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CWA/ITU Negotiated Pension Plan

Actuarial Valuation Report as of January 1, 2022

Produced by Cheiron

November 2022

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November 8, 2022

Board of Trustees
CWA/ITU Negotiated Pension Plan
27 Roland Avenue, Suite 200
Mount Laurel, NJ 08054

Dear Trustees:

At your request, we have performed the January 1, 2022 actuarial valuation of the CWA/ITU Negotiated Pension Plan (the "Plan"). The purpose of this report is to present information on the Plan's assets and liabilities and to disclose contribution levels, including the minimum required amount as mandated by Federal law, to the Trustees.

In the Foreword we refer to the general approach employed in the preparation of this report. The Summary and Risk Analysis sections discuss the long-term funded status and emerging issues facing the Trustees of this Plan. We also comment on the sources and reliability of both the data and the actuarial assumptions. The results of this report are only applicable to the plan year ending December 31, 2022 and rely on future plan experience conforming to the underlying assumptions. Future valuation results may differ significantly from the results presented in this report due to such factors as the following: plan experience differing from that anticipated by the assumptions (e.g., COVID-19), changes in assumptions, and changes in plan provisions or applicable law.

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This report was prepared solely for the CWA/ITU Negotiated Pension Plan for the purposes described herein and for the use by the Plan Auditor in completing an audit related to the matters herein. Other users of this valuation report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

Sincerely,
Cheiron

Christian Benjaminson

Christian Benjaminson, FSA, EA, MAAA
Principal Consulting Actuary

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FOREWORD

Cheiron has performed the actuarial valuation of the CWA/ITU Negotiated Pension Plan as of January 1, 2022. The purpose of this report is to:

1) Measure and disclose, as of the valuation date, the financial condition and risks of the Plan,
2) Provide specific information and documentation required by the Federal Government and the auditors of the Plan, and
3) Review past and expected trends in the financial conditions of the Plan.

An actuarial valuation establishes and analyzes Plan assets and liabilities on a consistent basis, and traces their progress from one year to the next. It includes measurement of the Plan's investment performance as well as an analysis of Actuarial Liability gains and losses. This valuation report is organized as follows:

Section I presents a summary of the key valuation results and compares this year's results to last year's results.

Section II identifies the primary risks to the Plan and provides background information and an assessment of those risks.

Section III contains exhibits relating to the valuation of assets.

Section IV shows the various measures of liabilities.

Section V shows the development of the minimum and maximum contributions.

Section VI contains information required by the Plan's auditor.

Section VII shows the development of the Plan's unfunded Vested Benefits liability for Withdrawal Liability purposes.

The appendices to this report contain a summary of the Plan's membership at the valuation date, a summary of the major provisions of the Plan, and the actuarial methods and assumptions used in the valuation.

In preparing our report, we relied without audit, on information (some oral and some written) supplied by the Plan Administrator and Auditor. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

The actuarial assumptions, taken individually, reflect our understanding and best estimate of the likely future experience of the Plan. The results in this report are dependent upon future experience conforming to these assumptions. To the extent that future experience deviates from the actuarial assumptions, the true cost of the Plan could vary from our results.

Finally, in preparing this report, we have conformed to generally accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board.

This valuation was prepared using census data and financial information as of January 1, 2022. Events following that date are not, and should not be, reflected in this report. The next valuation will reflect all membership and investment experience changes through December 31, 2022.

SECTION I – SUMMARY

Table I-1
Summary of Principal Results

Participant Counts	1/1/2021	1/1/2022	% Change
Actives	2,125	1,779	(16.3)%
Deferred Inactives	7,425	7,385	(0.5)%
In Pay Status	15,859	15,256	(3.8)%
Total	25,409	24,420	(3.9)%
Financial Information			
Market Value of Assets (MVA)	$ 574,855,319	$ 594,883,254	3.5 %
Actuarial Value of Assets (AVA)	574,855,319	594,883,254	3.5 %
Unit Credit Actuarial Liability (PPA Liability)	$ 1,013,395,051	$ 987,246,590	(2.6)%
Unfunded Actuarial Liability (AVA basis)	438,539,732	392,363,336	(10.5)%
Funding Ratio (AVA basis - PPA Liability)	56.7%	60.3%	
Accumulated Benefits (FASB ASC 960)	$ 1,047,496,211	$ 1,021,869,273	(2.4)%
Unfunded Accumulated Benefits (MVA basis)	472,640,892	426,986,019	(9.7)%
Funding Ratio (MVA basis - FASB ASC 960)	54.9%	58.2%	
Present Value of Vested Benefits (Withdrawal)	$ 1,117,679,616	$ 1,086,476,591	(2.8)%
Unfunded Vested Benefits Withdrawal (MVA basis)	542,824,297	491,593,337	(9.4)%
Minimum Funding and Cash Flows			
Total Normal Cost (including Admin. Expenses)	$ 4,967,722	$ 4,595,698	(7.5)%
ERISA Minimum Funding before Funding Deficiency	51,635,953	31,553,522	(38.9)%
ERISA Funding Deficiency (Beginning of Year)	(272,931,139)	(322,801,130)	18.3 %
Prior Year Contributions (net from all sources)	$ 19,750,413	$ 17,620,903	(10.8)%
Prior Year Benefit Payments	83,338,828	81,419,020	(2.3)%
Prior Year Administrative Expenses	2,619,287	2,854,691	9.0 %
Prior Year Investment Income (net of investment expenses)	64,842,595	86,680,743	N/A

SECTION I – SUMMARY

Regulatory Update

On March 11, 2021 the American Rescue Plan Act of 2021 (ARPA) was signed into law. The Act provides financial assistance to certain plans in order to pay full benefits through 2051. In addition, on July 8, 2022 the Pension Benefit Guaranty Corporation (PBGC) issued final regulations providing details on how the special financial assistance program will be administered.

The Plan is eligible to receive financial assistance given its Critical and Declining PPA status and the financial assistance is expected to provide solvency through 2051. Please see the Assessing Costs and Risks section for additional information.

General Comments on Prior Year Results

Investment and liability experience and their effect on future costs traditionally have been the focus of year-to-year analyses.

- The Market Value of Assets returned 16.01% during 2021, compared to the prior year assumption of 6.00%. In dollars, the total actuarial investment gain (difference between actual and expected returns) was $53.9 million.

- Liability experience based on demographic activity resulted in a net gain of $5.7 million, or 0.56% of beginning of year liabilities. This gain is primarily due to more inactive deaths than expected.

- The investment gain and liability experience resulted in an increase to the funded ratio from 56.7% as of January 1, 2021 to 60.3% as of January 1, 2022.

- The unfunded present value of vested benefits used to allocate liability for Withdrawal Liability purposes decreased from $542.8 million to $491.6 million. This decrease is due to the present value of vested benefits decreasing year over year and the positive 2021 investment return. A 5.00% discount rate is used for withdrawal liability purposes.

The Pension Protection Act of 2006 (PPA) as amended by the Multiemployer Pension Reform Act of 2014 (MPRA) and the American Rescue Plan Act of 2021 (ARPA) added a significant layer of considerations for the Plan.

- The Plan was certified as "Critical and Declining" under PPA for the plan year beginning January 1, 2022 because the Plan is projected to become insolvent within 20 years. This is the same status as the prior year.

- A Rehabilitation Plan was adopted in March 2010 based on the all-reasonable-measures option to forestall insolvency. The adjustable benefits offered by the Plan have been eliminated except for the Early Pension, which is now only available at age 62 (with 20 years of service credit) for future pensioners.

SECTION I – SUMMARY

In addition:

- Active membership continues to decline. The decline over the past year was 16.3% and the average annual decline was 7.2% over the last 10 years.

- The Plan received $17.6 million in Contributions and Withdrawal Liability (WL) payments for the plan year ended December 31, 2021. Comparing this amount to benefits and administrative expenses paid of $84.3 million shows a net negative cash flow of $66.7 million or 11.6% of the Market Value of Assets. This is a significant risk metric for the Plan and explains why the Plan is projected to become insolvent prior to reflecting ARPA. Please review the Risk Analysis Section for more information.

Historical Summary

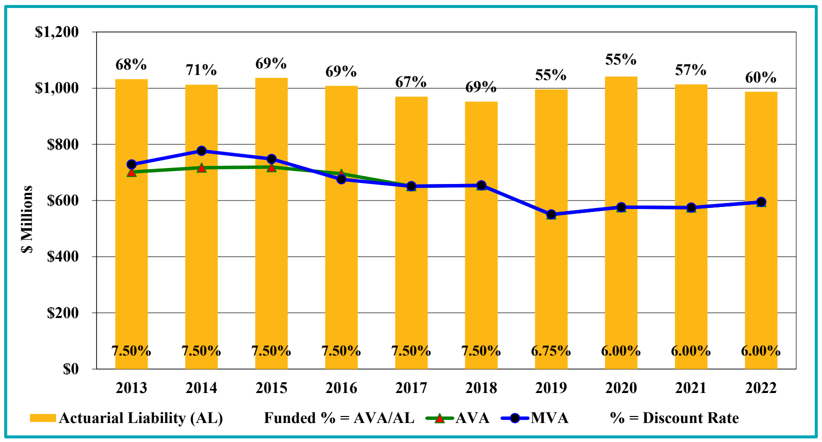
It is important to take a step back from the results and view them in the context of the Plan's recent history. On the following page we present two charts that display key results in the valuations of the last ten years. Additional historical charts can be found in the Risk Analysis Section.

