Sheet Metal Workers' National Pension Fund

Actuarial Valuation and Review as of January 1, 2022

This report has been prepared at the request of the Board of Trustees to assist in administering the Fund and meeting filing requirements of federal government agencies. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Trustees and may only be provided to other parties in its entirety. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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September 28, 2022

Board of Trustees
Sheet Metal Workers' National Pension Fund
3180 Fairview Park Drive, Suite 400
Falls Church, Virginia 22042

Dear Trustees:

We are pleased to submit the Actuarial Valuation and Review as of January 1, 2022. It establishes the funding requirements for the current year and analyzes the preceding year's experience. It also summarizes the actuarial data and includes the actuarial information that is required to be filed with Form 5500 to federal government agencies.

The census information upon which our calculations were based was prepared by the Fund Office, under the direction of Ms. Debbie Elkins. That assistance is gratefully acknowledged. The actuarial calculations were completed under the supervision of Daniel V. Ciner, MAAA, Enrolled Actuary.

We look forward to reviewing this report with you at your next meeting and to answering any questions you may have.

Sincerely,

Segal

By:

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Introduction

There are several ways of evaluating funding adequacy for a pension plan. In monitoring the Plan's financial position, the Trustees should keep in mind all of these concepts.

Funding Standard Account	The ERISA Funding Standard Account (FSA) measures the cumulative difference between actual contributions and the minimum required contributions. If actual contributions exceed the minimum required contributions, the excess is called the credit balance. If actual contributions fall short of the minimum required contributions, a funding deficiency occurs.
Zone Information	The Pension Protection Act of 2006 (PPA'06) called on plan sponsors to actively monitor the projected FSA credit balance, the funded percentage (the ratio of the actuarial value of assets to the present value of benefits earned to date) and cash flow sufficiency. Based on these measures, plans are then categorized as critical (*Red Zone*), endangered (*Yellow Zone*), or neither (*Green Zone*). The Multiemployer Pension Reform Act of 2014 (MPRA), among other things, made the zone provisions permanent.
Solvency Projections	Pension plan funding anticipates that, over the long term, both contributions and investment earnings will be needed to cover benefit payments and expenses. To the extent that contributions are less than benefit payments, investment earnings and fund assets will be needed to cover the shortfall. In some situations, a plan may be faced with insufficient assets to cover its current obligations and may need assistance from the Pension Benefit Guaranty Corporation (PBGC). MPRA provides options for some plans facing insolvency.
Withdrawal Liability	ERISA provides for assessment of withdrawal liability to employers who withdraw from a multiemployer plan based on unfunded vested benefit liabilities. A separate report is available.

Important information about actuarial valuations

An actuarial valuation is a budgeting tool with respect to the financing of future uncertain obligations of a pension plan. As such, it will never forecast the precise future contribution requirements or the precise future stream of benefit payments. In any event, the actual cost of a plan will be determined by the benefits and expenses paid, not by the actuarial valuation.

In order to prepare a valuation, Segal relies on a number of input items. These include:

Plan Provisions	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important for the Trustees to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Participant Information	An actuarial valuation for a plan is based on data provided to the actuary by the plan. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. For most plans, it is not possible nor desirable to take a snapshot of the actual workforce on the valuation date. It is not necessary to have perfect data for an actuarial valuation. The uncertainties in other factors are such that even perfect data does not produce a "perfect" result. Notwithstanding the above, it is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Financial Information	Part of the cost of a plan will be paid from existing assets — the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, typically reported by the auditor. A snapshot as of a single date may not be an appropriate value for determining a single year's contribution requirement, especially in volatile markets. Plan sponsors often use an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
Actuarial Assumptions	In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of participants in each year, as well as forecasts of the plan's benefits for each of those events. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions the actuary selects within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.

Given the above, the user of Segal's actuarial valuation (or other actuarial calculations) needs to keep the following in mind:

The actuarial valuation is prepared for use by the Trustees. It includes information for compliance with federal filing requirements and for the Plan's auditor. Segal is not responsible for the use or misuse of its report, particularly by any other party.
An actuarial valuation is a measurement at a specific date — it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted.
Critical events for a plan include, but are not limited to, decisions about changes in benefits and contributions. The basis for such decisions needs to consider many factors such as the risk of changes in employment levels and investment losses, not just the current valuation results.
ERISA requires a plan's enrolled actuary to provide a statement in the plan's annual report disclosing any event or trend that the actuary has not taken into account, if, to the best of the actuary's knowledge, such an event or trend may require a material increase in plan costs or required contribution rates. If the Trustees are aware of any event that was not considered in this valuation and that may materially increase the cost of the Plan, they must advise Segal, so that an appropriate statement can be included.
Segal does not provide investment, legal, accounting, or tax advice. This valuation is based on Segal's understanding of applicable guidance in these areas and of the Plan's provisions, but they may be subject to alternative interpretations. The Trustees should look to their other advisors for expertise in these areas.
While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.
Segal's report shall be deemed to be final and accepted by the Trustees upon delivery and review. Trustees should notify Segal immediately of any questions or concerns about the final content.

As Segal has no discretionary authority with respect to the management of assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Plan.

Section 1: Trustee Summary

Summary of key valuation results

Plan Year Beginning		January 1, 2021	January 1, 2022
Certified Zone Status		***Endangered***	***"Green"***
VBAR		1.00%	0.75%
Demographic Data:	• Number of active participants	61,565	61,068
	• Number of inactive participants with vested rights	33,641	34,425
	• Number of retired participants and beneficiaries	49,524	49,475
	• Total number of participants (excluding alternate payees)	144,730	144,968
	• Participant ratio: non-active to actives	1.35	1.37
Assets:	• Market value of assets (MVA)[1]	$6,470,960,172	$7,406,740,540
	• Actuarial value of assets (AVA)	6,172,757,663	6,843,965,531
	• Market value net investment return, prior year	11.60%	14.20%
	• Actuarial value net investment return, prior year	9.25%	10.61%
Statutory Funding Information:	Credit balance at the end of prior Plan Year[2]	$756,313,218	$873,462,169
	• Minimum required contribution[3]	0	0
	• Maximum deductible contribution	18,236,442,182	18,589,071,606
	• Expected employer contributions for coming Plan Year[4]	477,306,000	485,016,300
	• Actual Contributions[5]	569,862,771	---
	• Annual Funding Notice Percentage	75.6%	81.5%

1 Excludes net receivable withdrawal liability payments
2 Recognizes the five-year amortization extension
3 Amount required to maintain a $0 credit balance
4 Based on 90.0 million hours worked
5 Includes withdrawal liability payments, liquidated damages, and adjustments for withdrawal liability receivable

