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# Port of Houston Authority Restated Retirement Plan

## August 1, 2023 Actuarial Valuation

**Prepared by:**

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Issued November 1, 2023

This work product was prepared solely for the Port of Houston Authority 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.

## August 1, 2023 Actuarial Valuation of the Port of Houston Authority Restated Retirement Plan

As part of our engagement with Port of Houston Authority (the “Plan Sponsor”), we performed an actuarial valuation of the Port of Houston Authority Restated Retirement Plan (the “Plan”) as of August 1, 2023, for the Plan Year ending July 31, 2024. Our findings are set forth in this actuary’s report. The valuation results are based on the actuarial assumptions and methodology ([Appendix A](#)) and principal plan provisions ([Appendix B](#)) summarized in the appendices. In addition, [Appendix C](#) contains general rules regarding required funding contributions and [Appendix D](#) contains a description of the maximum deductible contribution limit. [Appendix E](#) contains a glossary of actuarial terms. [Appendix F](#) contains funding policy documentation and [Appendix G](#) contains information about the Plan’s risks. The Table of Contents lists the supporting schedules (Exhibits) which were prepared to support the results presented in the Executive Summary.

### Purpose of the Valuation

The main purposes of this report are:

- to provide the Funding Policy Contribution for the fiscal year ending July 31, 2024,
- to review the experience under the plan for the valuation year ending July 31, 2023; and
- to assess the funded position of the plan.

Actuarial computations presented in this report are for the purposes of determining the recommended funding amounts for the Plan. The calculations in the enclosed report have been made on a basis consistent with our understanding of the Plan’s funding policy. The calculations in this report have been made on a basis consistent with our understanding of the plan provisions described in [Appendix B](#) of this report. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

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 valuations.

### Funding Objective

The Plan’s funding objective is to receive each year the funding policy contribution from the Plan Sponsor. Annual contributions from the Plan Sponsor will change due to actuarial assumptions, investment returns and census changes being different from expected.

### Meeting the Funding Objective

The Plan is meeting its funding objective as it continues to receive the funding policy contribution from the Plan Sponsor. Any decreases in year-to-year funded status were the result of experience losses and/or changes in assumptions. The funded status of the Plan for the last five years is as follows:

Plan Year	2019	2020	2021	2022	2023
Funded Status	92.9%	93.4%	107.6%	89.4%	91.4%

## Actuarial Assumptions

The policies, methods, and assumptions used in this valuation are described in [Appendix A](#) of this report. The Plan is solely responsible for communicating to Milliman any changes required thereto. All costs, liabilities, rates of interest, and other factors for the Plan have been determined on the basis of actuarial assumptions and methods which, in our professional opinion, are individually reasonable (taking into account the experience of the Plan and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated future experience affecting the Plan and are expected to have no significant bias.

## Variability of Results

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 modifications to contribution calculations 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 future measurements. The Plan Sponsor has the final decision regarding the selection of the assumptions and actuarial cost methods and has adopted them as indicated in [Appendix A](#).

## Reliance

In preparing the funding policy report, we relied, without audit, on information (some oral and some in writing) supplied by the Plan Sponsor and the Plan's Trustees. This information includes, but is not limited to, plan documents and provisions, member census data, and financial information. We found this information 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.

## Limited Distribution

Milliman's work is prepared solely for the use and benefit of the Plan Sponsor. 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:

- 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 Plan.
- 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 own specific needs.

## Models

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

## Qualifications and Certification

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 actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

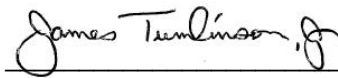
On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the principles prescribed by the Actuarial Standards Board and the Code of Professional Conduct and Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States, published by the American Academy of Actuaries. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

We respectfully submit this report, and we look forward to discussing it with you.



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Jake Pringle  
MAAA



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James Tumlinson, Jr.  
MAAA

Issued November 1, 2023

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# Executive Summary

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August 1, 2023 Actuarial Valuation

Port of Houston Authority Restated Retirement Plan

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## A. Purpose of this Report

The annual actuarial valuations of the Plan are intended to accomplish several purposes including:

- In general, the determination of current levels of employer contributions which, considering prior funding, will accumulate monies sufficient to meet benefit payments when due under the terms of the Plan.
- More specifically, the determination of the minimum suggested contribution for the current Plan Year.
- Preparation of information pertaining to the operation of the Plan which is required either for inclusion in financial statements.
- Review of plan experience for the year ended on the day before the valuation date to ascertain whether the assumptions and methods employed for valuation purposes are reflective of actual events and remain appropriate for prospective application.
- Assessment of the relative funded position of the Plan, i.e., through a comparison of plan assets and projected plan liabilities.

## B. Overview of the Report

Our objective in preparing this report is to disclose our findings in a full, clear and meaningful form. To this end we have divided the report into three major sections, a Report Summary, Exhibits, and Appendices.

The Report Summary presents the contribution alternatives, summarizes the valuation results, and discusses the current status of the Plan in light of past experience and future expectations.

The Exhibits provide detailed numerical information concerning the valuation results and the data upon which the results are based.

The Appendices provide a description of the actuarial cost method, summarize actuarial assumptions and valuation procedures, and detail the principal provisions of the Plan upon which the valuation is based. This section also includes other relevant information of a general nature.

## C. Actuarial Assumptions

The results shown herein assume a 6.00% long term rate of return, which has been selected by the plan sponsor. Using the Port's current investment policy and Milliman's capital market expectations, a likely range of investment return over a 20-year horizon would be between 4.56% and 7.85% per annum with a 50% likelihood of earning 6.19% (Milliman's best estimate) and a 25% likelihood of earning 7.85%.

## Summary of Results

	August 1, 2022	August 1, 2023
<b>Participant Data</b>		
Number of Participants		
Active participants	272	251
Terminated vested participants	160	56
Retired participants	442	438
Disabled participants	3	3
Beneficiaries	<u>119</u>	<u>117</u>
Total Participants	996	865
Total annual compensation	\$28,850,515	\$28,159,670
Average annual compensation	106,068	112,190
<b>Assets</b>		
Market Value	\$199,153,704	\$201,357,241
Investment yield in prior year	(8.6%)	7.0%
Book Value	187,677,356	176,147,536
Actuarial Value	199,153,704	201,357,241
Investment yield in prior year	(8.6%)	7.0%
<b>Actuarial Present Values</b>		
Present Value of Benefits	\$250,587,156	\$246,299,007
Actuarial Value of Assets	199,153,704	201,357,241
Unfunded Present Value of Benefits	51,433,452	44,941,766
Actuarial Accrued Liability	222,813,042	220,375,106
Actuarial Value of Assets	199,153,704	201,357,241
Unfunded Actuarial Accrued Liability	23,659,338	19,017,865
<b>Recommended Contribution</b>		
Funding Policy Contribution	\$8,887,032	\$8,445,132



## Summary of Results

	August 1, 2022	August 1, 2023
<b>Costs and Contributions</b>		
Normal Cost	\$3,905,582	\$3,722,248
% of total annual compensation	13.5%	13.2%
<hr/>		
<b>Funded Status of Accumulated Benefits</b>		
FASB ASC Topic 960 basis		
Present Value of Accumulated Benefits	\$195,270,782	\$192,726,043
Funded Ratio (Market Value basis)	101.99%	104.48%