SECTION I – SUMMARY

Assets and Liabilities

The gold bars on the chart below show the Actuarial Liability (AL). The blue line shows the Market Value of Assets (MVA), and the green line shows the Actuarial Asset Value (AVA). Starting in 2017, the Unit Credit Funding Method is used to value the Actuarial Liability. The Entry Age Normal Funding Method was used prior to 2017. Also starting in 2017, the AVA equals the MVA.

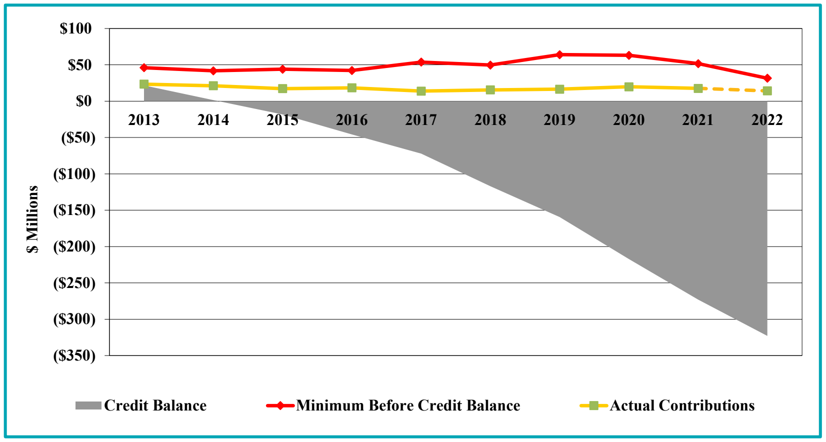
The Plan's funding ratio (Actuarial Value of Assets as a percent of the Actuarial Liability) is shown at the top of each bar. The funding ratio remained fairly level from 2013 through 2018 but decreased in 2019 due to an investment loss and a change in assumed discount rate. We would have expected the funded status to also decrease in 2020 due to another change in the assumed discount rate, but the strong investment gain offset the impact and the funded status gradually increased from that point on.



Minimum Funding

The next chart shows the contributions paid to the Plan (yellow line), the Minimum Required Contribution before the Credit Balance (red line), and the Credit Balance (gray area; called Funding Deficiency when negative).

For the entire period shown, the Minimum Required Contribution before the Credit Balance offset has exceeded actual contributions paid to the Plan. This has caused the Credit Balance to decrease over the period shown and there has been a growing funding deficiency since 2015.



**Contributions for the 2022 plan year are estimated.*

Risk Analysis

Actuarial valuations are based on a set of assumptions about future economic and demographic experience. These assumptions represent a reasonable estimate of future experience. However, actual future experience can be different, sometimes significantly, from assumptions even when assumptions are appropriate.

This section of the report identifies the primary risks to the Plan, provides background information about those risks, and provides an assessment of those risks.

Identification of Risks

As we have discussed with the Trustees, the fundamental risk to the Plan is the Plan's projected insolvency date, which is estimated to extend to at least 2051 due to projected financial assistance provided for under ARPA.

Upon insolvency, benefits would be reduced to the PBGC guaranteed level and the PBGC would provide financial assistance to the Plan.

While there are a number of factors that could accelerate the Plan's projected insolvency date, we believe the primary risks are:

- Investment risk,
- Longevity and other demographic risks, and
- Contribution risk.

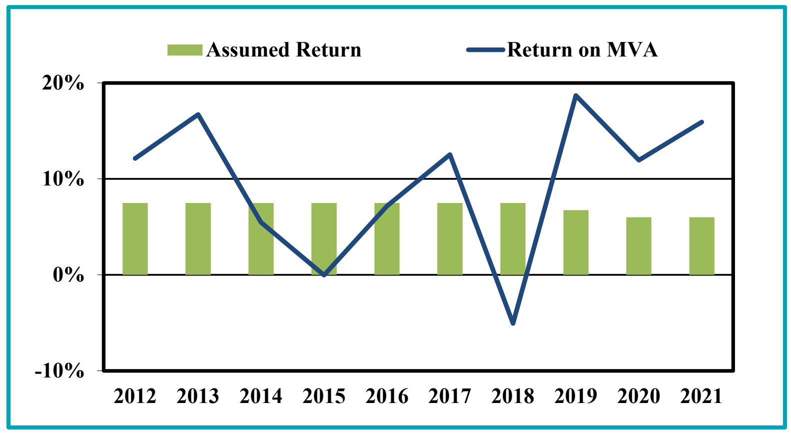
Other risks that are not explicitly identified may also turn out to be important.

Investment Risk is the potential for investment returns to be different than expected. The current assumption is 6.00% per year. This means that in any given year, investment returns will be greater than or less than the assumption. However, over time the geometric mean of the actual investment returns should be close to the assumption. Lower investment returns than anticipated will accelerate the Plan's date of insolvency.

The potential volatility of future investment returns is influenced by the Plan's asset allocation and the impact of the investment risk is correlated to the amount of assets invested relative to the size of the contribution base.

The following chart shows the Market Value of Assets (MVA) returns over the last 10 years compared to the assumption. There are years in which the actual return exceeded the assumed return and others where it was less. The assumed return changed from 7.50% to 6.75% starting January 1, 2019. It was changed again to 6.00% starting January 1, 2020.

The MVA return averaged 9.31% over this 10-year period, and 10.49% over the last 5 years. Although the average returns are greater than the expected return, investment income averaged less than the amount needed to cover benefit payments and expenses, causing assets to decline. Negative net cash flow is discussed in more detail later in this section.



SECTION II – RISK ANALYSIS

Longevity and other demographic risks are the potential for mortality or other demographic experience to be different than expected. If participants live longer on average than expected, more assets will be needed to pay for benefits. If lifetimes are shorter than expected, less will be paid and more money will become available to pay for other participants' benefits.

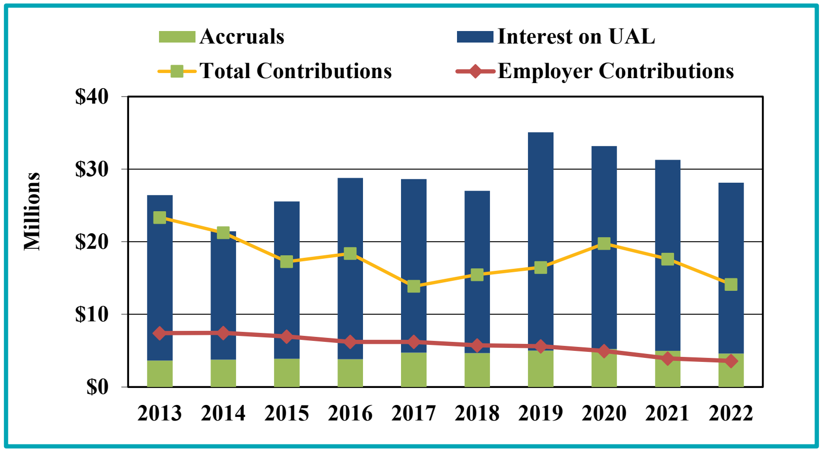
In addition, we make assumptions for when participants will retire and track this assumption compared to actual experience. Trends in rates of retirement that consistently deviate away from expectations may signal the need to reevaluate the assumptions.

While there are other demographic drivers in the volatility of future results, they are considered to not be as important as mortality and retirement.

Contribution risk is the potential for actual contributions to deviate from what was expected. There are different sources of contribution risk including a continued decline in the active membership, sustainability of the employers, and a withdrawn employer's ability to make their withdrawal liability payments.

A plan's contribution risk is shown by comparing its actual contributions to the Tread Water contribution level, which is the amount required to keep the Unfunded Liability from growing. The Tread Water contribution level is the sum of the interest on the existing Unfunded Liability and the present value of the benefits expected to accrue during the year, plus expected administrative expenses (top of the bars).

The following chart shows the employer contributions (red line) and total contributions including withdrawal liability payments (yellow line). Employer contributions, and total contributions (including withdrawal liability payments), were less than the Tread Water level in all years displayed. This is a primary reason the Plan's Unfunded Liability has grown and the Plan is projected to become insolvent.



**Contributions for the 2022 plan year are estimated.*

SECTION II – RISK ANALYSIS

Plan Maturity Measures

Mature pension plans are more sensitive to each of the risks identified above than less mature plans. Before assessing each of these risks, it is important to understand the maturity of the Plan compared to other plans and how the maturity has changed over time.