Summary of key valuation results

Plan Year Beginning		January 1, 2021	January 1, 2022
VBAR		1.00%	0.75%
Cost Elements:	• Valuation interest rate	7.50%	7.50%
	• Normal cost, including administrative expenses	$182,330,719	$141,017,245
	• Actuarial accrued liability	8,166,281,539	8,398,448,425
	• Unfunded actuarial accrued liability (based on AVA)	1,993,523,876	1,554,482,894
Funded Percentages:	• Actuarial accrued liabilities under unit credit method	$8,166,281,539	$8,398,448,425
	• MVA funded percentage	79.2%	88.2%
	• AVA funded percentage (PPA basis)	75.6%	81.5%
		Actual 2021	**Projected 2022**
Cash Flow:			
	• Contributions[1]	$565,335,039	$485,016,300
	• Withdrawal liability payments	4,527,732	0
	• Other income	804,098	0
	• Benefit payments	-541,444,993	-576,677,868
	• Administrative expenses	-13,733,587	-15,000,000
	• Net cash flow	$15,488,289	-$106,661,568
	• Cash flow as a percentage of MVA	0.2%	-1.4%

1 Projected contributions based on 90.0 million hours worked

This January 1, 2022 actuarial valuation report is based on financial and demographic information as of that date. The Plan's actuarial status does not reflect short-term fluctuations of the financial markets or employment levels, but rather is based on the market value of assets on the last day of the preceding Plan Year. Future changes in economic conditions are uncertain, and Segal is available to prepare projections of potential outcomes upon request.

A. Developments since last valuation

The following are developments since the last valuation, from January 1, 2021 to January 1, 2022.

1. *Participant demographics:* The number of active participants decreased 0.8% from 61,565 to 61,068. The ratio of non-active to active participants, which is one measure of plan maturity, increased from 1.35 to 1.37. The total hours of contributions increased by 0.2%, from 106.7 million to 106.9 million.

   Based on the census data used for this valuation (as of December 31, 2021), 68.6% of active participants were covered under the First Alternative Option (33.9% covered under 55/30 contracts), 27.1% were covered under the Default Option, 0.3% were covered under the benefit structure applicable to groups that did not continue bargaining increases under the Alternative Options and 4.0% were covered under the Second Alternative Option (0.2% covered under 60/30 contracts).
2. *Plan assets:* The net investment return on the market value of assets was 14.20%. For comparison, the assumed rate of return on plan assets over the long term is 7.50%, for the Plan Year ended December 31, 2021. The net investment return on the actuarial value of assets, which reflects smoothing of prior year gains and losses, was 10.61%. The calculation of the actuarial value of assets for the current Plan Year can be found in Section 2 and the change in the market value of assets over the last two Plan Years can be found in Section 3.
3. *Cash flows:* Cash inflow includes contributions and withdrawal liability payments, and cash outflow includes benefits paid to participants and administrative expenses. In the Plan Year ending December 31, 2021, the Plan's net cash inflow was $15.5 million, or about 0.2% of assets on a market value basis and it is expected to be -1.4% for the current year based on 90 million hours of contributions.
4. *Plan provisions :* Based on the 3-year average market value investment return of 8.22% for the Plan Years ended December 31, 2018 - 2020, the Applicable Percentage under the VBAR formula is 0.75% for the 2022 Plan Year. Based on the 3-year average market value investment return of 14.33% for the Plan Years ended December 31, 2019 - 2021, the Applicable Percentage under the VBAR formula will be 1.25% for the 2023 Plan Year. A summary of key plan provisions can be found in Section 3. Details of the VBAR formula are provided in Section 3.
5. *Contribution rates:* The average contribution rate for the Plan increased from $5.26 per hour to $5.39 per hour. Recognizing a 2% increase in contribution rates for employers participating in the First Alternative Option and a 1% increase in contribution rates for employers participating in the Second Alternative Option during 2022, the ultimate average hourly contribution rate is assumed to be $5.48.

B. Actuarial valuation results

The following commentary applies to various funding measures for the current Plan Year.

1. *Zone status:* The Plan was certified to be neither in endangered status nor in critical status under the Pension Protection Act of 2006 (PPA) for the current Plan Year, in other words, the Plan is in the "Green Zone." This certification result is due to the fact that the Plan's funded percentage for the current Plan Year is at least 80%, and the Plan has no projected deficiency in its funding standard account for the current or next nine Plan Years. Please refer to the actuarial certification dated February 18, 2022 for more information.
2. *Funded percentages:* During the last Plan Year, the funded percentage that will be reported on the Plan's annual funding notice increased from 75.6% to 81.5%. The primary reason for the change in funded percentage was that the investment return on plan assets exceeded the actuarial assumed rate of return. Please note that there are different measurements of funded percentage for different purposes. More information can be found in Section 2.
3. *Funding Standard Account:* During the last Plan Year, the credit balance increased from $756,313,218 to $873,462,169. The increase in the credit balance was due to the fact that contributions exceeded the net charges in the FSA for the Plan Year. For the current Plan Year, the minimum required contribution is $0, compared with $485,016,300 in expected contributions based on 90 million hours of contributions.