# Exhibits

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August 1, 2023 Actuarial Valuation

Port of Houston Authority Restated Retirement Plan

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## Exhibit 1

### Summary of Active Participants by Age and Service

#### Number of Participants by Age and Service Groups

Age	Years of Credited Service										Total
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40&Up	
0-24	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	8	4	-	-	-	-	-	12
40-44	-	-	-	12	15	2	-	-	-	-	29
45-49	-	-	-	11	13	9	4	1	-	-	38
50-54	-	-	-	14	16	7	10	5	-	-	52
55-59	-	-	-	11	17	10	12	10	2	-	62
60-64	-	-	-	11	8	5	5	1	1	3	34
65-69	-	-	-	5	5	2	3	1	-	1	17
70&Up	-	-	-	2	3	1	-	1	-	-	7
<b>Total</b>	-	-	-	74	81	36	34	19	3	4	251

#### Average Compensation by Age and Service Groups

Age	Years of Credited Service										Average
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40&Up	
0-24	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	*	*	-	-	-	-	-	*
40-44	-	-	-	*	*	*	-	-	-	-	110,080
45-49	-	-	-	*	*	*	*	*	-	-	98,732
50-54	-	-	-	*	*	*	*	*	-	-	92,247
55-59	-	-	-	*	*	*	*	*	*	-	116,581
60-64	-	-	-	*	*	*	*	*	*	*	125,533
65-69	-	-	-	*	*	*	*	*	-	*	*
70&Up	-	-	-	*	*	*	-	*	-	-	*
<b>Average</b>	-	-	-	112,685	107,622	104,889	102,283	*	*	*	109,831

\*If there are fewer than 20 participants in a cell, the average compensation is not reported.

## Exhibit 2

### Inactive Participants

#### Terminated Vested Participants

Age	Number of Participants	Average Annual Benefit
< 30	0	\$0
30 - 34	0	0
35 - 39	2	10,147
40 - 44	3	6,572
45 - 49	11	11,161
50 - 54	14	15,386
55 - 59	12	15,278
60 - 64	14	24,692
65 & Up	<u>0</u>	<u>0</u>
Total	56	\$16,200

#### Retirees, Beneficiaries, and Disabled Participants

Age	Number of Participants	Average Annual Benefit
< 55	15	\$10,348
55 - 59	6	21,129
60 - 64	38	30,281
65 - 69	128	23,955
70 - 74	145	21,509
75 - 79	95	21,256
80 - 84	86	17,690
85 - 89	33	14,465
90 & Up	<u>12</u>	<u>12,078</u>
Total	558	\$21,113

## Exhibit 3

### Summary of Plan Assets

The summary of plan assets on a Market Value basis as of July 31, 2023 is shown below.

1.	Assets		
	a. Noninterest-bearing cash		\$0
	b. Interest bearing cash		1,955,435
	c. Domestic fixed income		79,839,376
	d. International fixed income		24,033
	e. Balanced Fund		10,425,899
	f. Other assets		348,133
	g. Domestic Equity		85,059,842
	h. International Equity		<u>23,742,091</u>
	i. Total		201,394,809
2.	Liabilities		
	a. Other liabilities		<u>37,568</u>
	b. Total		37,568
3.	Total		
	[(1i) - (2b)]		\$201,357,241

## Exhibit 4

### Summary of Income and Disbursements

The change in the Market Value of Assets from July 31, 2022 to July 31, 2023 is shown below.

1.	Market Value of Assets as of July 31, 2022	\$199,153,704
2.	Income	
	a. Employer contributions for plan year	8,887,125
	b. Net gain (loss) on sale of assets	(2,542,008)
	c. Unrealized appreciation (depreciation)	12,122,947
	d. Other income	<u>4,429,332</u>
	e. Total	22,897,396
3.	Disbursements	
	a. Benefit payments to participants	19,930,751
	b. Investment management fees	446,948
	c. Trustees fees/expenses	<u>316,160</u>
	d. Total	20,693,859
4.	Net increase / (decrease) [(2e) - (3d)]	2,203,537
5.	Market Value of Assets as of July 31, 2023 [(1) + (4)]	\$201,357,241

## Exhibit 5

### Estimated Investment Return on Market Value of Assets

The estimated investment return on the Market Value of Assets for the plan year ending July 31, 2023, assuming all cash flows of contributions, benefit payments, and administrative expenses are paid at mid-year, is determined below.

1. Market Value of Assets as of July 31, 2022	\$199,153,704
2. Market Value of Assets as of July 31, 2023	201,357,241
3. Net non-investment cash flows for plan year ending July 31, 2023	(11,359,786)
4. Investment income for plan year ending July 31, 2023 [(2) - (1) - (3)]	13,563,323
5. Estimated investment return on Market Value of Assets [ $\{2 \times (4)\} \div \{(1) + (2) - (4)\}$ ]	7.01%

## Exhibit 6

### Historical Rates of Return

The dollar-weighted rate of return reflects the actual performance of the fund including the effect of the actual timing of receipts and disbursements. The elements entering into the determination of the rate of return are beginning market value, contributions to the trust and benefit payments, investment expenses paid from the trust, and ending market value. The net dollar-weighted rate of return based on the above elements for the Plan Year ending July 31, 2023 was 7.01%:

<b>Plan Year Ending</b>	<b>Total Investment Gain/(Loss)</b>	<b>Average Invested Fund</b>	<b>Yield</b>
07/31/1996	\$3,991,173	\$54,926,789	7.27%
07/31/1997	\$8,961,037	\$58,548,587	15.31%
07/31/1998	\$6,056,207	\$66,046,547	9.17%
07/31/1999	\$4,033,354	\$68,764,433	5.87%
07/31/2000	\$3,077,226	\$68,882,625	4.47%
07/31/2001	(\$2,875,314)	\$68,661,797	(4.19%)
07/31/2002	(\$3,571,980)	\$63,547,846	(5.62%)
07/31/2003	\$5,272,970	\$59,849,225	8.81%
07/31/2004	\$5,738,703	\$67,448,868	8.51%
07/31/2005	\$8,002,232	\$75,807,855	10.56%
07/31/2006	\$4,922,109	\$84,805,462	5.80%
07/31/2007	\$11,080,734	\$89,902,372	12.33%
07/31/2008	(\$1,973,771)	\$99,911,288	(1.98%)
07/31/2009	(\$4,536,184)	\$97,220,025	(4.67%)
07/31/2010	\$9,811,218	\$94,619,559	10.37%
07/31/2011	\$14,673,091	\$107,480,533	13.65%
07/31/2012	\$5,006,642	\$124,139,679	4.03%
07/31/2013	\$20,745,073	\$130,116,121	15.94%
07/31/2014	\$14,686,971	\$150,792,014	9.74%
07/31/2015	\$7,537,248	\$162,067,952	4.65%
07/31/2016	\$1,657,217	\$164,255,361	1.01%
07/31/2017	\$14,220,462	\$163,041,995	8.72%
07/31/2018	\$12,377,573	\$174,209,332	7.11%
07/31/2019	\$6,031,094	\$181,332,187	3.33%
07/31/2020	\$8,319,100	\$183,669,928	4.53%
07/31/2021	\$40,139,696	\$188,503,154	21.29%
07/31/2022	(\$19,046,095)	\$222,047,267	(8.58%)
07/31/2023	\$13,563,323	\$193,473,811	7.01%
<b>1996 - 2023</b>	<b>\$197,901,109</b>	<b>\$3,264,072,611</b>	<b>6.06%</b>



## Exhibit 7

### Employer Contributions for Prior Plan Year

The employer contributions for the plan year ending July 31, 2023 were paid or are payable on the dates and in the amounts shown below.