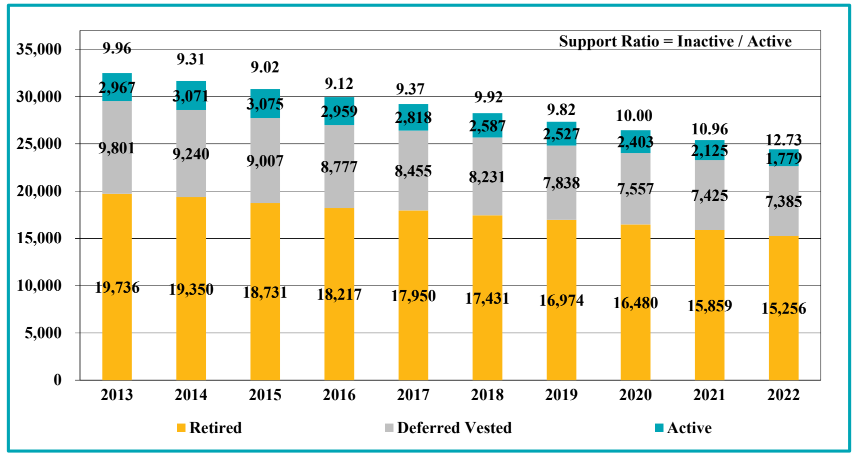
Plan maturity can be measured in a variety of ways, but they all get at one basic dynamic - the more mature a plan is the more sensitive the plan will be to risks. The measures below have been selected as the most important in understanding the primary risks identified for the Plan.

Support Ratio

One simple measure of plan maturity is the support ratio: the number of inactive members (those receiving benefits or entitled to a deferred benefit) to the number of active members. The contributions supporting a plan is usually proportional to the number of active members, so a relatively high number of inactive members compared to the number of active members indicates a more mature plan. The higher the ratio, the more sensitive a plan is to investment or other losses, since generally active member contributions will be needed to make up the loss.

The next chart shows the participants of the Plan at successive valuations. The numbers which appear above each bar show the ratio of inactive members to active members at each valuation date.

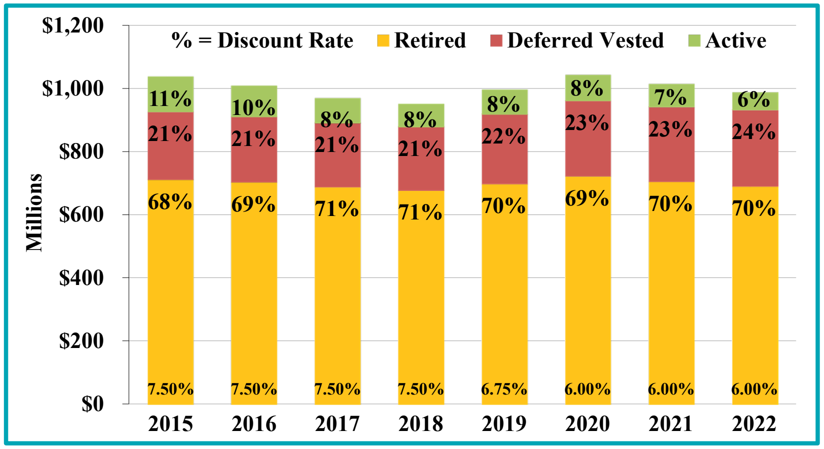
The support ratio has been increasing over the period shown which is attributable to the significant declines in active participants. The Plan's high support ratio also indicates potential increased financial obligations for active employees and employers. Further increases in the support ratio will have an adverse impact on the long-term stability of the Plan.



SECTION II – RISK ANALYSIS

Actuarial Liability by Status

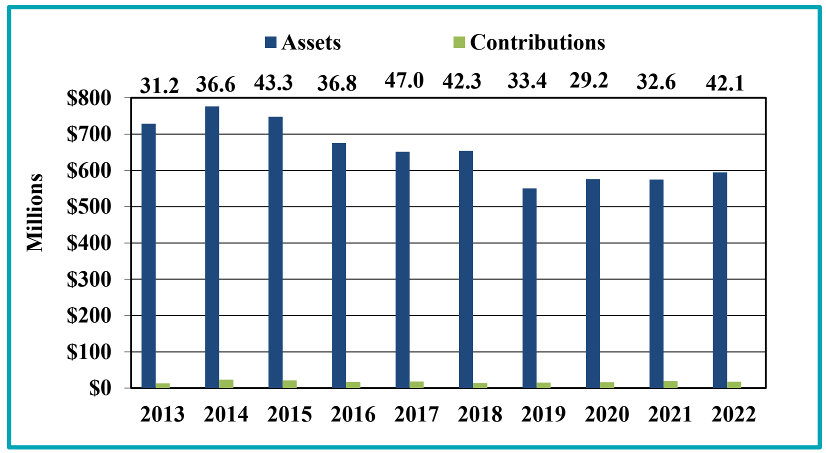
Membership counts are intuitive, but the risk for a pension plan is better measured by the liability. In particular, it is useful to understand the ratio of the liability for retired members compared to the liability for the Plan as a whole. The chart below shows the Plan's actuarial liability and the respective proportion by status. This shows the Plan with 70% of its liability for retired participants and over 90% when combined with the deferred vested participants. Note the maturity of the Plan when measured by the liability has increased steadily over the period shown.



Asset Leverage Ratio

One of the more important plan maturity measures is the Asset Leverage Ratio - the Market Value of Assets divided by the contributions. The greater the plan's assets are relative to contributions, the more vulnerable the plan is to investment volatility.

The chart below shows the historical asset leverage ratios for the Plan. The Asset Leverage Ratio has been above 30 for the majority of the period shown and is 42.1 for 2022. A ratio of 42.1 means, if the Plan experiences a 2% loss on assets compared to the expected return, the loss would be equivalent to almost 85% of annual contributions. This is a significant risk indicator for the Plan.



**The Asset Leverage Ratio for the 2022 plan year is estimated.*

SECTION II – RISK ANALYSIS

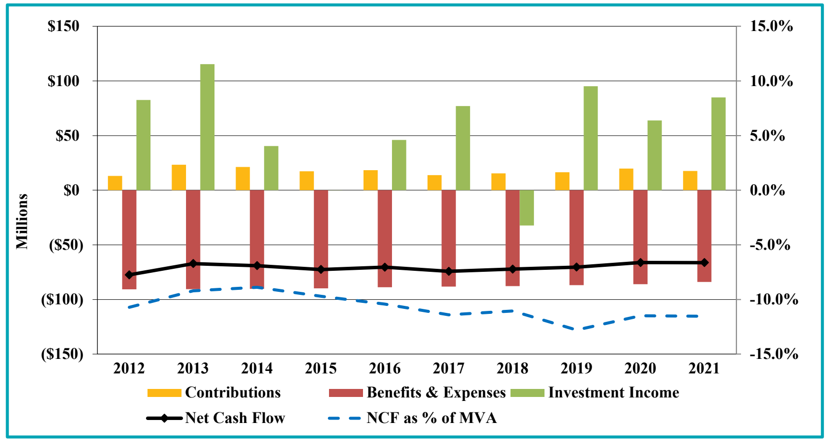
Net Cash Flow

The net cash flow of the Plan as a percentage of the beginning of year assets is another maturity measure that indicates the sensitivity of the Plan to short-term investment returns. Net cash flow is equal to contributions less benefit payments and administrative expenses. Mature plans can have large amounts of benefit payments compared to contributions.

However, when a plan has a negative net cash flow, investment losses in the short-term are compounded by the net cash flow from the plan, leaving a smaller asset base to try to recover from the investment losses. Large negative cash flows can also create liquidity issues.

For the entire period shown in the chart to the right, the Plan has had a negative net cash flow. This means that the Plan is relying on assets and investment income to pay for benefits and expenses.

We also show the negative cash flow as a percent of Market Value of Assets (dotted blue line, right-hand axis) to illustrate what the Plan would have to return in order for the assets to remain level. This amount has been higher than the historical investment return assumptions in all years and is the reason why we project assets to decline in the future.



SECTION II – RISK ANALYSIS

Assessing Costs and Risks

As mentioned, the key risk facing the Plan is the Plan's projected insolvency date. In this section we show projections assessing this risk under various scenarios.

Assessments of Expected Future Conditions

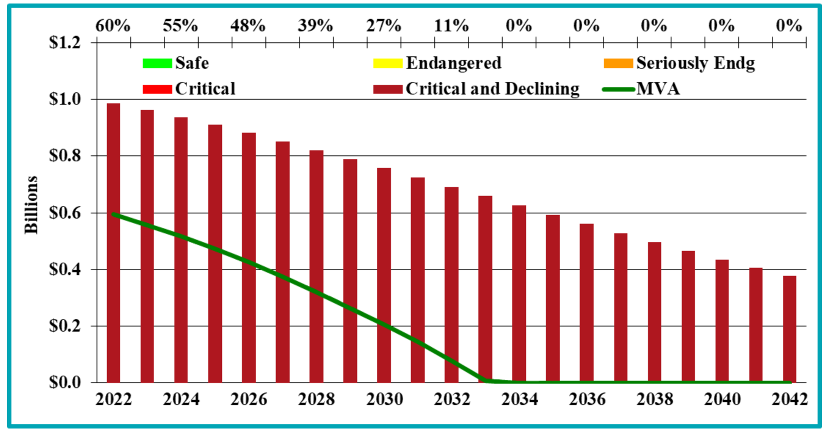
Baseline Projections

As a baseline we present the following projection of Plan assets, liabilities, funding ratios, and the PPA funding status over the next 20 years. The projection is based on the same assumptions used for minimum funding requirements and assume they will be met in the future.