C. Projections and risk

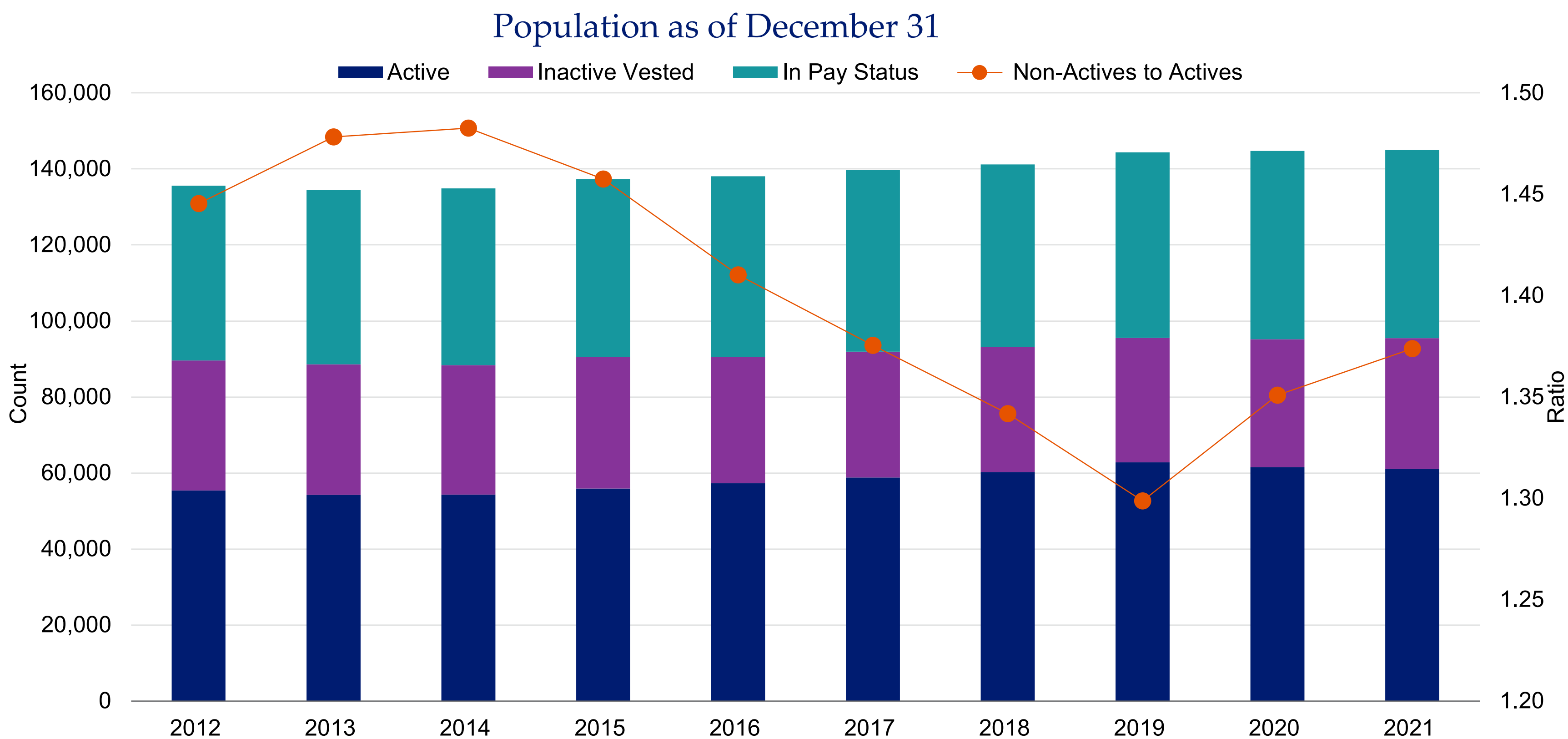
1. *Importance of projections:* Most of the results included in this valuation report are snapshot measurements, showing the Plan's status as of the valuation date. In addition to understanding the Plan's current status, it is also important to understand where the Plan is headed through actuarial projections. Projections may evaluate various metrics, such as funded percentage, Funding Standard Account, zone status, cash flows and solvency.
2. *Baseline projections:* Based on the actuarial assumptions included in this report, including:
   - an investment return assumption of 7.50% per year,
   - the Trustees' industry activity assumption of 90 million hours,
   - the Plan will experience a market rate of return of 7.50% each year into the future,
   - administrative expenses increase by 2.0% per year, with an increase of 10.0% during 2031 due to the scheduled increase in PBGC premiums,
   - all other experience emerges as projected,
   - no plan amendments or changes to laws/regulations or other actuarial assumptions.

   A 15-year projection indicates that Funding Standard Account credit balance (recognizing the five-year amortization extension) will remain positive throughout the projection period. The projections also reflect the Applicable Percentage under the VBAR formula of 0.75% for 2022, 1.25% for 2023, and the average expected long-term Applicable Percentage of 0.81% for 2024 and later. The average expected long-term Applicable Percentage was developed based on stochastic projections as described in Section 3, Exhibit L
3. *Understanding risk:* Projections can also help the Trustees understand the sensitivity of future results to various risk factors, such as investment volatility or changes in future contributions. For example, if future investment returns are less than the actuarial assumption, or future contributions are less than projected, the Plan may not meet its funding objectives or may face eventual insolvency. See Section 2 for a general discussion on the risks facing the Plan, and how they might be better evaluated, understood and addressed. A detailed analysis of the potential range of future measurements, based on a range of possible investment returns, is provided in a separate report, Updated Funding Projections Sensitivity to Investment Risk. This report provides the Trustees with a better understanding of the risks inherent in the Plan. This assessment includes scenario testing, sensitivity testing, stress testing and stochastic modeling. A detailed risk assessment is important for your Plan because:
   - The outlook for financial markets and future industry activity is uncertain.
   - The Plan could re-enter endangered status in the near future.
   - The Plan's asset allocation has potential for a significant amount of investment return volatility
   - Potential changes in the covered population may result in participant choices that vary from those assumed.

Section 2: Actuarial Valuation Results

Participant information

- The ratio of non-active to active participants, which is one measure of plan maturity, increased from 1.35 to 1.37, but this is lower than the highest ratio of 1.48 during the last ten years.



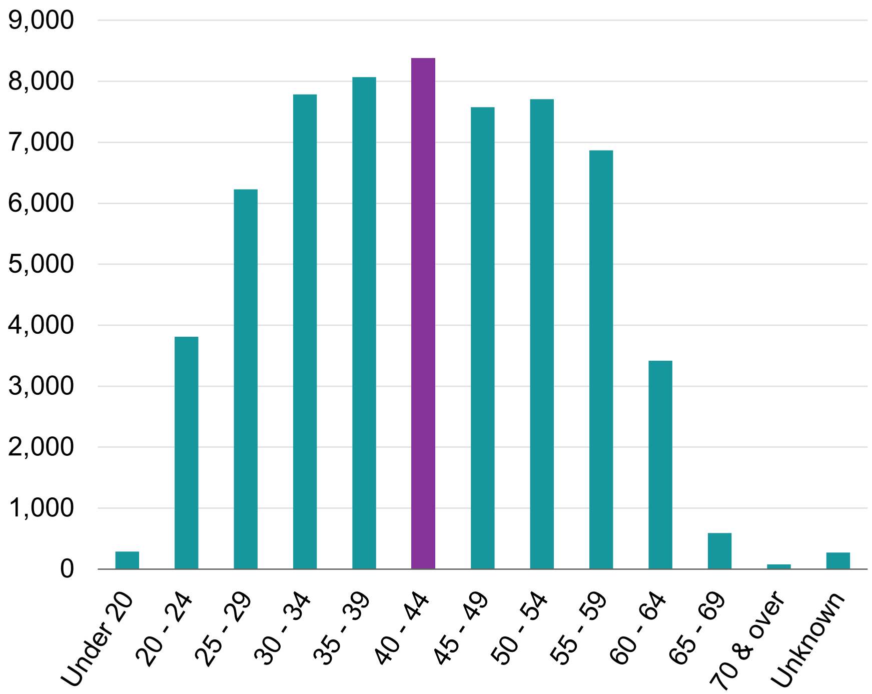
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
In Pay Status	45,974	45,909	46,501	46,876	47,652	47,843	48,067	48,834	49,524	49,475
Inactive Vested	34,161	34,338	34,033	34,596	33,149	33,089	32,850	32,750	33,641	34,425
Active	55,440	54,282	54,319	55,897	57,295	58,840	60,304	62,816	61,565	61,068
Ratio	1.45	1.48	1.48	1.46	1.41	1.38	1.34	1.30	1.35	1.37