<b>Date of Contribution</b>	<b>Amount</b>
October 18, 2022	\$2,218,125
December 14, 2022	2,223,000
March 28, 2023	2,223,000
June 6, 2023	2,223,000
Total	\$8,887,125

## Exhibit 8

### Actuarial Balance Sheet

The total plan requirements compared to the total value of plan resources as of August 1, 2023 is shown below.

#### Plan Requirements

1.	Present value of active participant benefits	
	a. Withdrawal	\$6,384,182
	b. Retirement	106,757,935
	c. Death	1,320,331
	d. Disability	<u>8,254,337</u>
	e. Total	122,716,785
2.	Present value of inactive participant benefits	
	a. Retired participants	104,947,455
	b. Terminated vested participants	6,578,020
	c. Beneficiaries	11,387,321
	d. Disabled participants	<u>669,426</u>
	e. Total	123,582,222
3.	Total plan requirements	
	[(1e) + (2e)]	246,299,007

#### Plan Resources

4.	Actuarial Value of Assets	201,357,241
5.	Unfunded Actuarial Accrued Liability	19,017,865
6.	Present Value of Future Normal Costs	25,923,901
7.	Total plan resources	
	[(4) + (5) + (6)]	\$246,299,007

## Exhibit 9

### Actuarial (Gain) / Loss for Prior Plan Year

The Actuarial (Gain) / Loss for the prior plan year is the difference between the expected and actual Unfunded Actuarial Accrued Liability as of the beginning of the current plan year. The Actuarial (Gain) / Loss for the plan year ending July 31, 2023 is determined below.

1. Unfunded Actuarial Accrued Liability as of August 1, 2022	\$23,659,338
2. Normal Cost as of August 1, 2022	3,905,582
3. Interest on (1) and (2) to end of plan year	<u>1,653,895</u>
4. Subtotal [(1) + (2) + (3)]	29,218,815
5. Employer contributions for plan year	8,887,125
6. Interest on (5) to end of plan year	<u>250,629</u>
7. Subtotal [(5) + (6)]	9,137,754
8. Changes in Actuarial Accrued Liability	
a. Plan amendments	0
b. Changes in actuarial assumptions	(14,010)
c. Changes in cost method	<u>0</u>
d. Total	(14,010)
9. Expected Unfunded Actuarial Accrued Liability as of August 1, 2023 [(4) - (7) + (8d)]	20,067,051
10. Actual Unfunded Actuarial Accrued Liability as of August 1, 2023	19,017,865
11. Actuarial (Gain) / Loss on Actuarial Value of Assets	(1,752,633)
12. Actuarial (Gain) / Loss on Actuarial Accrued Liability [(10) - (9) - (11)]	703,447
13. Actuarial (Gain) / Loss for prior plan year [(11) + (12)]	(1,049,186)
14. Actuarial (Gain) / Loss subject to amortization, if any	(\$1,049,186)

## Exhibit 10

### Amortization of Unfunded Actuarial Accrued Liability

The amortization charges and credits for the Funding Standard Account for the plan year beginning August 1, 2023 are determined below.

1. Charges as of August 1, 2023\*

	Date Established	Description	Amortization Amount	Remaining Years	Outstanding Balance
a.	August 1, 2022	Unfunded	3,864,145	4	14,193,049
b.	August 1, 2022	Change in assumptions	821,043	9	5,919,550
c.	Total		4,685,188		20,112,599

2. Credits as of August 1, 2023\*

	Date Established	Description	Amortization Amount	Remaining Years	Outstanding Balance
a.	August 1, 2023	Unfunded	\$242,038	5	\$1,080,724
b.	August 1, 2023	Change in assumptions	1,796	10	14,010
c.	Total		243,834		1,094,734

\* Since the Actuarial Value of Assets exceeded the Actuarial Accrued Liability as of August 1, 2021, all Outstanding Balance and Amortization Amounts prior to 2021 were eliminated.

3.	Net outstanding balance [(1c) - (2b)]				19,017,865
4.	Unfunded Actuarial Accrued Liability as of August 1, 2023, minimum \$0				\$19,017,865

## Exhibit 11

### Present Value of Accumulated Plan Benefits

Accumulated Plan Benefits are benefits earned to date, based on pay history and service rendered to date, expected to be paid in the future to retired, terminated vested, and active participants, and beneficiaries of active or former participants. The Present Value of Accumulated Plan Benefits (determined on a plan continuation basis in accordance with FASB ASC Topic 960) as of August 1, 2023 is shown below.

1.	Present Value of vested Accumulated Plan Benefits	
	a. Active participants	\$65,450,574
	b. Retired participants	104,947,455
	c. Terminated vested participants	6,578,020
	d. Beneficiaries	11,387,321
	e. Disabled participants	<u>669,426</u>
	f. Total	189,032,796
2.	Present Value of non-vested Accumulated Plan Benefits	3,693,247
3.	Present Value of all Accumulated Plan Benefits [(1f) + (2)]	192,726,043
4.	Market Value of Assets	\$201,357,241
5.	Funded ratio	
	a. Vested benefits [(4) ÷ (1f)]	106.52%
	b. All benefits [(4) ÷ (3)]	104.48%

## Exhibit 12

### Change in Present Value of Accumulated Plan Benefits

The change in the Present Value of Accumulated Plan Benefits (determined on a plan continuation basis in accordance with FASB ASC Topic 960) from August 1, 2022 to August 1, 2023 is shown below.

1.	Present Value of all Accumulated Plan Benefits as of August 1, 2022	\$195,270,782
2.	Changes	
	a. Reduction in discount period	11,322,659
	b. Benefits accumulated plus actuarial (gain) / loss	6,063,353
	c. Benefit payments	19,930,751
	d. Plan amendments	0
	e. Change in assumptions	0
	f. Total	
	[(a) + (b) - (c) + (d) + (e)]	(2,544,739)
3.	Present Value of all Accumulated Plan Benefits as of August 1, 2023	
	[(1) + (2f)]	\$192,726,043

# Appendix A

## Summary of Actuarial Assumptions and Methods

The ultimate cost of a pension plan is the excess of actual benefits and administrative expenses paid over actual net investment return on plan assets during the plan's existence until the last payment has been made to the last participant. The plan's "actuarial cost method" determines the expected incidence of actuarial costs by allocating portions of the ultimate cost to each plan year. The cost method is thus a budgeting tool to help ensure that the plan will be adequately and systematically funded. There are several commonly used cost methods which differ in how much of the ultimate cost is assigned to each prior and future year. Therefore, the pattern of annual contributions varies with the choice of cost method. Annual contributions are also affected by the "asset valuation method" (as well as the plan provisions, actuarial assumptions, and actual plan demographic and investment experience each year).

### **Actuarial Cost Method**

The actuarial cost method used in the valuation of this Plan is known as 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. This unfunded accrued liability may be liquidated over a period of between five and thirty years (forty years for plans in existence on January 1, 1974) at the convenience of the employer with fixed or variable payments, subject to certain minimum payments on a cumulative basis needed to satisfy the minimum contribution requirements 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. The actuarially computed present value of accrued or accumulated plan benefits is the present value of retirement benefits which have been accrued or earned to date based only upon service and earnings to date.