The projections take into account the assets for the plan year ending December 31, 2021 and assumes 6.00% returns in each year thereafter. In addition, we assume current membership will decline at an annual rate of 15% over the next 20 years and that the Plan will be able to collect 80% of withdrawal liability assessments.

Under this projection, the Plan's PPA status is projected to remain "Critical and Declining" and become insolvent during 2033, prior to reflecting the ARPA provisions.

Please note that poor investment returns and/or a further decrease in current membership levels could accelerate insolvency.



SECTION II – RISK ANALYSIS

Deterministic Scenarios/Stress Testing

In this section we compare the baseline projection with other scenarios to investigate how the risks identified earlier can impact the financial condition of the Plan in the future.

The scenarios are listed below, and the results are summarized in the table to the right. On the following page we also show a summary of projections for six of the scenarios.

For Investment Risk we have analyzed:

- Return in 2022 being 10% lower or higher than expected (and returning 6.00% for all other future years); and
- Return in all future years being 1% lower or higher than expected.

For Contribution Risk we have analyzed:

- Current membership decreasing at an annual rate of 25% over the 20-year projection period;
- Current membership remaining level over the 20-year projection period; and
- Only 50% of the expected future Withdrawal Liability payments are paid.

Under the scenarios explored, the projected insolvency date ranges between 2031 to 2034 before ARPA and would be extended beyond 2051 after receiving special financial assistance under ARPA. We believe the scenarios illustrated cover the primary risks facing the Plan, but a more detailed assessment can be valuable to enhance the understanding of the risks identified.

Table II-1 Scenario	Year of Insolvency
Baseline, prior to ARPA (6.00% in all years)	2033
Investment Risk (with 6% per year membership declines)	
A. One-year negative shock (-4.00% in 2022, 6.00% thereafter)	2031
B. One-year positive shock (16.00% in 2022, 6.00% thereafter)	2034
C. 1% less than expected (5.00% in all years)	2032
D. 1% higher than expected (7.00% in all years)	2033
Contribution Risk (with 6.00% returns in all years)	
E. 25% per year membership decline	2033
F. Level membership	2033
G. 50% collection of withdrawal liability payments	2032
Impact of the American Rescue Plan Act of 2021	
H. With Baseline Assumptions	after 2051

SECTION III – ASSETS

Assets at Market Value

Market values represent "snap-shot" or "cash-out" values, which provide the principal basis for measuring financial performance from one year to the next.

Table III-1
Statement of Assets at Market Value, December 31,

Assets	**2020**	**2021**
Equity investments	$ 357,818,314	$ 378,448,877
Fixed income investments	109,725,588	111,551,775
Real estate funds	51,779,456	46,313,440
Private equity limited partnerships	44,513,066	46,472,443
Short-Term investments	11,146,573	12,462,680
Receivables		
Employer contributions	$ 457,865	$ 351,487
Interest and dividends	119,320	45,501
Other		
Other assets	326,004	116,138
Liabilities		
Accounts payable and liabilities	$ (1,030,867)	$ (879,087)
Payable for securities purchased	0	0
Market Value of Assets for Valuation Purposes	$ 574,855,319	$ 594,883,254
Withdrawal Liability Receivables	79,552,163	77,368,411
Market Value of Assets on Financial Statement	$ 654,407,482	$ 672,251,665

Assets at Actuarial Value

Due to the projected insolvency, asset smoothing is no longer necessary, and the Trustees decided to recognize all actuarial asset gains and losses immediately by setting the Actuarial Value of Assets equal to the Market Value of Assets beginning January 1, 2017.

SECTION III – ASSETS

Changes in Market Value

The components of change in market value are as follows:

- Contributions
- Benefit payments
- Expenses
- Investment income (realized and unrealized)

The specific changes since the prior valuation are presented below.

Table III-2
Statement of Changes in Market Value

Market Value of Assets - January 1, 2021	**$**	**574,855,319**
Employer Contributions	$	4,144,391
Withdrawal Liability Payments		13,476,512
Net Investment Income		86,680,743
Benefit Payments		(81,419,020)
Administrative Expenses*		(2,854,691)
Market Value of Assets - January 1, 2022	**$**	**594,883,254**

**Administrative expenses include $6,000 from withdrawal liability income for withdrawal liability estimate processing fees.*

The assets measured at market value earned 16.01% during the year ending December 31, 2021 compared to the prior year assumption of 6.00%.

Actuarial Gains / (Losses) from Investment Performance

We derive the actuarial investment gain/(loss) in the following table.

Table III-3
Market Value Asset Gain/(Loss)

January 1, 2021 Market Value	**$**	**574,855,319**
Employer Contributions	$	4,144,391
Withdrawal Liability Payments		13,476,512
Admininistrative Expenses*		(2,854,691)
Benefit Payments		(81,419,020)
Expected Investment Income (6.00%)		32,520,861
Expected Value as of December 31, 2021	$	540,723,372
January 1, 2022 Market Value	**$**	**594,883,254**
Investment Gain	$	54,159,882
Administrative Expense Loss		(210,742)
Total Net Asset Gain	**$**	**53,949,140**
Return		16.01%

SECTION IV – LIABILITIES

In this section, we present detailed information on plan liabilities including:

- **Disclosure** of plan liabilities at January 1, 2021, and January 1, 2022, and
- Statement of **changes** in these liabilities during the year.

Disclosure

Several types of liabilities are calculated and presented in this report. Each type of liability is distinguished by the purpose for which it is used.

- **Present Value of Future Benefits:** Used for analyzing the financial outlook of the Plan, this represents the amount of money needed today to fully pay off all the future benefits of the Plan, assuming participants continue to accrue benefits.
- **Actuarial Liabilities:** Used in determining minimum funding requirements, maximum tax-deductible contributions, and long-term funding targets, this amount is based on the Unit Credit Cost Method. This liability represents the present value of benefits accrued to date using funding assumptions and assuming no further accrual of benefits.
- **Accrued Liabilities:** Used for communicating the current levels of liabilities, this amount is also called the Present Value of Accrued Benefits. It is also based on the Unit Credit Cost Method.

  This liability must also be included in the Plan's financial statement for accounting disclosure purposes (FASB ASC Topic No. 960). However, the accounting disclosure must also include the present value of future administrative expenses. This sum is called the Present Value of Accumulated Benefits.

  These liabilities can be used to establish comparative benchmarks with information from other plans' financial reports.
- **Vested Liabilities:** This liability represents the portion of the accrued liabilities that are vested.
- **Current Liabilities:** Used for Federal government compliance purposes, the calculation of this liability is defined by federal regulations and is used to determine maximum allowable tax-deductible contributions.

The table on the following page discloses each of these liabilities for the current valuation and the prior one. With respect to each disclosure, a subtraction of the appropriate value of plan assets yields, for each respective type, a surplus or unfunded liability.

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SECTION IV – LIABILITIES

Table IV-1
Liabilities/Net Surplus (Unfunded)

	1/1/2021	1/1/2022
Present Value of Future Benefits		
Active Participant Benefits	$ 90,024,690	$ 70,653,445
Retiree and Inactive Benefits	940,804,517	931,420,503
Present Value of Future Benefits	**$ 1,030,829,207**	**$ 1,002,073,948**
Actuarial Liability		
Active Participant Benefits	$ 72,590,534	$ 55,826,087
Retiree and Inactive Benefits	940,804,517	931,420,503
Actuarial Liability	**$ 1,013,395,051**	**$ 987,246,590**
Actuarial Value of Assets	574,855,319	594,883,254
Net Surplus (Unfunded)	**$ (438,539,732)**	**$ (392,363,336)**
Percent Funded	56.7%	60.3%
Accumulated Benefits (FASB ASC 960)		
Accumulated Benefits (FASB ASC 960)	$ 1,047,496,211	$ 1,021,869,273
Market Value of Assets	574,855,319	594,883,254
Net Surplus (Unfunded)	**$ (472,640,892)**	**$ (426,986,019)**
Percent Funded	54.9%	58.2%
Vested Liability (FASB ASC 960)		
Accumulated Benefits (FASB ASC 960)	$ 1,047,496,211	$ 1,021,869,273
Less Present Value of Non-Vested Benefits & Expected Administrative Expenses	35,188,807	35,590,391
Vested Liability	**$ 1,012,307,404**	**$ 986,278,882**
Market Value of Assets	574,855,319	594,883,254
Net Surplus (Unfunded)	**$ (437,452,085)**	**$ (391,395,628)**
Percent Funded	56.8%	60.3%
Current Liability (RPA '94)	$ 1,448,825,423	$ 1,433,614,177
Market Value of Assets	574,855,319	594,883,254
Net Surplus (Unfunded)	**$ (873,970,104)**	**$ (838,730,923)**
Percent Funded	39.7%	41.5%
RPA '94 Prescribed Interest Rate	2.43%	2.22%

SECTION IV – LIABILITIES

Allocation of Liabilities by Type

The Plan's participants may qualify for a benefit on death, termination, or disability as well as on retirement. The value of the liabilities arising from each of these sources is shown in the following table.