Active participants

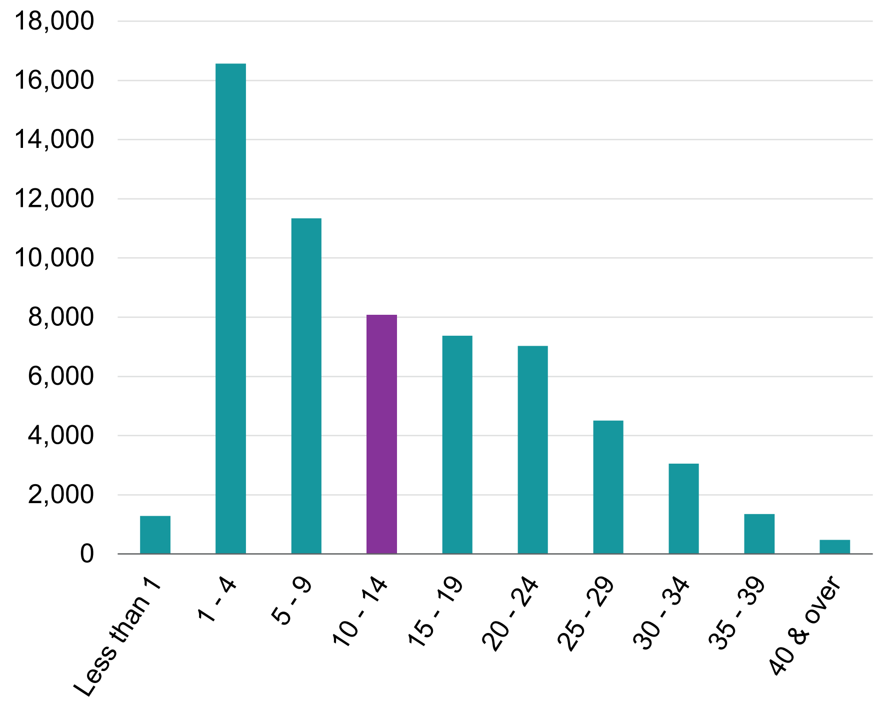
As of December 31,	2020	2021	Change
Active participants	61,565	61,068	-0.8%
Average age	42.6	42.5	-0.1
Average pension credits	13.2	13.2	–

Distribution of Active Participants as of December 31, 2021

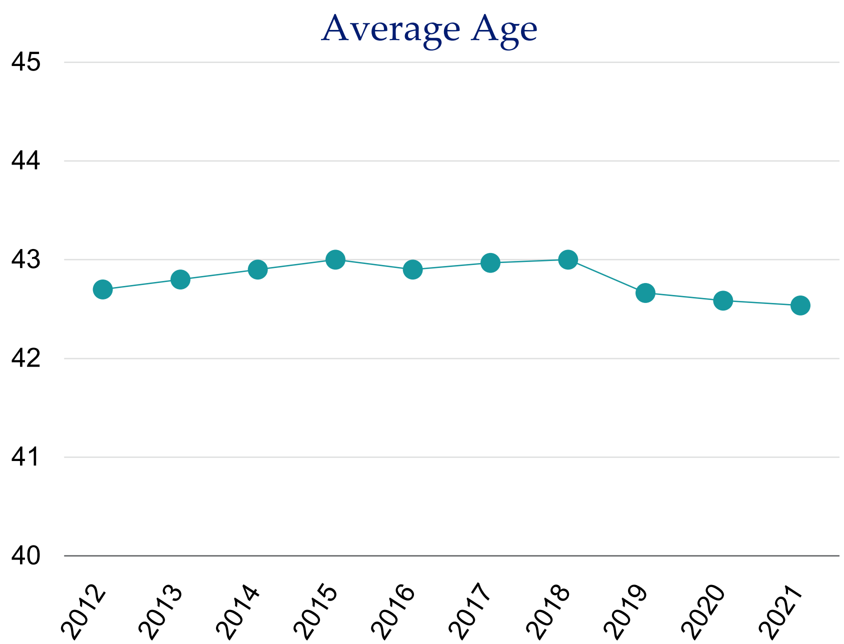
by Age

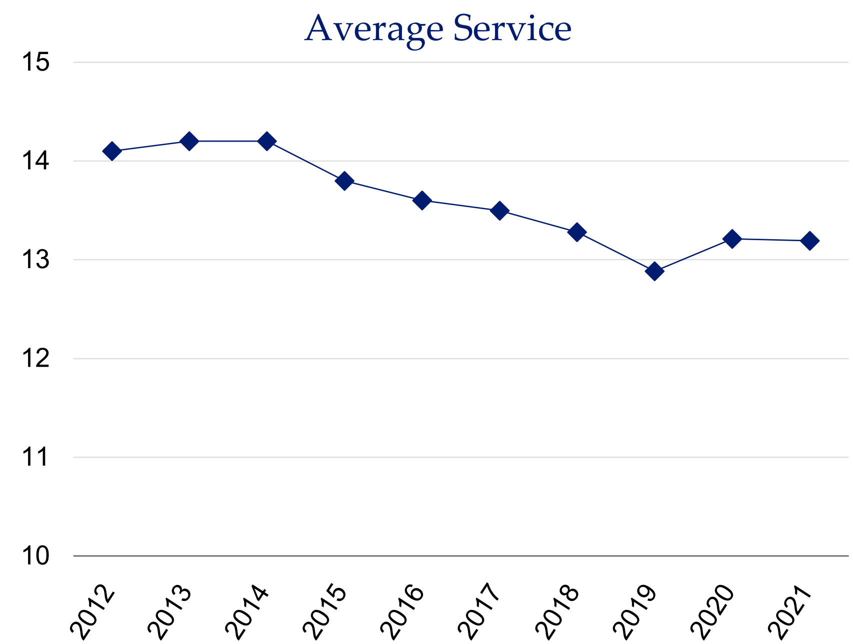


by Pension Credits



Progress of active participants





	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Avg. Age	42.7	42.8	42.9	43.0	42.9	43.0	43.0	42.7	42.6	42.5
Avg. Svc	14.1	14.2	14.2	13.8	13.6	13.5	13.3	12.9	13.2	13.2

Actives by Funding Improvement Plan (FIP) Option

Shown below is a distribution of active participants by FIP Option.