The funding cost of the Plan is derived by making certain specific assumptions as to rates of interest, mortality, turnover, etc., which are assumed to hold for many years into the future. Since actual experience may differ somewhat from the assumptions, the costs determined by the valuation must be regarded as estimates of the true costs of the Plan.

### **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.



### Asset Valuation Method

For purposes of applying the actuarial cost method, effective October 27, 1996, plan assets are valued at market value. Prior to October 27, 1996, plan assets were invested with American General and were valued at contract value.

### Changes in Actuarial Methods since Prior Valuation

None.

## ECONOMIC ASSUMPTIONS

### Interest Rates

- **For funding purposes:** 6.00% per annum, compounded annually (adopted August 1, 2022).
- **For current liability purposes:** 6.00% per annum, compounded annually (adopted August 1, 2022).

### Earnings Progression (adopted August 1, 2015)

Age	Rate	Age	Rate	Age	Rate
20	10.00%	32	6.20%	51	4.30%
21	9.50%	33	5.90%	52	4.10%
22	8.90%	34	5.50%	53	3.90%
23	8.30%	35	5.20%	54-60	3.70%
24	7.70%	36	5.00%	61	3.50%
25	7.30%	37	4.80%	62	3.30%
26	7.20%	38	4.60%	63	3.10%
27	7.10%	39	4.40%	64	2.90%
28	7.00%	40	4.20%	65	2.70%
29	6.90%	41-42	4.30%	66+	2.50%
30	6.80%	43-44	4.40%		
31	6.50%	45-50	4.50%		

### Future Social Security Wage Base Increases

4.00% per annum, compounded annually.

### Inflation

2.33% per annum, compounded annually (adopted August 1, 2023).

## DEMOGRAPHIC ASSUMPTIONS

### Mortality

- **For healthy lives:** For Salaried participants, the Pri-2012 White Collar Mortality Table projected forward with Scale MP-2021 Projection for males and females. For Hourly participants, the Pri-2012 Blue Collar Mortality Table projected forward with Scale MP-2021 Projection for males and females (adopted August 1, 2022).

- **For disabled lives:** the Pri-2012 Disabled Mortality Table projected forward with Scale MP-2021 Projection for males and females (adopted August 1, 2022).

**Turnover (adopted August 1, 2020)**

Service	Rate	Service	Rate
0-2	10.00%	22	2.00%
3	7.50%	23	3.00%
4-8	5.00%	24	4.50%
9-14	2.00%	25-27	4.00%
15-16	4.00%	28	2.00%
17-18	2.00%	29	1.00%
19-21	1.00%	30+	0.00%

**Retirement (adopted August 1, 2020)**

Age	Service	
	<30	30+
55	0.00%	30.00%
56	0.00%	5.00%
57	0.00%	5.00%
58	0.00%	5.00%
59	0.00%	10.00%
60	0.00%	20.00%
61	0.00%	20.00%
62	10.00%	25.00%
63	5.00%	25.00%
64	5.00%	25.00%
65-69	30.00%	30.00%
70+	100.00%	100.00%

## Disability (adopted August 1, 2015)

Selected rates are as follows:

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

## Form of Payment

100% of participants are assumed to elect an annuity at retirement.

## Marital Characteristics

- **For participants not in pay status:** 100% of participants are assumed to be married, with males 3 years older than females.
- **For participants in pay status:** Actual birth dates of spouses are included in the census data, where relevant.

## Expenses

Normal Cost is loaded by \$500,000 for administrative expenses.

## Benefits Not Valued

All benefits are valued.

## Special Data Adjustments

None.

## 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.

### Changes Since Last Valuation

**Inflation:** Effective August 1, 2023, the inflation assumption was changed from 2.40% to 2.33% per year.

# Appendix B

## Summary of Principal Plan Provisions

This summary of plan provisions is intended to only describe the essential features of the plan. All eligibility requirements and benefit amounts shall be determined in strict accordance with the plan document itself.

## Definitions

**Accrued Benefit:** Determined under the fractional rule, equal to that amount which is in the same proportion to the Participant's Normal Retirement Benefit as the Participant's Years of Accrual Service completed as of the date of determination bear to the total Years of Accrual Service the Participant would complete if he were to continue to participate until his Normal Retirement Date.

**Actuarially Equivalent:** Equality in value such that the present value of the amount under any form of payment is essentially the same as the present value of the amount under the normal form of annuity payment for single participants. In general, for purposes other than determining lump sum amounts, Actuarially Equivalent factors are based on the 2023 Applicable Mortality Table blended for Males and Females and an interest rate of 6%. For purposes of determining lump sum amounts, Actuarially Equivalent factors are based on the applicable mortality table in effect under IRC Section 417(e)(3) for the plan year of distribution and the statutory three-tier segment interest rates in effect for the June prior to the plan year of distribution (i.e., annual stability period with a two-month lookback period).

**Average Monthly Compensation:** Determined by dividing the total Compensation received during the 5 consecutive Compensation Periods (during the last 10 years of employment) for which Compensation was highest by the number of months during such period. All fractional Compensation Periods will be taken into account.

**Compensation:** That compensation which is treated as FICA wages without regard to the Social Security taxable wage base, excluding overtime and bonuses. In the case of hourly employees, Compensation as of any date is based on the straight time rate per hour assuming they work 2,080 hours per year. Compensation also includes any amounts which are treated as salary reduction contributions and used to purchase non-taxable benefits under Section 125 or 401(k) of the Internal Revenue Code.

Compensation in excess of the Statutory Compensation Limit will be disregarded. Statutory Compensation Limit means \$330,000 for the Plan Year beginning August 1, 2023, as adjusted in accordance with Code Section 401(a)(17)(B). For purposes of applying this compensation limit, a family member of a Highly Compensated Employee is subject to the single aggregate compensation limit imposed on the Highly Compensated Employee if the family member is either the Employee's spouse or is a lineal descendant who has not attained the age of 19 by the end of the Plan Year.

The Compensation Period is the 12 month period which begins each August 1 and ends each July 31.

**Effective Date:** August 1, 1988.

The plan was last amended effective August 15, 2022.

**Eligible Employee Classification:** A classification of employees, the members of which are eligible to participate in the Plan. The Plan covers all employee classifications except leased employees and casual employees.

**One Year Break-in-Service:** Occurs in any 365-day period following a Participant's date of termination in which an employee does not complete at least one hour of service.

**Plan Sponsor:** Port of Houston Authority of Harris County, Texas. The Plan Administrator is the Human Resources Manager.

**Plan Year:** 12 month period beginning August 1 and ending July 31.

## Years of Service

**For Eligibility purposes:** Determined using the Hours of Service Method. A Year of Eligibility Service is credited for each Computation Period during which an Employee is credited with at least 1,000 hours of service. The Computation Period is the 12 consecutive month period beginning with the employee's employment commencement date and anniversaries thereof. All of an employee's Years of Eligibility Service are taken into account in determining his eligibility to participate.

**For Benefit purposes:** Determined using the Elapsed Time Method. All of an employee's Years of Benefit Service are taken into account in determining the monthly benefit except:

- service for which the employee was not entitled to receive Compensation; and
- service while the employee was not in an Eligible Employee Classification.

