Port Authority pays 100%. For spouses of eligible retirees, the retiree or spouse pays 0% of the total premium and the Port Authority pays 100% of the premium.

Current monthly premiums are illustrated below (**paid in full by Houston Port Authority**):

Category	Retiree	Retiree plus Spouse
Under age 65		
KelseyCare HMO	\$701.53	\$2,276.08
AETNA PPO	\$771.67	\$2,503.67
Over age 65 (varies by state)		
AETNA PPO Texas	\$216.07	\$432.14
AETNA PPO-ESA Texas	\$300.80	\$601.60

Retiree Life Insurance

\$15,000 payable upon death of retiree.

Appendix C. Summary of Participant Data

The following were included in our analysis as of January 1, 2019 based on information provided by the Port of Houston Authority.

Number of members	
Actives	644
Retired and disabled members	319
Beneficiaries	31
Covered spouses of retirees*	<u>178</u>
Total	1,172

Average age	
Active	45.8
Retired members	73.5
Disabled members	60.9
Beneficiaries	76.6

*As of January 1, 2019, actual medical elections include 139 covered spouses.