Category	Year Ended December 31 2020	Year Ended December 31 2021	Change from Prior Year
Active participants in valuation:			
• First Alternative Schedule with 55/30			
– Number	20,785	20,695	-0.4%
– Percentage of total active population	33.76%	33.89%	N/A
– Average contribution rate as of the valuation date	$9.85	$10.07	2.2%
• First Alternative Schedule without 55/30			
– Number	20,948	21,189	1.2%
– Percentage of total active population	34.03%	34.69%	N/A
– Average contribution rate as of the valuation date	$3.85	$3.95	2.6%
• Default Schedule			
– Number	17,113	16,524	-3.4%
– Percentage of total active population	27.80%	27.06%	N/A
– Average contribution rate as of the valuation date	$1.74	$1.72	-1.4%
• No contribution increases but previously covered under an Alternative Schedule			
– Number	187	163	-12.8%
– Percentage of total active population	0.30%	0.27%	N/A
– Average contribution rate as of the valuation date	$1.16	$0.82	-29.4%
• Second Alternative Schedule without 60/30			
– Number	2,382	2,343	-1.6%
– Percentage of total active population	3.87%	3.84%	N/A
– Average contribution rate as of the valuation date	$2.99	$3.07	2.6%
• Second Alternative Schedule with 60/30			
– Number	150	154	2.7%
– Percentage of total active population	0.24%	0.25%	N/A
– Average contribution rate as of the valuation date	$9.38	$9.57	2.0%
• Total Actives			
– Number	61,565	61,068	-0.8%
– Average contribution rate as of the valuation date	$5.26	$5.39	2.5%

Comparison of active participants by local

Local	As of December 31, 2020					As of December 31, 2021				
	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31[1]	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31[1]
001	396	44.46	14.78	1,740.36	$8.12	395	43.99	13.98	1,696.75	$8.16
002	1,108	43.26	15.18	1,667.42	12.83	1,096	43.18	15.25	1,665.20	13.34
003	574	41.48	11.05	1,767.15	6.19	535	41.20	11.67	1,690.63	6.35
004	200	44.82	16.71	1,879.42	0.70	189	44.77	16.50	1,806.78	0.41
005	580	41.91	8.94	1,728.54	5.14	707	41.08	8.14	1,733.41	5.28
007	1,097	40.86	13.43	1,723.92	1.73	1,117	40.54	13.22	1,799.31	1.73
009	862	42.79	12.48	1,695.85	0.80	877	42.32	12.32	1,678.14	0.50
010	2,832	42.10	13.72	1,648.76	4.93	2,916	42.17	13.68	1,667.62	5.06
012	1,082	40.89	13.43	1,620.98	8.78	1,135	40.54	12.77	1,664.23	8.78
015	558	47.21	9.88	1,791.01	2.69	480	47.00	10.62	1,904.19	2.64
016	1,620	41.53	11.42	1,701.97	2.25	1,659	41.60	11.42	1,692.48	2.25
017	1,570	42.61	13.65	1,551.94	11.76	1,728	43.15	13.66	1,770.58	12.24
018	2,668	42.34	15.14	1,751.42	10.24	2,675	41.85	14.82	1,747.55	10.55
019	232	46.19	14.87	1,590.70	4.53	177	46.73	15.12	1,727.18	4.91
020	2,565	42.64	14.01	1,766.30	5.76	2,581	42.23	13.68	1,748.68	5.94
022	0	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00
023	178	44.78	14.18	1,561.76	1.84	168	43.96	13.24	1,615.78	1.67
024	1,347	42.23	13.31	1,737.60	4.62	1,280	42.03	13.45	1,737.22	4.70
025	516	45.84	16.33	1,614.87	12.83	479	45.76	16.27	1,739.93	13.18
026	241	40.40	10.72	1,711.96	3.34	278	41.18	11.54	1,707.41	3.41
027	396	45.59	16.43	1,428.81	12.27	397	45.30	15.98	1,525.07	12.57
028	2,528	42.72	13.06	1,513.72	14.10	2,362	42.95	13.25	1,599.97	14.69

[1] Does not reflect contribution rate increases scheduled to occur during subsequent Plan years

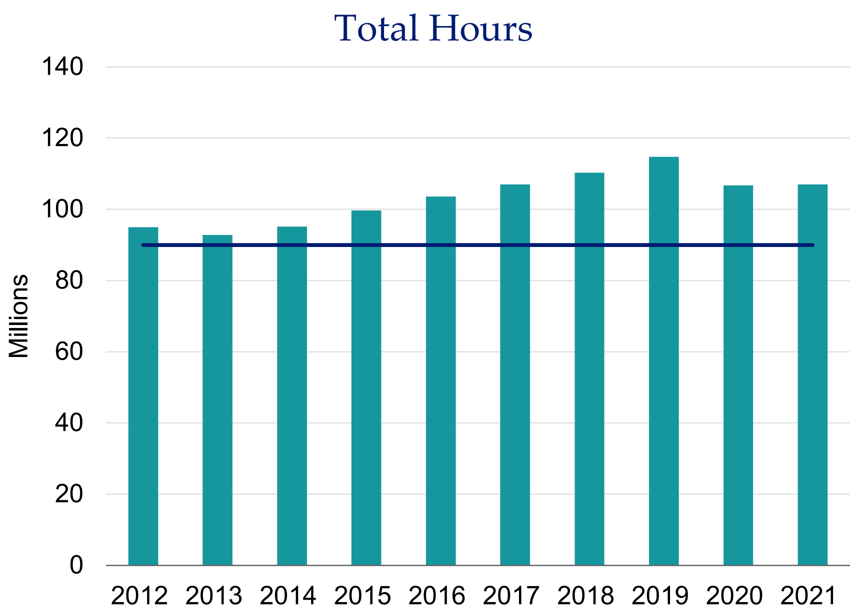
Local	As of December 31, 2020					As of December 31, 2021				
	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31[1]	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31[1]
029	197	38.51	13.22	1,677.96	5.87	171	39.07	14.09	1,691.80	5.71
032	407	46.44	11.04	1,661.49	3.00	297	46.79	12.14	1,676.82	3.05
033	2,228	42.81	14.36	1,674.12	6.42	2,245	42.38	14.07	1,734.15	6.43
036	1,792	44.26	15.56	1,651.96	2.93	1,782	44.26	15.58	1,638.43	2.76
038	473	44.00	15.22	1,551.71	12.06	432	43.96	15.13	1,613.38	12.42
040	312	46.57	16.88	1,550.89	0.77	267	46.52	17.47	1,575.79	0.85
044	183	44.38	15.45	1,521.41	0.99	202	44.92	15.02	1,713.98	0.80
045	420	40.76	14.07	1,771.05	7.60	426	40.65	14.08	1,699.06	7.90
046	350	41.62	14.38	1,606.30	3.39	338	40.76	13.52	1,690.53	3.36
048	268	40.41	11.33	1,792.30	8.16	223	40.41	12.10	1,768.59	8.49
049	535	42.21	10.60	1,761.73	6.44	534	42.12	10.38	1,695.13	6.68
054	487	44.05	14.01	1,705.12	6.68	452	43.94	14.04	1,754.33	6.62
055	1,096	41.51	11.43	1,718.92	1.49	1,181	40.98	10.89	1,735.58	1.35
058	150	44.21	12.86	1,518.91	8.69	206	43.19	10.76	1,674.47	8.62
063	371	43.55	12.78	1,578.81	8.11	393	43.00	11.72	1,641.77	7.84
066	2,579	42.48	12.11	1,580.50	3.49	2,617	42.83	12.63	1,589.54	3.58
067	761	42.13	12.88	1,774.38	8.28	1,012	41.90	11.09	1,857.11	9.18
068	375	43.96	12.49	1,644.23	5.61	383	43.39	12.42	1,753.87	5.80
071	308	41.61	13.91	1,623.68	7.51	298	41.69	14.13	1,762.08	7.66
073	1,904	45.87	16.69	1,689.93	5.26	1,828	45.91	16.82	1,700.14	5.46
080	114	35.73	4.08	1,408.07	8.63	89	33.68	4.03	1,426.31	9.58
083	275	44.69	15.73	1,728.35	11.70	261	44.05	15.00	1,729.63	12.09
085	1,023	40.25	11.35	1,783.63	1.89	1,157	40.76	11.45	1,875.52	1.62
088	755	43.92	12.09	1,707.25	2.98	664	43.47	12.47	1,624.51	2.97
091	734	40.25	12.60	1,669.53	5.50	722	40.23	12.70	1,702.78	5.61