Table IV-2
Allocation of Liabilities by Type
January 1, 2022

Benefit Type	Retirement	Termination	Death	Disability	Total
Unit Credit Normal Cost	$ 1,455,474	$ 215,012	$ 42,318	$ 257,508	$ 1,970,312
Unit Credit Actuarial Liability					
Actives	$ 46,050,445	$ 2,615,602	$ 976,618	$ 6,183,422	$ 55,826,087
Terminated Vesteds	0	236,665,844	4,158,286	728,205	241,552,335
Retirees and Beneficiaries	566,672,681	0	88,517,180	34,678,307	689,868,168
Total	**$ 612,723,126**	**$ 239,281,446**	**$ 93,652,084**	**$ 41,589,934**	**$ 987,246,590**
RPA Current Liability Normal Cost	$ 2,843,696	$ 784,564	$ 56,509	$ 626,841	$ 4,311,610
RPA Current Liability					
Actives	$ 79,749,990	$ 8,004,491	$ 1,158,437	$ 13,163,398	$ 102,076,316
Terminated Vesteds	0	428,434,991	7,468,084	1,254,576	437,157,651
Retirees and Beneficiaries	733,952,131	0	108,636,860	51,791,219	894,380,210
Total	**$ 813,702,121**	**$ 436,439,482**	**$ 117,263,381**	**$ 66,209,193**	**$ 1,433,614,177**
Vested RPA Current Liability					
Actives	$ 80,344,599	$ 6,365,710	$ 1,129,408	$ 12,811,012	$ 100,650,729
Terminated Vesteds	0	428,434,991	7,468,084	1,254,576	437,157,651
Retirees and Beneficiaries	733,952,131	0	108,636,860	51,791,219	894,380,210
Total	**$ 814,296,730**	**$ 434,800,701**	**$ 117,234,352**	**$ 65,856,807**	**$ 1,432,188,590**

SECTION IV – LIABILITIES

Changes in Liabilities

Each of the liability measures shown in the preceding table changes at successive valuations as the experience of the Plan emerges. The liabilities change for any of several reasons, including:

- New hires since the last valuation
- Benefits accrued since the last valuation
- Plan amendments and bargaining agreement changes
- Interest on Actuarial Liabilities
- Benefits paid to retirees and beneficiaries
- Participants leaving employment at rates different than expected
- Changes in actuarial assumptions
- Changes in actuarial methods

The following tables show the change in the Actuarial Liability since the last valuation. There were no changes to assumptions, methods or plan provisions since last year.

Table IV-3
Actuarial Liability (Gain)/Loss

Actuarial Liability, January 1, 2021	$	1,013,395,051
Actuarial Liability, January 1, 2022	$	987,246,590
Liability Increase / (Decrease)	$	(26,148,461)
Change due to:		
Plan Amendment	$	0
Assumption Change		0
Method Change		0
Accrual of Benefits		2,393,814
Benefit Payments		(81,419,020)
Interest Accrual		58,540,340
Actuarial (Gain)/Loss		(5,663,595)
Total	**$**	**(26,148,461)**

SECTION IV – LIABILITIES

Table IV-4
Development if Actuarial Gain/(Loss)
For the Year Ended December 31, 2021

1. Unfunded Actuarial Liability at Start of Year	$ 438,539,732
2. Normal Cost and Expense at Start of Year	4,967,722
3. Interest on 1. and 2. to End of Year	26,610,447
4. Contributions and Withdrawal Liability Payments for Year	17,620,903
5. Interest on 4. to End of Year	520,927
6. Increase in Unfunded Actuarial Liability Due to Changes in Assumptions	0
7. Increase in Unfunded Actuarial Liability Due to Changes in Funding Method	0
8. Increase in Unfunded Actuarial Liability Due to Changes in Asset Method	0
9. Expected Unfunded Actuarial Liability at End of Year [1. + 2. + 3. – 4. – 5. + 6. + 7. + 8.]	$ 451,976,071
10. Actual Unfunded Actuarial Liability at End of Year, not less than zero	$ 392,363,336
11. Actuarial Gain / (Loss) [9. – 10.]	$ 59,612,735
(a) Liability Gain / (Loss)	5,663,595
(b) Investment Gain / (Loss)	54,159,882
(c) Administrative Expense Gain / (Loss)	(210,742)

SECTION V – CONTRIBUTIONS

In this section, we present detailed information on Plan contributions from two perspectives:

- **Minimum Required Contributions**, and
- **Government Limits** that could affect the above.

Minimum Required Contributions

Minimum Required Contributions (MRC) are determined in three parts.

The first part is the Unit Credit Normal Cost. This is the cost to the Plan of providing the benefit expected to be earned in the current year for each active participant. The normal cost includes a provision for Plan expenses.

The second part is an amortization payment to pay off the Unfunded Actuarial Liability. The Unfunded Actuarial Liability is the difference between the actuarial assets of the Plan at the valuation date and the assets the Plan should hold as determined by the actuarial funding method. For this Plan, the funding method is the Unit Credit Cost Method.

Government Limits

ERISA and the Internal Revenue Code place various limits on the contributions made to qualified pension plans. The limits impact the minimum that must be paid, the maximum that can be deducted and the timing of contributions. To ensure that minimum contributions are met, pension plans are required to retain an Enrolled Actuary to complete Schedule MB to Form 5500 on an annual basis. Because the bargained contributions have been less than the minimum required in years past, the Plan has a Funding Deficiency.

The MRC is shown below and is compared to various Government Limits and to previous actual and expected employer contributions. The table also shows the per capita MRC and per capita contributions.

Table V-1
Contributions

Minimum Required Contributions (MRC)	**2021**	**2022**
Normal Cost	$ 2,393,814	$ 1,970,312
Anticipated Expenses	2,573,908	2,625,386
Net Amortization Payment	43,745,441	25,171,776
Interest to End of Year	2,922,790	1,786,048
Total	**$ 51,635,953**	**$ 31,553,522**
Government Limits		
Maximum Deductible Contribution	$ 1,445,578,251	$ 1,398,037,018
MRC (before Funding Deficiency)	51,635,953	31,553,522
Funding Deficiency (End of Year)	(322,801,130)	*(359,176,030)*
Actual/*Estimated* Contributions		
A. Employer Contributions	$ 4,144,391	*$ 3,572,281*
B. Withdrawal Contributions	13,476,512	*10,556,714*
C. Total Contributions	$ 17,620,903	*$ 14,128,995*
Count of Active Participants	2,125	1,779
Per Capita Minimum Required Contribution	$ 24,299	$ 17,737
Per Capita Estimated Employer Contribution	$ 1,950	*$ 2,008*

SECTION V – CONTRIBUTIONS

The tables on the following pages show the IRS Funding Standard Account, as well as the development of the minimum and maximum contributions for 2021 and 2022.

Table V-2
Funding Standard Account for 2021 and 2022 Plan Years

	2021	2022
1. Charges for Plan Year		
(a) Prior Year Funding Deficiency	$ 272,931,139	$ 322,801,130
(b) Normal Cost Plus Expenses	4,967,722	4,595,698
(c) Amortization Charges	82,503,255	69,207,547
(d) Interest on (a), (b), and (c) to Year End	21,624,127	23,796,263
(e) Total Charges	$ 382,026,243	$ 420,400,638
2. Credits for Plan Year		
(a) Contributions and WL Payments (Actual / *Expected*)	17,620,903	*14,128,995*
(b) Amortization Credits	38,757,814	44,035,771
(c) Interest on (a) and (b) to Year End	2,846,396	*3,059,842*
(d) Full Funding Limit Credit	0	0
(e) Total Credits	$ 59,225,113	*$ 61,224,608*
3. Credit Balance / (Funding Deficiency) at End of Year [2.(e) – 1.(e)]	$ (322,801,130)	*$ (359,176,030)*

SECTION V – CONTRIBUTIONS

Table V-3
Calculation of the Maximum Deductible Contribution
For the Plan Year Starting January 1, 2022

1. "Fresh Start" Method	
(a) Normal Cost Plus Expenses	$ 4,595,698
(b) Net Charge to Amortize Unfunded Actuarial Liability over 10 years	50,292,081
(c) Interest on (a) and (b)	3,293,267
(d) Total	$ 58,181,046
(e) Minimum Required Contribution at Year End	373,722,720
(f) Larger of (d) and (e)	373,722,720
(g) Full Funding Limitation as of Year End	704,898,330
(h) Maximum Deductible Contribution, lesser of (f) and (g)	**$ 373,722,720**
2. PPA 2006 Full Funding Limit	
(a) RPA 1994 Current Liability at Start of Year (2.22%)	$ 1,433,614,177
(b) Present Value of Benefits Estimated to Accrue during Year	4,311,610
(c) Expected Benefit Payments [Current Liability]	(82,657,897)
(d) Net Interest on (a), (b) and (c) at Current Liability Interest Rate	31,009,486
(e) Expected Current Liability at End of Year, [(a) + (b) + (c) + (d)]	$ 1,386,277,376
(f) 140% of (e)	1,940,788,326
(g) Actuarial Value of Assets at Start of Year	594,883,254
(h) Expected Benefit Payments [Funding]	(82,600,123)
(i) Expected Expenses	(2,625,386)
(j) Net Interest on (g), (h) and (i) at Valuation Interest Rate	33,093,563
(k) Estimated Value of Assets, [(g) + (h)+ (i) + (j)]	$ 542,751,308
(l) Unfunded Current Liability at Year End [(f) – (k), not less than $0]	**$ 1,398,037,018**
3. Maximum Deductible Contribution at Year End, greater of 1.(h) and 2.(l)	**$ 1,398,037,018**