**For Accrual purposes:** Determined using the Elapsed Time Method. All of an Employee's Years of Accrual Service are taken into account in determining the monthly benefit except:

- service for which the employee was not entitled to receive Compensation; and
- service while the employee was not in an Eligible Employee Classification.

**For Vesting purposes:** Determined using the Elapsed Time Method. All of an employee's Years of Vesting Service are taken into account in determining Vested Percentage.

## Eligibility for Participation

An Employee who is a member of an Eligible Employee Classification will become a participant in the Plan on the August 1st which coincides with or next follows the completion of one Year of Eligibility Service. Plan participation was frozen effective August 1, 2012 for employees hired on/after August 1, 2012.

## Normal Retirement

**Normal Retirement Date:** The first day of the month coincident with or next following the later of attainment of age 65.

**Normal Retirement Benefit:** A monthly retirement pension benefit commencing on the Participant's Normal Retirement Date payable in the Normal Benefit Form in an amount equal to 2.3% of Average Monthly Compensation multiplied by Years of Benefit Service not in excess of 30.435 years

**Normal Benefit Form:** Lifetime Pension, 5 Years Certain, a monthly pension benefit payable for the lifetime of the Participant with payments guaranteed for a minimum of 5 years. In the event of the Participant's death prior to the expiration of 5 years, the same monthly pension benefit will be continued to the Participant's Beneficiary for the remainder of the 5 year period.

## Early Retirement

**Early Retirement Date:** The first day of the month so elected by the Participant which coincides with or next follows the date upon which the Participant satisfies one of the following requirements:

- Attainment of age 62; or
- Completion of 30 Years of Vesting Service; or
- The sum of the Participant's age and Years of Vesting Service equals 85 or more, provided the Participant has attained age 55 or more

**Early Retirement Benefit:** Equal to the Actuarial Equivalent of the Participant's Accrued Benefit determined as of his Early Retirement Date. A Participant may retire on the first day of any month following the satisfaction of (3) above and receive his Accrued Benefit without any Actuarial Equivalent reduction.

The plan offered an enhanced early retirement window to qualified participants effective January 1, 2013.

## Late Retirement

**Late Retirement Date:** The first day of the month coincident with or next following the date of termination of employment if it occurs after the Normal Retirement Date.

**Late Retirement Benefit:** At actual retirement, the benefit will be equal to the monthly benefit which is based on the Normal Retirement Benefit formula using the Participants' Years of Benefit Service and Compensation through his Late Retirement Date.

## Termination

**Termination Date:** The date of termination of service other than for reasons of retirement, disability, or death.

**Termination Benefit:** The Accrued Benefit multiplied by the Vested Percentage below, payable at the Normal Retirement Date.

Years of Vesting Service	Vested Percentage
Less than 5	0%
5 or more	100

## Preretirement Death

In the event of the death of a Participant prior to the date that he begins to receive a monthly pension benefit under the Plan, the Participant's surviving spouse, if any, will be entitled to receive a preretirement death benefit.

If the Participant has completed of 15 Years of Vesting Service, the Participant's surviving spouse, if any, will be entitled to receive a monthly pension benefit equal to 50% of the Participant's Accrued Benefit determined as of his date of death.

The spouses of Participants with less than 15 Years of Vesting Service at the date of death will receive a Qualified Pre-retirement Survivor Annuity, equal to 50% of the monthly pension benefit which would have been payable had the Participant retired on the day before his death and elected a Joint and 50% Contingent Survivor Pension. A Joint and 50% Contingent Pension provides a monthly pension benefit payable for the lifetime of the Participant and, upon the Participant's death, if the Participant's spouse survives the Participant, a monthly pension benefit will continue for the remaining lifetime of the surviving spouse equal to 50% of the monthly pension benefit which was payable during the joint lifetime of the Participant and the Participant's surviving spouse.

## Disability Retirement

**Disability Retirement Date:** The first day of the month coincident with or next following the date of termination of his employment due to disability provided such Participant has been found to be eligible for a Disability Retirement Benefit.

An Active Participant will be eligible for a Disability Retirement Benefit under the Plan upon the occurrence of permanent disability coincident with or following the Participant's completion of 5 Years of Vesting Service.



**Disability Retirement Benefit:** Equal to the Normal Retirement Benefit to which the Participant would have been entitled if he had continued to be an employee until his Normal Retirement Date with such benefit calculated on the basis of his Average Monthly Compensation as of his Disability Retirement Date. Such benefit will begin on his Normal Retirement Date.

If a Participant satisfies the requirements for a Disability Retirement Benefit and also satisfies the requirements for a Vested Accrued Benefit, the portion of his Disability Retirement Benefit which is the Actuarial Equivalent of his Vested Accrued Benefit will be payable in the Normal Benefit Form (or any optional benefit form) and will be subject to the joint and survivor annuity distribution requirements. The remaining portion, if any, of the Actuarial Equivalent of the Participant's Disability Retirement Benefit will be payable as a Lifetime Pension with a monthly benefit payable for the Participant's lifetime with payments terminating upon his death.

**Permanent Disability:** A Participant will be considered permanently disabled if he becomes eligible for disability benefits under the Social Security Program and, in the opinion of the Plan Administrator,

- he is prevented from performing the usual duties of his employment or any other employment for which he is reasonably suited as a result of his education, training and experience;
- such disability is likely to be both continuous and permanent;
- such disability occurs on or after the Effective Date of the Plan but prior to the Participant's Normal Retirement Date; and
- such disability is not, in the opinion of the Plan Administrator, the result of injury or disease sustained by the Participant which was diagnosed or discovered subsequent to the date his employment has terminated.

## Forms of Payment

Optional benefit forms are available and equal to the Actuarial Equivalent of the Normal Benefit Form and may be in an amount more than or less than that provided by the Normal Benefit Form depending on the option selected. Such distribution may be in one or more of the following forms:

**Lifetime Pension, 10 Years Certain:** Monthly pension benefit payable for the lifetime of the Participant with payments guaranteed for a minimum of 10 years.

**Lifetime Pension, 15 Years Certain:** Monthly pension benefit payable for the lifetime of the Participant with payments guaranteed for a minimum of 15 years.

**Lifetime Pension, 20 Years Certain:** Monthly pension benefit payable for the lifetime of the Participant with payments guaranteed for a minimum of 20 years.

**Joint & 50% Survivor Pension:** Monthly pension benefit payable during the joint lifetime of the Participant and the Participant's spouse; reduces to 50% of the original amount upon the first death.

**Joint & 75% Survivor Pension:** Monthly pension benefit payable during the joint lifetime of the Participant and the Participant's spouse; reduces to 75% of the original amount upon the first death.

**Joint & 100% Survivor Pension:** Monthly pension benefit payable for as long as either the Participant or the Participant's spouse is alive.

**Lump Sum:** Payable if the actuarially equivalent present value of the vested Accrued Benefit is \$100,000 or less.

**Small Lump Sum:** Payable automatically if the actuarially equivalent present value of the vested Accrued Benefit is \$5,000 or less.

**Window Benefit Program:** The Plan Sponsor amended the Plan to provide for a lump sum window to terminated vested participants that terminated employment on or before August 5, 2022 and have not commenced receiving a benefit before December 1, 2022.