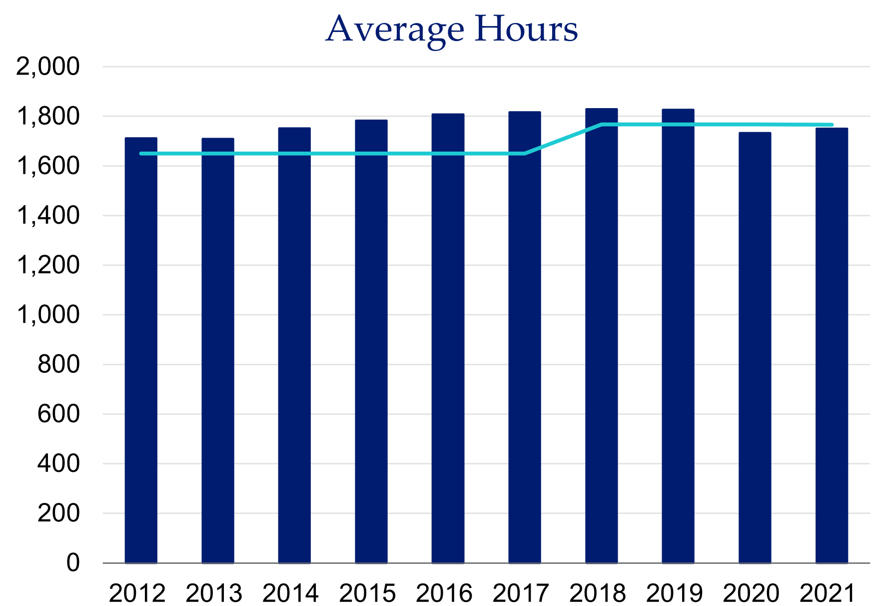
Local	As of December 31, 2020					As of December 31, 2021				
	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31[1]	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31[1]
100	410	43.26	12.17	1,574.69	8.02	363	43.48	12.98	1,508.22	8.08
103	348	41.50	11.81	1,666.15	1.45	363	41.09	11.05	1,669.34	1.28
104	5,246	42.06	12.40	1,518.63	1.90	4,924	42.21	12.73	1,548.62	1.89
105	3,986	41.18	11.36	1,728.87	3.39	3,814	41.16	11.47	1,639.32	3.50
110	505	42.93	13.42	1,732.94	9.71	512	43.01	13.59	1,753.48	10.37
112	274	40.92	12.18	1,683.66	2.71	272	40.59	12.30	1,737.85	2.43
124	315	43.18	14.20	1,676.01	2.07	275	43.31	14.49	1,699.57	1.93
137	270	46.38	15.37	1,503.07	11.23	233	47.01	16.42	1,676.25	12.20
170	734	45.76	12.04	2,056.23	1.74	686	46.45	12.40	2,118.95	1.81
177	525	40.94	10.31	1,859.80	1.05	605	41.39	10.42	1,737.04	1.03
206	545	42.40	11.38	1,698.82	5.22	514	43.17	11.48	1,644.39	5.54
214	440	44.01	15.44	1,770.94	3.49	403	43.86	15.88	1,824.99	3.22
218	327	42.38	14.91	1,665.33	3.62	321	41.91	14.62	1,618.88	3.80
219	316	42.35	14.33	1,657.75	6.92	405	42.26	13.32	1,712.14	7.01
256	36	45.41	9.52	1,897.53	1.25	39	45.61	10.90	1,908.62	1.25
263	325	39.43	12.94	1,793.55	6.69	333	39.61	13.26	1,795.73	6.92
265	1,277	45.06	16.92	1,661.13	1.34	1,169	45.17	17.21	1,624.85	0.91
268	339	45.02	17.82	1,711.60	5.48	327	43.94	17.17	1,699.92	5.58
270	207	40.87	10.32	1,548.23	5.67	198	41.74	11.68	1,632.01	6.21
292	568	42.22	11.55	1,998.58	1.00	532	42.65	11.84	2,032.52	1.08
293	1	54.59	7.00	1,956.00	1.25	0	0.00	0.00	0.00	0.00
312	998	40.58	12.95	1,767.88	0.33	1,080	40.57	12.54	1,821.89	0.25
359	547	43.79	12.52	1,849.85	2.80	542	43.52	12.40	1,746.99	2.82
399	293	43.67	9.87	1,817.49	6.41	201	42.84	11.20	1,844.29	7.05
435	222	42.24	12.94	1,790.05	6.51	316	39.93	9.83	1,679.72	6.76

Local	As of December 31, 2020					As of December 31, 2021				
	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31[1]	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31[1]
441	207	41.94	12.83	1,773.08	6.25	187	42.51	13.45	1,761.60	6.39
450	132	46.74	12.52	2,275.85	2.18	119	46.73	12.76	2,352.39	2.08
464	101	53.56	22.90	1,874.68	0.90	97	53.50	23.11	1,907.82	0.84
480	666	43.74	10.14	2,064.39	2.56	574	44.06	11.24	2,009.42	2.52
555	133	47.76	11.20	1,943.55	0.81	150	43.58	9.54	1,937.63	0.76
556	1	54.34	8.33	1,956.00	7.09	0	0.00	0.00	0.00	0.00
777	0	0.00	0.00	0.00	0.81	9	58.95	17.48	1,518.89	6.90
997	24	48.29	10.11	1,736.54	7.09	94	52.54	22.32	2,140.60	6.80
Total	61,565	42.60	13.21	1,682.40	$5.26	61,068	42.54	13.19	1,701.61	$5.39

Historical employment

- The 2022 zone certification was based on an industry activity assumption of 90 million hours.
- The valuation is based on 61,068 actives and average assumed employment of 1,766 hours (1,750 for construction employees and 2,000 for production employees).
- The total hours of contributions increased slightly during the past year.