SECTION V – CONTRIBUTIONS

Table V-4
Schedule of Amortization Charges Required for Minimum Required Contribution
As of January 1, 2022

Type of Base	Date Established	Initial Amortization Years	1/1/2022 Outstanding Balance	Remaining Amortization Years	Beginning of Year Amortization Amount
1. Plan Amendment	1/1/2007	30.00	$ 473,770	15.00	$ 46,019
2. Change in Assumptions	1/1/2007	30.00	18,338,307	15.00	1,781,286
3. Plan Amendment	1/1/2008	15.00	95,566	1.00	95,566
4. Plan Amendment	1/1/2009	15.00	67,412	2.00	34,687
5. Actuarial Loss	1/1/2009	15.00	41,873,303	2.00	21,546,458
6. Actuarial Loss	1/1/2011	15.00	12,920,393	4.00	3,517,656
7. Plan Amendment	1/1/2012	15.00	118,091	5.00	26,447
8. Change in Assumptions	1/1/2012	15.00	12,465,455	5.00	2,791,749
9. Actuarial Loss	1/1/2012	15.00	29,335,275	5.00	6,569,895
10. Plan Amendment	1/1/2013	15.00	146,329	6.00	28,073
11. Actuarial Loss	1/1/2013	15.00	27,348,410	6.00	5,246,834
12. Plan Amendment	1/1/2014	15.00	100,732	7.00	17,023
13. Change in Assumptions	1/1/2015	15.00	27,562,184	8.00	4,187,266
14. Change in Asset Method	1/1/2017	10.00	15,541,845	5.00	3,480,734
15. Actuarial Loss	1/1/2019	15.00	63,852,048	12.00	7,184,984
16. Change in Assumptions	1/1/2019	15.00	53,851,345	12.00	6,059,650
17. Change in Assumptions	1/1/2020	15.00	61,869,742	13.00	6,593,220
Total Charges			**$ 365,960,207**		**$ 69,207,547**

SECTION V – CONTRIBUTIONS

Table V-5
Schedule of Amortization Credits Required for Minimum Required Contribution
As of January 1, 2022

Type of Base	Date Established	Initial Amortization Years	1/1/2022 Outstanding Balance	Remaining Amortization Years	Beginning of Year Amortization Amount
1. Actuarial Gain	1/1/2008	15.00	$ 76,486	1.00	$ 76,486
2. Plan Amendment	5/1/2009	15.00	9,819,453	2.33	4,372,281
3. Plan Amendment	1/1/2010	15.00	40,331	3.00	14,235
4. Actuarial Gain	1/1/2010	15.00	15,229,754	3.00	5,375,094
5. Plan Amendment	1/1/2011	15.00	13,279,917	4.00	3,615,539
6. Actuarial Gain	1/1/2014	15.00	23,548,184	7.00	3,979,532
7. Actuarial Gain	1/1/2015	15.00	15,421,783	8.00	2,342,888
8. Plan Amendment	1/1/2016	15.00	285,259	9.00	39,566
9. Actuarial Gain	1/1/2016	15.00	4,251,179	9.00	589,639
10. Change in Assumptions	1/1/2016	15.00	6,188,355	9.00	858,326
11. Actuarial Gain	1/1/2017	15.00	4,105,786	10.00	526,268
12. Change in Assumptions	1/1/2017	15.00	11,901,774	10.00	1,525,537
13. Change in Funding Method	1/1/2017	10.00	5,244,555	5.00	1,174,564
14. Actuarial Gain	1/1/2018	15.00	28,637,927	11.00	3,425,554
15. Actuarial Gain	1/1/2020	15.00	60,479,582	13.00	6,445,075
16. Actuarial Gain	1/1/2021	15.00	38,274,941	14.00	3,884,723
17. Actuarial Gain	1/1/2022	15.00	59,612,735	15.00	5,790,464
Total Credits			**$ 296,398,001**		**$ 44,035,771**
Net Charge			**$ 69,562,206**		**$ 25,171,776**

SECTION V – CONTRIBUTIONS

Table V-6
Balance Test as of January 1, 2022

1. Net Outstanding Amortization Bases	$ 69,562,206
2. Funding Deficiency at Start of Year	(322,801,130)
3. Unfunded Actuarial Liability at Start of Year from Funding Equation [1. – 2.]	$ 392,363,336
4. Actuarial Liability at Start of Year	$ 987,246,590
5. Actuarial Value of Assets at Start of Year	594,883,254
6. Unfunded Actuarial Liability at Start of Year from Liability Calculation [4. – 5.]	$ 392,363,336

The Plan passes the Balance Test because line 3. equals line 6.

SECTION V – CONTRIBUTIONS

Table V-7
Development of Full Funding Limitation
For the Year Starting January 1, 2022

	Minimum	*Maximum*
1. Unit Credit Actuarial Liability Calculation		
(a) Actuarial Liability	$ 987,246,590	$ 987,246,590
(b) Normal Cost with Expenses	4,595,698	4,595,698
(c) Lesser of Market Value and Actuarial Value of Assets	594,883,254	594,883,254
(d) Credit Balance at Start of Year	0	0
(e) Net Interest on (a), (b), (c) and (d)	23,817,542	23,817,542
(f) Actuarial Liability Full Funding Limit [(a) + (b) – (c) + (d) + (e)]	**$ 420,776,576**	**$ 420,776,576**
2. Full Funding Limit Override (RPA '94)		
(a) RPA 1994 Current Liability at Start of Year (2.22%)	$ 1,433,614,177	$ 1,433,614,177
(b) Present Value of Benefits Estimated to Accrue during Year	4,311,610	4,311,610
(c) Expected Benefit Payments [Current Liability]	(82,657,897)	(82,657,897)
(d) Net Interest on a., b. and c. at Current Liability Interest Rate	31,009,486	31,009,486
(e) Expected Current Liability at End of Year, [(a) + (b) + (c) + (d)]	$ 1,386,277,376	$ 1,386,277,376
(f) 90% of (e)	1,247,649,638	1,247,649,638
(g) Actuarial Value of Assets at Start of Year	594,883,254	594,883,254
(h) Expected Benefit Payments [Funding]	(82,600,123)	(82,600,123)
(i) Expected Expenses	(2,625,386)	(2,625,386)
(j) Net Interest on (g), (h) and (i) at Valuation Interest Rate	33,093,563	33,093,563
(k) Estimated Value of Assets, [(g) + (h)+ (i)+ (j)]	$ 542,751,308	$ 542,751,308
(l) RPA 1994 Full Funding Limit Override [(f) – (k)]	**$ 704,898,330**	**$ 704,898,330**
3. Full Funding Limitation at End of Year, greater of 1.(f) and 2.(l)	**$ 704,898,330**	**$ 704,898,330**

SECTION VI – ACCOUNTING DISCLOSURES

Table VI-1
Present Value of Accumulated Benefits as of January 1, 2022
In Accordance with FASB ASC Topic 960

	Amounts	Participants
1. Actuarial Present Value of Vested Benefits		
For Retirees and Beneficiaries	$ 689,868,168	15,256
Deferred Inactives	241,552,335	7,385
Active Participants	54,858,379	1,115
Vested Benefits	$ 986,278,882	23,756
2. Non-vested Benefits	$ 967,708	664
3. Present Value of Expected Administrative Expenses*	$ 34,622,683	
4. Accumulated Benefits	$ 1,021,869,273	24,420
5. Market Value of Assets	$ 594,883,254	
6. Funded Ratios		
Vested Benefits (without Administrative Expenses)	60.3%	
Accumulated Benefits (with Administrative Expenses)	58.2%	

Table VI-2
Reconciliation of Present Value of Accumulated Benefits

1. Actuarial Present Value at Start of Prior Year (without Administrative Expenses)	$ 1,013,395,051
2. Increase / (decrease) over Prior Year due to:	
Accrual of Benefits	$ 2,393,814
Benefit Payments	(81,419,020)
Interest Accrual	58,540,340
Plan Amendment	0
Assumption Change	0
Experience (Gains)/Losses	(5,663,595)
Total	$ (26,148,461)
3. Actuarial Present Value at End of Prior Year	$ 987,246,590
4. Present Value of Expected Administrative Expenses*	$ 34,622,683
5. Actuarial Present Value at End of Prior Year (with Administrative Expenses)	$ 1,021,869,273

** The present value of expected administrative expenses is estimated to be 3.51% of the Accrued Benefits liabilities.*

SECTION VII – WITHDRAWAL LIABILITY

The allocation of the Unfunded Vested Benefits (UVB) is determined under the Presumptive method as defined in the Multiemployer Pension Plan Amendments Act of 1980 (MEPPA). If an employer withdraws before December 31, 2022, they will be assessed Withdrawal Liability based on their share of the UVB. The Present Value of Vested Benefits (PVVB) is valued using a 5.00% interest rate assumption.

Under the Presumptive method, "pools" are created each year based on the change in the Plan's UVB. The UVB is calculated as the difference between the PVVB and the Market Value of Assets (MVA). In addition, the pools may include an adjustment for uncollectible Withdrawal Liability for prior withdrawn employers and statutory limits. Each pool is then written down over 20 years and allocated among the employers based on their proportional share of contributions.