### Changes in Plan Provisions since Prior Valuation

None.

# Appendix C

## General Rules

## General Rules

The Employee Retirement Income Security Act of 1974 (ERISA) requires that an accounting procedure be established and maintained for each retirement plan covered under the Act to determine the minimum funding requirements. This accounting procedure involves the establishment of a "Funding Standard Account." The purpose of this account is to keep track of the funding status of the Plan on a cumulative basis with regard to the minimum required contributions to the Plan. Each Plan Year the account is charged with certain amounts such as the normal cost for the year and the amounts (if any) which are required to amortize the unfunded accrued liability or the unfunded frozen actuarial liability over a specified period of years.

For any Plan Year which is less than a full twelve months in length, the normal cost, amortization charges and amortization credits are reduced on a pro rata basis to reflect the length of the short Plan Year.

## Timing of Contribution

To avoid a funding deficiency, a contribution sufficient to meet the minimum funding requirements must be made to the trust fund not later than eight and one-half months after the end of the Plan Year. A portion of the minimum required contribution must be contributed prior to the end of each plan quarter. This portion is equal to 6.25% for Plan Years beginning in 1989, 12.50% for Plan Years beginning in 1990, 18.75% for Plan Years beginning in 1991, and 25.00% for Plan Years beginning in 1992 and later. Failure to meet the quarterly contribution schedule will subject the Plan to additional interest charges to its Funding Standard Account.

The Internal Revenue Service will impose a 10% excise tax on any funding deficiency existing as of the end of a Plan Year. If a funding deficiency is not corrected within a specified period determined by the Internal Revenue Service (but not less than 90 days), an excise tax of 100% of the amount of the deficiency will be imposed. This excise tax is non-deductible. Application can be made to the Internal Revenue Service to waive or defer such minimum payment in the event it can be shown to the satisfaction of the Internal Revenue Service that such payment will result in hardship.

# Appendix D

## Description of the Maximum Deductible Contribution Limit

## General Rules

A plan sponsor can deduct for income tax purposes only such amounts that fall within the permissible limits set forth in Section 404(a) of the Internal Revenue Code as amended. Any contributions in excess of such limits will be subject to a nondeductible 10% excise tax. This excise tax will be imposed annually on any accumulated undeducted contributions until such contributions are deducted.

The general rule on the deductibility of employer contributions is that the amount required to meet minimum funding standards may be deducted.

A second rule permits the employer to deduct annually the amount necessary to fund, with respect to each participant, the unfunded present value of the participant's future benefits over the participant's remaining future service. However, if the remaining unfunded present value with respect to any three participants is more than 50% of the total remaining unfunded cost, the amount of remaining unfunded cost attributable to these participants must be distributed over a period of at least five years.

A third rule permits the employer to deduct annually an amount equal to the normal cost of the Plan plus an amount necessary to amortize any initial accrued liability or any increase or decrease in such accrued liability over a period of ten years.

A fourth rule provides that the tax deduction for any particular year cannot exceed the amount needed to bring the Plan to a fully funded status. (This amount is called the full funding limitation). That is, no deductions can be taken for contributions that would raise the plan assets to a level above the greater of (1) the Plan's accrued liability, or (2) 90% of the current liability of the Plan as of the end of the Plan Year, less Plan assets as of the end of the Plan Year.

A fifth rule permits employers with more than 100 plan participants to deduct annually an amount equal to 150% of the current liability of the Plan as of the end of the Plan Year less plan assets as of the end of the Plan Year, even if such amount exceeds the full funding limitation.

## Maintenance of Stock Bonus or Profit Sharing Plan

An additional limitation is imposed if (1) the plan sponsor maintains a stock bonus or a profit-sharing trust for any employees who are also participants of the defined benefit plan and (2) any contributions paid into such a trust are deductible in the current fiscal year. The total amount that is otherwise deductible cannot exceed the greater of (1) 25% of covered payroll or (2) the amount required to meet the minimum funding standards.

## Fiscal Year versus Plan Year

Although the deductible limit applies for an employer's fiscal year, the deductible limit is determined on the basis of a Plan Year. If the employer's fiscal year coincides with the Plan Year, the deductible limit on the fiscal year is the deductible limit for the Plan Year that coincides with that year.

If the employer's fiscal year does not coincide with the Plan Year, the deductible limit for a given fiscal year of the employer is one of the following alternatives:

- The deductible limit determined for the Plan Year commencing within the fiscal year.
- The deductible limit determined for the Plan Year ending within the fiscal year.
- A weighted average of alternatives (1) and (2). Such an average may be based, for example, upon the number of months of each Plan Year falling within the fiscal year.

The employer must use the same alternatives for each fiscal year unless consent to change is obtained from the Commissioner of the Internal Revenue Service.

For any fiscal year which is less than a full twelve months in length, the normal cost and any amortization charges or credits are generally reduced on a pro rata basis to reflect the length of the short fiscal year

### **Timing of Contribution**

For purposes of making a tax-deductible contribution for a given fiscal year, the contribution must be paid over to the trustee not later than the due date for the tax return. If an extension for the tax return is received, the extension will also apply to the latest date that a deductible contribution may be made.

# Appendix E

## Glossary



## Glossary

**Accrued Liability:** That portion, as determined by a particular actuarial cost method, of the actuarial present value of plan benefits and expenses which is not provided by future normal costs. 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. Also referred to as Actuarial Accrued Liability.

**Accumulated Plan Benefit:** The amount of an individual's pension benefit (whether or not vested) which has been earned as of a specified date based upon service and compensation to that date. Also referred to as Accrued Benefit.

**Actuarial Assumptions:** Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; changes in compensation and national pension benefits; rates of investment earnings and asset appreciation or depreciation; procedures used to determine the actuarial value of assets; and other relevant items.

**Actuarial Cost Method:** A particular technique used to establish the amount and incidence of the annual actuarial cost of plan benefits.

**Actuarial Equivalent:** Of equal actuarial present value, determined as of a given date with each value based upon the same set of actuarial assumptions.

**Actuarial Gain or Loss:** A measure of the difference between actual experience and that which is expected based upon a set of actuarial assumptions, during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

**Actuarial Value of Assets:** The value of cash, investments and other property belonging to a pension plan, as used by the actuary for the purpose of an actuarial valuation.

**Amortization Payments:** That portion of the pension plan contribution which is designated to pay interest on and to amortize the unfunded accrued liability or the unfunded frozen actuarial liability.

**ERISA:** The Employee Retirement Income Security Act of 1974.

**Funded Ratio:** The ratio, as of a given date, of the market value of plan assets to the present value of accumulated plan benefits. When the market value of plan assets is equal to the present value of accumulated plan benefits, the funded ratio is equal to 100%. When the funded ratio is less than 100%, there may be sufficient assets to cover the vested accumulated plan benefits but not sufficient assets to cover all of the additional nonvested accumulated plan benefits. At the time that a retirement plan is adopted, the funded ratio is usually substantially less than 100% but usually exceeds 100% after the plan has been funded on an ongoing basis for a period of years (such as ten). The funded ratio may decline from one year to the next, however, as a result of benefit improvements or a relative decline in the amount of assets when measured against the usual increase in the value of accumulated plan benefits from year to year.

**Future Benefits:** Those pension plan benefit amounts which are expected to be paid at various future times under a particular set of actuarial assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits. Also referred to as Projected Benefits.