	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	5-year average	10-year average
Total Hours[1]	94.92	92.83	95.14	99.64	103.61	106.94	110.28	114.75	106.70	106.94	109.12	103.17
Average Hours	1,712	1,710	1,751	1,783	1,808	1,817	1,829	1,827	1,733	1,751	1,791	1,772

Note: The total hours of contributions are based on total hours reported in the census data. Lines in charts represent PPA assumption for industry activity following respective year.

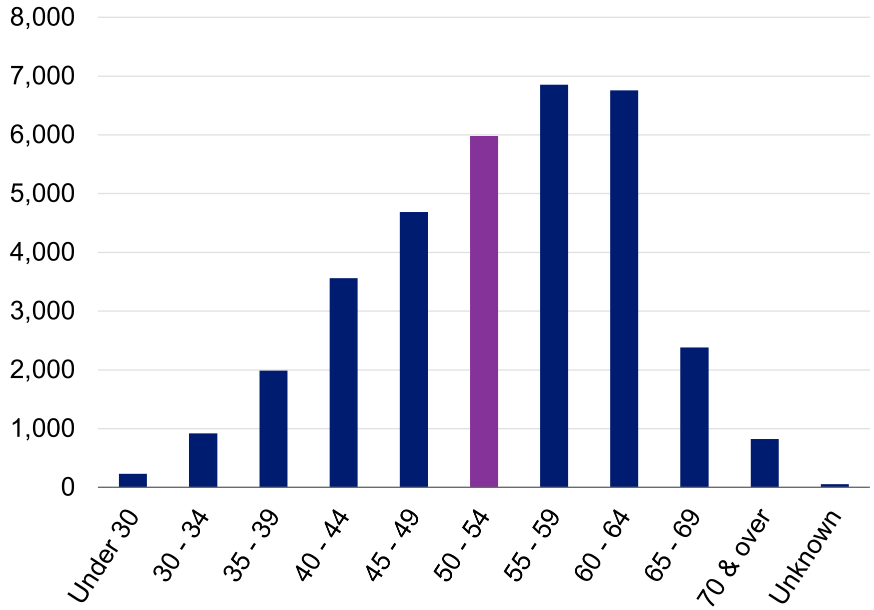
[1] In millions

Inactive vested participants

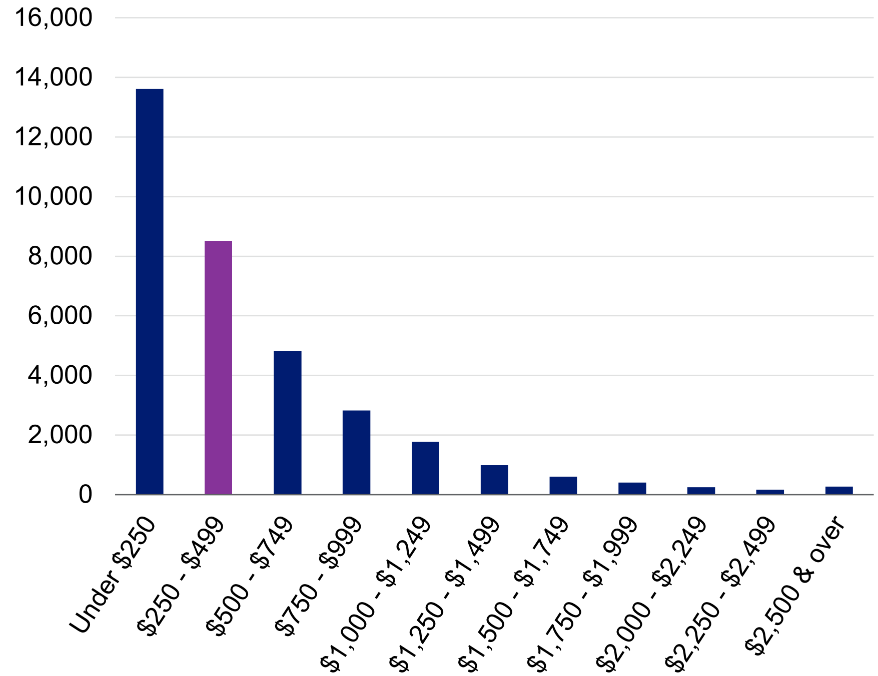
As of December 31,	2020	2021	Change
Inactive vested participants[1]	33,529	34,242	2.1%
Average age	53.2	53.7	0.5
Average amount	$489	$495	1.1%
Beneficiaries eligible for deferred benefits	112	183	63.4%
Alternate payees eligible for deferred benefits	477	521	9.2%

Distribution of Inactive Vested Participants as of December 31, 2021

by Age



by Monthly Amount



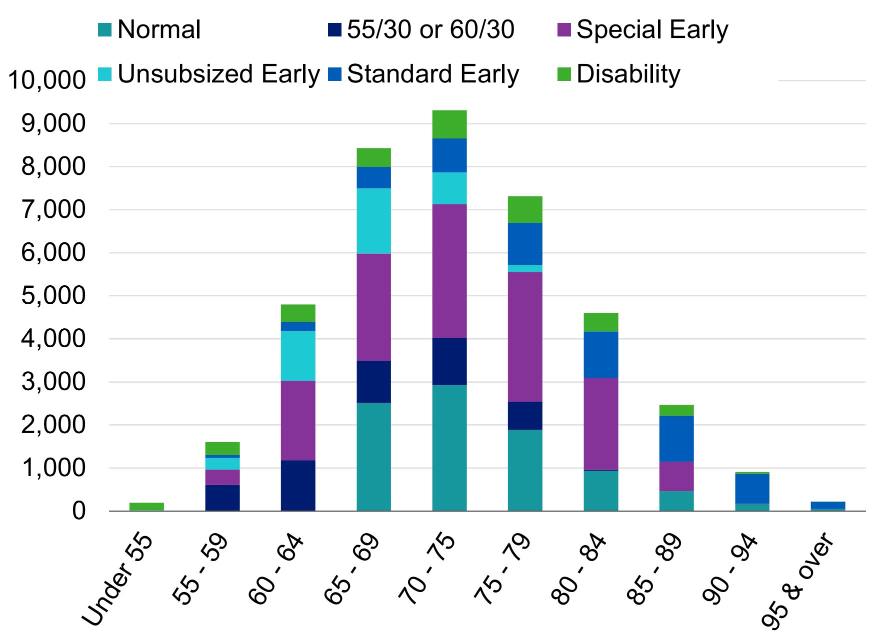
[1] A participant who is not currently active and has satisfied the requirements for, but has not yet commenced, a pension is considered an “inactive vested” participant.