Table VII-1
Withdrawal Liability
Unfunded Vested Benefits

	December 31, 2020	December 31, 2021
1. Present Value of Vested Benefits		
(a) Retirees and Beneficiaries	$ 755,270,866	$ 739,049,995
(b) Deferred Inactives	274,930,198	280,454,894
(c) Active Participants	87,478,552	66,971,702
(d) Total	$ 1,117,679,616	$ 1,086,476,591
2. Market Value of Assets	$ 574,855,319	$ 594,883,254
3. Unfunded Vested Benefits [1.(d) – 2.]	$ 542,824,297	$ 491,593,337
4. Funded Ratio [2. ÷ 1.(d)]	51.4%	54.8%
5. Affected Benefits*	$ 14,065,627	$ 11,570,436

** The initial amount of $30,970,438 was established December 31, 2010 and is being amortized over 15 years per PBGC Technical Update 10-3.*

APPENDIX A – MEMBERSHIP INFORMATION

The data for this valuation was provided by the Plan Administrator as of January 1, 2022. Cheiron did not audit any of the data. However, we did perform an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23, Data Quality.

The following is a list of data charts contained in this section:

- Data Reconciliation from January 1, 2021 to January 1, 2022
- Age/Service Distribution for Active Participants
- Counts and Average Benefit Amount by Age for Terminated Vested Participants
- Counts and Average Benefit Amount by Age for Retirees, Beneficiaries, and Disabled Participants

Table A-1
Data Reconciliation
from January 1, 2021 to January 1, 2022

	Actives	Terminated Vested	Retired **	QDROs	Disabled **	Deferred Disabled	Beneficiaries *	Deferred Beneficiaries	Total
1. January 1, 2021 valuation	**2,125**	**7,159**	**11,480**	**140**	**837**	**79**	**3,402**	**187**	**25,409**
2. Additions									
(a) New entrants	192	0	0	0	0	0	0	0	192
(b) QDRO	0	0	0	6	0	0	0	0	6
(c) Data Updates	0	3	1	0	0	6	31	0	41
(d) Total	192	3	1	6	0	6	31	0	239
3. Reductions									
(a) Terminated - not vested	(231)	0	0	0	0	0	0	0	(231)
(b) Deaths without beneficiary	(5)	(1)	(620)	(6)	(58)	(1)	(251)	0	(942)
(c) Certain period expired	0	0	0	0	0	0	(21)	0	(21)
(d) Lump Sum	0	(8)	0	0	0	0	0	0	(8)
(e) Data Updates	0	0	0	0	(3)	0	(22)	(1)	(26)
(f) Total	(236)	(9)	(620)	(6)	(61)	(1)	(294)	(1)	(1,228)
4. Changes in status									
(a) Terminated - vested	(249)	249	0	0	0	0	0	0	0
(b) Returned to work	13	(13)	0	0	0	0	0	0	0
(c) Retired	(60)	(211)	271	0	0	0	0	0	0
(d) Disabled	0	(5)	0	0	5	0	0	0	0
(e) Died with beneficiary	(6)	(21)	(159)	0	(13)	0	236	(37)	0
(f) Total	(302)	(1)	112	0	(8)	0	236	(37)	0
5. January 1, 2022 valuation	**1,779**	**7,152**	**10,973**	**140**	**768**	**84**	**3,375**	**149**	**24,420**

** Excludes 8 Beneficiaries that have been in Suspended Status for at least 3 years prior to the 1/1/2022 valuation date.*
*** Excludes 21 Retirees and 2 Disableds that have been in Suspended Status for at least 3 years prior to the 1/1/2021 valuation date.*

APPENDIX A – MEMBERSHIP INFORMATION

Table A-2
Distribution of Active Members
By Age and Service as of January 1, 2022
Counts By Age/Service

Age	Service: Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total
Under 25	4	31	3	0	0	0	0	0	0	0	38
25 to 29	2	82	30	1	0	0	0	0	0	0	115
30 to 34	4	84	44	6	1	0	0	0	0	0	139
35 to 39	6	72	50	15	16	5	0	0	0	0	164
40 to 44	4	83	44	23	18	9	1	0	0	0	182
45 to 49	32	75	49	35	27	27	6	0	0	0	251
50 to 54	2	60	38	25	38	31	19	9	1	0	223
55 to 59	2	68	45	34	36	26	24	11	16	6	268
60 to 64	3	32	43	27	29	20	16	13	19	51	253
65 to 69	0	10	21	14	20	21	7	3	4	15	115
70 & up	0	7	11	1	5	2	2	0	0	3	31
Total	59	604	378	181	190	141	75	36	40	75	1,779

Average Age = 48.6 Average Service = 11.4

APPENDIX A – MEMBERSHIP INFORMATION

Table A-3
Age Distribution of Inactive Participants
Participants Entitled to Future Benefits as of January 1, 2022

	Terminated Vesteds		Terminal Disability with Deferred Benefits		Surviving Spouses and Beneficiaries with Deferred Benefits		Total	
Age	Number	Average Monthly Benefit	Number	Average Monthly Benefit	Number	Average Monthly Benefit	Number	Average Monthly Benefit
Under 30	37	$ 54	0	$ 0	7	$ 194	44	$ 76
30-34	116	80	0	0	3	164	119	82
35-39	244	132	0	0	4	320	248	135
40-44	403	248	0	0	2	149	405	248
45-49	649	330	0	0	8	528	657	332
50-54	1,066	398	5	134	47	283	1,118	392
55-59	1,620	437	9	58	27	190	1,656	431
60-64	2,033	451	32	122	32	272	2,097	443
65 & Over	984	262	38	101	19	231	1,041	256
Total	**7,152**	**$ 373**	**84**	**$ 106**	**149**	**$ 263**	**7,385**	**$ 367**

APPENDIX A – MEMBERSHIP INFORMATION

Table A-4
Age Distribution of Inactive Participants
Pensioners and Beneficiaries Receiving Benefits as of January 1, 2022

	Disability Retirements		Normal, Early Deferred Vested, & QDRO Retirements		Surviving Spouses and Beneficiaries Receiving Benefits		Total	
Age	Number	Average Monthly Benefit	Number	Average Monthly Benefit	Number	Average Monthly Benefit	Number	Average Monthly Benefit
Under 55	1	$ 1,129	0	$ 0	79	$ 317	80	$ 327
55-59	10	619	5	372	29	335	44	404
60-64	46	520	137	1,034	87	395	270	740
65-69	137	498	1,316	626	151	360	1,604	590
70-74	167	520	2,126	522	313	375	2,606	504
75-79	169	456	2,398	506	512	406	3,079	487
80 & Over	238	383	5,131	405	2,204	266	7,573	364
Total	**768**	**$ 462**	**11,113**	**$ 483**	**3,375**	**$ 307**	**15,256**	**$ 443**

APPENDIX B – SUMMARY OF MAJOR PLAN PROVISIONS

This summary of plan provisions provides an overview of the major provisions of the pension plan used in the actuarial valuation. It is not intended to replace the more precise language of the plan document, and if there is any difference between the description of the plan herein and the actual text of the plan document, the plan document will govern.

1. **Plan Year**

   January 1 through December 31

2. **Pension Credit Year**

   January 1 through December 31

3. **Normal Pension**

   Age Requirement: 65

   Service Requirement: 10 years of service, or 5 years of service including one hour of service on January 1, 1989 or later.

   Amount: 1.7% of all monies contributed to the plan prior to January 1, 1977, 1% of all monies contributed to the plan from January 1, 1977 to December 31, 1983, 1.3% of all monies contributed to the plan from January 1, 1984 to June 30, 1985, 1.7% of all monies contributed to the plan from July 1, 1985 to June 30, 1987, 3.0% of all monies contributed to the plan from July 1, 1987 to December 31, 1992, 3.0% of all monies credited to the Participant's account from January 1, 1993 to June 30, 1998, 3.25% of all monies credited to the Participant's account from July 1, 1998 to December 31, 2002, 2.50% of all monies credited to the Participant's account from January 1, 2003 to April 30, 2009 and 1.00% of all monies credited to the Participants' account on or after May 1, 2009.

   Plus 1% of the average monthly contributions per year of past service from January 1, 1968 to December 31, 1976.

   In addition, all benefits accrued through December 31, 1997 are increased by 12% and all benefits accrued through December 31, 1998 are increased by 10%.

4. **Early Retirement**

   Age Requirement: 62

   Service Requirement: 20 years of service (5 years of service for disabled participants)

   Amount: Normal benefit accrued, reduced as follows:

Commencement Age	Reduction Factor
64	.9016
63	.8146
62	.7375

5. **Vesting**

   Age Requirement: None

   Service Requirement: 10 years of service, or 5 years of service including one hour of service on January 1, 1989 or later.

   Normal Retirement Age: 65

APPENDIX B – SUMMARY OF MAJOR PLAN PROVISIONS

6. Terminal Disability Lump Sum Benefit

Age Requirement: None

Service Requirement: Participants who are vested, have been awarded a Social Security Disability Pension with a date of entitlement prior to May 1, 2009, and provided two written statements from physicians stating that the disability will lead to the Participant's death within one year of application.