**Normal Cost:** That portion of the present value of future pension plan benefits and expenses which is allocated to a valuation year by the actuarial cost method.

**Present Value:** The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of actuarial assumptions. Also referred to as Actuarial Present Value.

**Quarterly Installments:** That portion of the Minimum Required Contribution which must be contributed by the 15th day of the month following the end of each Plan Year quarter.

**Unfunded Accrued Liability:** The excess of the accrued liability over the actuarial value of assets.

**Vested Accumulated Plan Benefit:** The portion of an individual's accumulated plan benefit which is vested. Also referred to as Vested Accrued Benefit.

**Vested Funded Ratio:** The ratio, as of a given date, of the market value of the plan assets to the present value of vested accumulated plan benefits.

# Appendix F

## Funding Policy Documentation

## Funding Policy Documentation

Statements of the Governmental Accounting Standards Boards (GASB) apply to the financial statements issued by the Plan. This Appendix F contains documentation of the Funding Policy determinations required by GASB with respect to the Port of Houston Authority Restated Retirement Plan (Plan). These determinations rely on information contained in this report for the year ending 7/31/2024, and/or comparable reports issued for prior years. Additional GASB determinations may be required with respect to other plans you maintain.

Appendix F determinations should be used only for the purpose of complying with the funding policy requirements of GASB. Additional determinations may be necessary for other purposes. The determinations contained in Appendix F were made in accordance with the provisions of GASB.

### Funding Policy Annual Required Contribution for Plan Year ended 7/31/2024

a. Normal Cost	\$3,722,248
b. Amortization	4,441,354
c. Interest	281,530
d. Contribution Excess/Deficiency	0
e. Total (a)+(b)+(c)+(d)	\$8,445,132

Actuarial Valuation Date	8/1/2023
Actuarial Cost Method	Entry Age Normal
Unfunded Actuarial Accrued Liability	\$19,017,865
Equivalent Single Amortization Period	5 years
Asset Valuation Method	Market Value
Investment Rate of Return	6.00%
Projected Salary Increases	2.5% to 10.0%
Inflation	2.33%
Cost of Living Adjustment	None

### Schedule of Amortization Bases

Components of the unfunded actuarial liability are amortized as level dollar amounts using the closed basis. Components consisting of actuarial gains and losses are amortized over 5 years. Components consisting of amendments are amortized over 30 years. Components consisting of revised assumptions are amortized over 10 years. Components consisting of revised actuarial methods are amortized over 30 years. The resulting equivalent single amortization base is amortized over a maximum period of 30 years.

**Schedule of Funding Progress for Plan Years Ending 7/31/2024 and earlier**

See Appendix F-1

**Schedule of Employer Contributions for Plan Years Ending 7/31/2024 and earlier**

See Appendix F-2

**Schedule of Employer Contributions for the Plan Year Ended 7/31/2024**

11/15/2023	\$2,111,283
1/15/2024	\$2,111,283
4/15/2024	\$2,111,283
6/15/2024	\$2,111,283
Total	\$8,445,132

## Appendix F-1

## Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability – Entry Age (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a)/c)
8/1/1997	\$67,829,173	\$67,387,724	(\$441,449)	100.7%	\$16,174,442	(2.7%)
8/1/1998	\$70,763,045	\$68,844,893	(\$1,918,152)	102.8%	\$16,825,447	(11.4%)
8/1/1999	\$70,935,582	\$70,939,814	\$4,232	100.0%	\$16,388,149	0.0%
8/1/2000	\$70,309,053	\$73,452,556	\$3,143,503	95.7%	\$17,550,162	17.9%
8/1/2001	\$64,677,712	\$77,033,505	\$12,355,793	84.0%	\$18,778,969	65.8%
8/1/2002	\$59,637,491	\$80,187,561	\$20,550,070	74.4%	\$20,257,220	101.4%
8/1/2003	\$66,992,188	\$83,562,068	\$16,569,880	80.2%	\$21,968,773	75.4%
8/1/2004	\$74,867,530	\$87,331,953	\$12,464,423	85.7%	\$23,170,058	53.8%
8/1/2005	\$84,810,133	\$89,911,993	\$5,101,860	94.3%	\$24,113,184	21.2%
8/01/2006 <sup>b</sup>	\$89,737,077	\$104,321,646	\$14,584,569	86.0%	\$26,285,989	55.5%
8/1/2007	\$101,148,401	\$109,918,975	\$8,770,574	92.0%	\$28,620,863	30.6%
8/1/2008	\$96,724,229	\$117,731,407	\$21,007,178	82.2%	\$32,270,226	65.1%
8/1/2009	\$93,179,637	\$122,093,307	\$28,913,670	76.3%	\$32,695,393	88.4%
8/1/2010	\$105,870,699	\$128,583,531	\$22,712,832	82.3%	\$34,938,502	65.0%
8/1/2011	\$123,763,457	\$132,494,966	\$8,731,509	93.4%	\$35,570,719	24.5%
8/1/2012	\$129,522,543	\$139,259,442	\$9,736,899	93.0%	\$35,081,902	27.8%
8/01/2013 <sup>c</sup>	\$151,454,771	\$154,450,530	\$2,995,759	98.1%	\$33,689,999	8.9%
8/1/2014	\$164,816,227	\$157,813,860	(\$7,002,367)	104.4%	\$31,376,937	(22.3%)
8/01/2015 <sup>d</sup>	\$166,856,925	\$171,223,667	\$4,366,742	97.4%	\$30,412,207	14.4%
8/1/2016	\$163,311,014	\$176,666,637	\$13,355,623	92.4%	\$30,210,365	44.2%
8/1/2017	\$176,993,428	\$186,062,856	\$9,069,428	95.1%	\$29,960,300	30.3%
8/1/2018 <sup>e</sup>	\$184,287,781	\$187,261,680	\$2,973,899	98.4%	\$30,327,556	9.8%
8/1/2019 <sup>f</sup>	\$184,407,686	\$198,409,073	\$14,001,387	92.9%	\$30,401,742	46.1%
8/1/2020 <sup>g</sup>	\$191,251,270	\$204,848,131	\$13,596,861	93.4%	\$29,688,379	45.8%
8/1/2021 <sup>h</sup>	\$225,894,734	\$209,999,252	(\$15,895,482)	107.6%	\$28,395,351	(56.0%)
8/1/2022 <sup>i</sup>	\$199,153,704	\$222,813,042	\$23,659,338	89.4%	\$28,850,515	82.0%
8/1/2023 <sup>j</sup>	\$201,357,241	\$220,375,106	\$19,017,865	91.4%	\$28,159,670	67.5%

b Includes effect of April 2006 COLA and August 2006 assumptions changes

c Includes effect of December 2013 Early Retirement Window and 2013 assumption change

d Includes effect of August 2015 assumptions changes

e Includes effect of August 2018 mortality improvement assumption change

f Includes effect of August 2019 mortality improvement and interest rate assumption changes

g Includes effect of August 2020 mortality improvement, interest rate and experience study assumption changes

h Includes effect of August 2021 mortality improvement assumption change

i Includes effect of August 2022 mortality improvement, inflation, and interest rate assumption changes

j Includes effect of August 2023 inflation assumption change

## Appendix F-2

### Schedule of Employer Contributions

Year Ended July 31	Funding Policy Contribution	Percentage Contributed
1997	\$3,129,838	100.0%
1998	\$1,667,584	100.0%
1999	\$1,011,261	100.0%
2000	\$1,126,800	100.0%
2001	\$2,136,112	100.0%
2002	\$3,228,692	100.0%
2003	\$6,915,752	100.0%
2004	\$6,983,092	100.0%
2005	\$7,131,380	100.0%
2006	\$5,813,248	100.0%
2007	\$6,509,928	100.0%
2008	\$3,929,348	100.0%
2009	\$7,357,368	100.0%
2010	\$9,857,308	100.0%
2011	\$10,808,796	100.0%
2012	\$8,132,756	100.0%
2013	\$9,870,470	100.0%
2014	\$5,278,440	156.9%
2015	\$4,093,996	100.0%
2016	\$4,480,580	100.4%
2017	\$5,152,984	186.3%
2018	\$5,006,628	105.0%
2019	\$4,436,764	105.0%
2020	\$5,373,772	197.7%
2021	\$5,833,536	100.0%
2022	\$3,857,832	105.0%
2023	\$8,887,032	100.0%

# Appendix G

## Risk Disclosures



The purpose of this appendix is to identify, assess, and provide illustrations of risks that are significant to the Plan, and in some cases to the Plan's participants. Historical data is included.

The results of the actuarial valuation are based on one set of reasonable assumptions. However, it is almost certain that future experience will not exactly match the assumptions. As an example, investments may perform better or worse than assumed in any single year and over any longer time horizon. It is therefore important to consider the potential impacts of these likely differences when making decisions that may affect the future financial health of the Plan, or of the Plan's participants.

In addition, as plans mature they accumulate larger pools of assets and liabilities. This increases the potential risk to plan funding and the finances of those who are responsible for plan funding. As an example, it is more difficult for a plan sponsor to deal with the effects of a 10% investment loss on a plan with \$1 billion in assets and liabilities than if the same plan sponsor is responsible for a 10% investment loss on a plan with \$1 million in assets and liabilities. Since pension plans make long-term promises and rely on long-term funding, it is important to consider how mature the Plan is today, and how mature it may become in the future.

Actuarial Standard of Practice No. 51 (ASOP 51) addresses these issues by providing actuaries with guidance for assessing and disclosing the risk associated with measuring pension liabilities and the determination of pension plan contributions. Specifically, it directs the actuary to:

- Identify risks that may be significant to the Plan.
- Assess the risks identified as significant to the Plan. The assessment does not need to include numerical calculations.
- Disclose plan maturity measures and historical information that are significant to understanding the Plan's risks.

ASOP 51 states that if in the actuary's professional judgment, a more detailed assessment would be significantly beneficial in helping the individuals responsible for the Plan to understand the risks identified by the actuary, then the actuary should recommend that such an assessment be performed.

This appendix uses the framework of ASOP 51 to communicate important information about: significant risks to the Plan, the Plan's maturity, and relevant historical plan data.

## DEFINITION AND IDENTIFICATION LANGUAGE FOR EACH POTENTIAL RISK

### Liquidity Risk

**Definition:** This is the potential that assets must be liquidated at a loss earlier than planned in order to pay for the Plan's benefits and operating costs. This risk is heightened for plans with negative cash flow, in which contributions do not exceed annual benefit payments plus expenses.

**Identification:** This Plan has high cash flow requirements because the sum of benefit payments plus expenses is significantly larger than contributions. The Plan also has a high allocation to illiquid assets such as fixed income and equity. As a result, there is a significant risk that assets may need to be liquidated at a loss before planned in order to pay benefits and expenses.

### Inflation Risk

**Definition:** This is the potential of a pension to lose purchasing power over time due to inflation.

**Identification:** The participants of pension plans without fully inflation-indexed benefits are subject to the risk that their purchasing power will be reduced over time due to inflation.

**Assessment:** Participants in this Plan bear all of the inflation risk occurring after retirement since the benefits are calculated to replace a percent of pay at retirement and include no postretirement cost-of-living adjustments.

## Maturity Risk

**Definition:** This is the potential for total plan liabilities to become more heavily weighted toward inactive liabilities over time.

**Identification:** The Plan is subject to maturity risk because as plan assets and liabilities continue to grow, the impact of any gains or losses on the assets or liabilities also becomes larger.

**Assessment:** Currently assets are equal to 22.7 times last year's contributions indicating a one-year asset loss of 10% would be equal to 2.27 times last year's contributions.

## Retirement Risk

**Definition:** This is the potential for participants to retire and receive subsidized benefits more valuable than expected.

**Identification:** This Plan has valuable early retirement benefits. If participants retire at earlier ages than anticipated by the actuarial assumptions, it is expected that additional funding will be required.

## Contribution Risk

**Definition:** This is the possibility that actual future contributions deviate from expected future contributions.

**Identification:** The Plan is subject to the contribution risk that the actuarially determined contributions will not be made. If contributions are deferred to the future, investment income is lost in the intervening period and the Plan becomes more expensive.

## Investment Risk

**Definition:** The potential that investment returns will be different than expected.

**Identification:** To the extent that actual investment returns differ from the assumed investment return, the Plan's future assets, funding contributions, and funded status may differ significantly from those presented in this valuation.

The Low-Default-Risk Obligation Measure (LDROM) based on the Bond Buyer's 20-year General Obligation Index immediately prior to or coincident with the valuation date of August 1, 2023 (3.60%) is approximately \$288.1 million actuarial accrued liability and results in a 69.9% funded status for the Plan. The LDROM helps understand the cost of investing in an all-bond portfolio and significantly lowering expected return on assets which reflects the actual investment portfolio. Benefit security for members of the plan relies on a combination of the assets in the plan, the investment returns generated on those assets, and the promise of future contributions from the Plan Sponsor. Since the assets are not invested in an all-bond portfolio, the LDROM does not indicate the funding status or progress, nor provide information on necessary plan contributions or the security of participant benefits. The difference between the plan's Actuarial Accrued Liability and the LDROM can be thought of as representing the expected taxpayer savings from investing in the plan's diversified portfolio compared to investing only in high quality bonds.

## Interest Rate Risk

**Definition:** The potential that interest rates will be different than expected.

**Identification:** The pension liabilities reported herein have been calculated by computing the present value of expected future benefit payments using the interest rate described in Appendix A. If interest rates in future valuations differ from this valuation, future pension liabilities, funding contributions, and funded status may differ significantly from those presented in this valuation. As a general rule, using a higher interest rate to compute the present value of future benefit payments will result in a lower pension liability, and vice versa. One aspect that can be used to estimate the impact of different interest rates is a plan's duration.

**Assessment:** If the interest rate changes by 1%, the estimated percentage change in pension liability is a plan's duration in years. The approximate duration of this Plan is 10.5 years. As such, if the interest rate changes by 1%, the estimated change in pension liability is 10.5%.

### Demographic Risks

**Definition:** The potential that mortality or other demographic experience will be different than expected.

**Identification:** The pension liabilities reported herein have been calculated by assuming that participants will follow patterns of demographic experience (e.g., mortality, withdrawal, disability, retirement, form of payment election, etc.) as described in Appendix A. If actual demographic experience or future demographic assumptions are different from what is assumed to occur in this valuation, future pension liabilities, funding contributions, and funded status may differ significantly from those presented in this valuation.