Amount: A lump sum equal to the greater of 36 times the monthly Normal Pension Benefit or 100% of employer contributions. If the Participant is still alive at his Normal Retirement Age, he will receive a monthly pension equal to his Normal Pension Benefit minus the actuarial equivalent of the lump sum received.

7. Pre-Retirement Death Benefit

Age Requirement: None

Service Requirement: Participants who are vested and have had at least $250 of contributions made on their behalf.

Amount: Beneficiaries of married employees who die prior to retirement will receive a benefit under Option B on the date that the participant would have been eligible for a pension benefit. Beneficiaries of unmarried participants receive 100% of employer contributions payable in 60 equal monthly installments commencing at the participant's earliest retirement age.

8. Post-Retirement Death Benefit

Husband and Wife: If married, pension benefits are paid in the form of a 50% joint and survivor annuity (Option B), unless this form is rejected by employee and spouse. If not rejected, the benefit amount otherwise payable is reduced to reflect the joint and survivor coverage. If Option B has been rejected by employee and spouse or is not applicable, benefits are payable for the life of the employee without reduction, or in any other available optional form elected by the employee in an actuarially equivalent amount.

9. Optional Forms of Pension

- Life only
- 100% joint and survivor (Option A)
- 50% joint and survivor (Option B)
- Life with 10-year certain (Option C)
- 75% joint and survivor (Option D)

10. Participation

The earlier of the first day of the month following the month:

i) during which the total employer contributions exceed $250, provided contributions were made during each of twelve or more calendar months, or

ii) during which the employee worked 1,000 hours during any 12-month consecutive period.

APPENDIX B – SUMMARY OF MAJOR PLAN PROVISIONS

11. Benefit Credit

Years of Past Service: The number of months prior to the employee's Applicable Effective Date provided such period of employment began prior to January 1, 1967, divided by 12.

Years of Future Service: In the fiscal year in which the Applicable Effective Date falls, an employee will be credited with the number of months between the Applicable Effective Date and the end of the fiscal year. Thereafter, a year of future service shall be granted at the rate of one year for each fiscal year during which employer contributions are made on his behalf or the Participant completed 1,000 hours of service.

12. Vesting Credit

The number of years of past service credit plus future service credit as outlined above.

13. Contribution Rate

Varies by employer based on rate per hour, shift, or percent of salary.

14. Changes in Plan Provisions since Last Valuation

None

APPENDIX C – ACTUARIAL METHODS AND ASSUMPTIONS

A. Actuarial Assumptions

1. **Valuation Date**

   January 1, 2022

2. **Investment Return (or Discount Rate)**

   6.00% for funding and ASC 960 disclosure purposes

   5.00% for Withdrawal Liability purposes

   2.22% for determining RPA ’94 current liability

   All investment returns are net of investment expenses.

3. **Mortality**

   Funding

   Healthy Lives: RP-2014 Healthy Blue Collar Mortality Table, with full generational projection using Scale MP-2016.

   Disabled Lives: RP-2014 Disabled Retiree Mortality Table, with full generational projection using Scale MP-2016.

   In accordance with Actuarial Standard of Practice No. 35, we have considered the effect of mortality improvement prior to and subsequent to the measurement date in developing this assumption.

   RPA ’94 Current Liability
   IRS 2022 Static Mortality Table.

4. **Rates of Turnover**

   Terminations of employment for reasons other than death, disability or retirement are assumed to be in accordance with annual rates as shown below for illustrative ages.

Age	Rate (%)
20	11.91
25	11.59
30	10.83
35	9.41
40	7.73
45	5.96
50	3.84
55	1.41
60	0.14

   Turnover rates do not apply on or after early retirement.

5. **Rates of Disability**

   Illustrative rates of disablement are shown below:

Age	Rate (%)
20	0.08
25	0.08
30	0.08
35	0.09
40	0.14
45	0.27
50	0.60
55	1.28
60	2.61

APPENDIX C – ACTUARIAL METHODS AND ASSUMPTIONS

6. Rates of Retirement

Age*	Rate (%)
62	30
63-64	15
65-66	30
67-68	25
69-70	20
71	75
72	100

**If eligible*

7. Rates of Retirement for Inactive Vested Participants

Age*	Rate (%)
62	50
63-64	25
65	55
66	25
67-71	10
72	100

**If eligible*

8. Delayed Retirement Factors

Inactive vested participants who are assumed to commence receipt of benefits after attaining normal retirement age qualify for delayed retirement increases.

9. Inactive Vested Participants

It is assumed that 90% of inactive participants past their required beginning date are either deceased without a surviving spouse or will not collect a benefit from this Plan.

Inactive vested participants who are assumed to commence receipt of benefits after attaining normal retirement age qualify for delayed retirement increases of 1% per month beyond normal retirement age.

10. Annuitants

Annuitant records that have been reported as not being in pay status for the last 3 years are not included for valuation purposes.

11. Definition of Active

Employees for whom contributions were made for 50 or more shifts, excluding those who have retired as of the valuation date and those who worked for an employer that withdrew prior to the valuation date.

12. Future Benefit Accrual

Same as experienced during the Plan Year preceding the valuation date.

13. Family Composition

65% assumed married with the male spouse three years older than his wife.

APPENDIX C – ACTUARIAL METHODS AND ASSUMPTIONS

14. Form of Benefit

65% of the married population is assumed to elect the 100% joint and survivor form of payment. The remaining population is assumed to elect the life form of payment.

15. Unknown Data for Participants

Same as those exhibited by participants with similar known characteristics. If not specified, participants are assumed to be male.

16. Administrative Expenses

$2,703,000, payable mid-year, for the year beginning January 1, 2022 (or $2,625,386 payable at the beginning of the year).

For financial disclosure under FASB ASC 960 the present value of future administrative expenses is assumed to be 3.51% of Accrued Liability. This assumes the expense assumption increases 2.0% per year.

17. Changes in Assumptions since Last Valuation

- The RPA ’94 current liability interest rate was changed from 2.43% to 2.22% to comply with appropriate guidance and remains within the required corridor as prescribed by the IRS, in accordance with §412(l)(7)(C) of the Internal Revenue Code.
- The mortality table used to determine RPA ’94 current liability is the static mortality table as described under Regulation 1.430(h)(3)-1(a)(3). The 2021 table was updated to 2022 in accordance with IRS Notice 2022-22.
- The annual administration expense assumption was increased from $2,650,000 to $2,703,000.
- For financial disclosure under FASB Topic ASC 960, the future administrative expense assumption was increased from 3.37% of the Present Value of Accrued Benefits to 3.51%.

18. Justification of Assumptions

Economic

In accordance with Actuarial Standard of Practice No. 27, the justification for 6.00% discount rate is based on the Trustees risk preference, the Plan’s current asset allocation, and the investment managers capital market outlook.

Demographic

In accordance with Actuarial Standard of Practice No. 35, the demographic assumptions used in this report were originally from the prior actuary’s best estimates of demographic experience. These assumptions have been checked against the sources of liability gains and losses resulting from recent valuations and are not producing significant deviations from actual plan experience. As such, the demographic assumptions continue to be reasonable and represent our best estimate.

For purposes of calculating Current Liability per IRC §431(c)(6)-1, the static mortality table as described under Regulation §1.430(h)(3)-1(a)(3) was used.

APPENDIX C – ACTUARIAL METHODS AND ASSUMPTIONS

B. Actuarial Methods

Funding Method: Unit Credit Cost Method

The funding method for the valuation of liabilities used for this valuation is the Unit Credit method. This is one of a family of valuation methods known as accrued benefits methods. The chief characteristic of an accrued benefits method is that the funding pattern follows the pattern of benefit accrual.

Under the Unit Credit Funding Method, the normal cost for each participant is the present value of the benefit expected to be earned in the upcoming plan year. The Actuarial Liability, Accrued Liability, Present Value of Accrued Benefits, and the Present Value of Accumulated Benefits are the present value of each participant's current accrued benefit as of the valuation date.

One of the significant effects of this funding method is that, depending on the demographics of the population, the unit credit method tends to produce lower costs in the early years. There is a possibility that as the population ages, the annual cost could increase over time.

Asset Valuation Method

The Actuarial Value of Assets is equal to the Market Value of Assets.

Changes in Method since Last Valuation

None

Modeling Disclosures

In accordance with Actuarial Standard of Practice No. 56 (Modeling), the following disclosures are made:

Proval

Cheiron utilizes ProVal, an actuarial valuation software leased from Winklevoss Technologies (WinTech) to calculate liabilities, normal costs and project benefit payments. We have relied on WinTech as the developer of ProVal. We have reviewed ProVal as it relates to the Plan and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in the output of ProVal that would affect the contents of this actuarial valuation report.

Projection Model

Projections in Section II of this actuarial valuation report were developed using *P-scan*, our proprietary tool for developing deterministic projections. *P-scan is used* to illustrate the impact on the future financial status of the Plan due to changes in active membership, investment experience and the collection of withdrawal liability payments.

The model can show how sensitive the Plan is to changes in an individual assumption or changes in a combination of assumptions. The scenarios shown in this report are deterministic projections and the variables are not necessarily correlated.