Pay status information

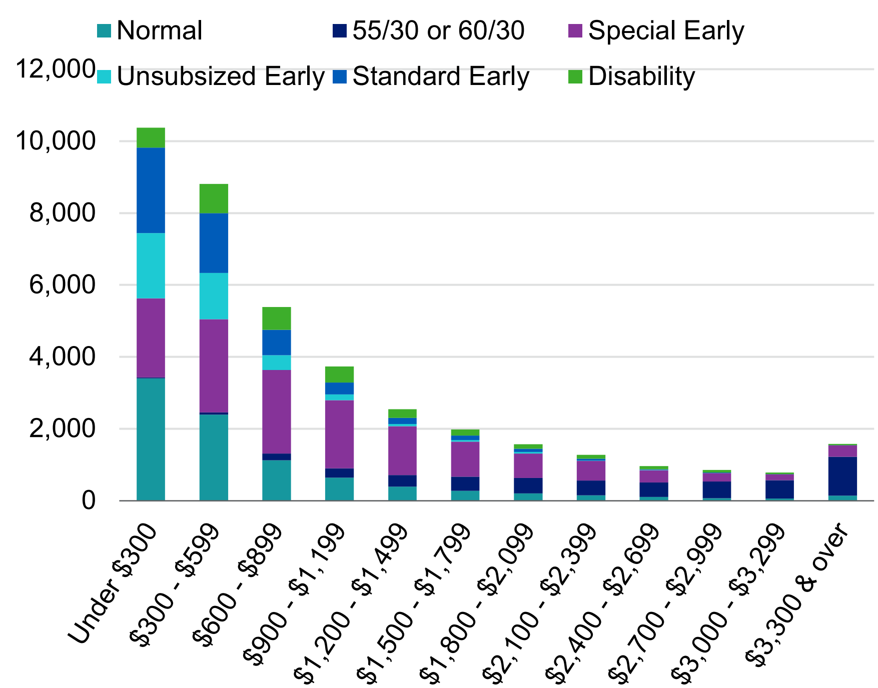
As of December 31,	2020	2021	Change
Pensioners	39,898	39,813	-0.2%
Average age	72.9	73.1	0.2
Average amount	$990	$1,016	2.6%
Beneficiaries	9,533	9,615	0.9%
Total monthly amount	$44,064,591	$45,264,262	2.7%
Suspended pensioners	84	47	-46.0%
Suspended beneficiaries	9	0	-100.0%
Alternate payees in payment status	1,384	1,580	14.2%

Distribution of Pensioners as of December 31, 2021

by Type and Age



by Type and Monthly Amount



Progress of pension rolls

	Total In Pay Status			New Awards		
Year	Number	Average Age	Average Amount	Number	Average Age	Average Amount[1]
2012	37,165	71.5	$868	1,644	61.4	$972
2013	37,648	71.7	877	2,065	61.5	930
2014	38,074	71.8	888	1,962	61.7	916
2015	38,211	72.1	906	1,655	61.6	957
2016	38,952	72.2	919	2,237	62.0	975
2017	38,949	72.3	918	1,633	62.2	1,129
2018	39,019	72.6	954	1,813	62.2	1,174
2019	39,424	72.8	973	2,018	62.4	1,151
2020	39,898	72.9	990	2,319	62.6	1,143
2021	39,813	73.1	1,016	1,757	62.6	1,310

[1] Includes one-twelfth of annual COLA payments.

New pension awards

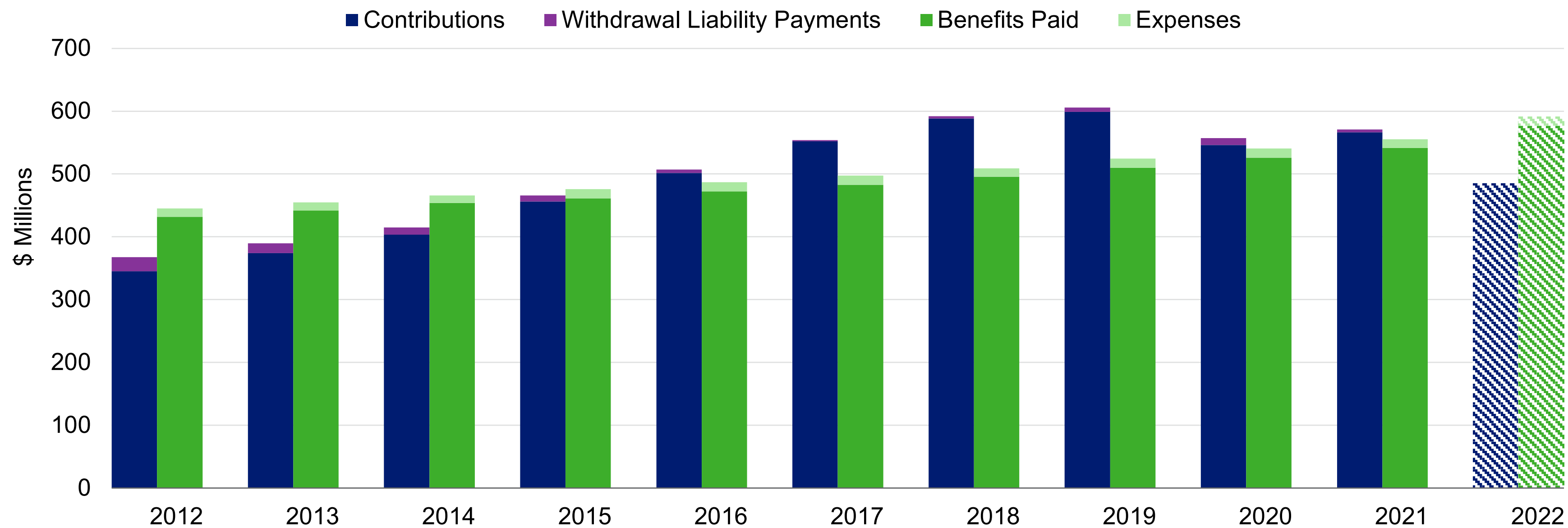
Year Ended Dec 31	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total	1,644	2,065	1,962	1,655	2,237	1,633	1,813	2,018	2,319	1,757
• Average Amount	$972	$930	$916	$957	$975	$1,129	$1,174	$1,151	$1,143	$1,310
• Average Age	61.4	61.5	61.7	61.6	62.0	62.2	62.2	62.4	62.6	62.6
Normal	465	592	576	511	523	518	563	650	773	681
• Average Amount	$651	$645	$626	$732	$792	$771	$689	$714	$719	$814
• Average Age	66.6	66.8	66.7	66.5	66.2	66.5	66.7	66.7	66.6	66.5
Standard Early	387	563	569	94	150	79	106	129	124	32
• Average Amount	$386	$440	$402	$578	$517	$665	$659	$670	$575	$812
• Average Age	60.6	60.6	60.9	60.7	61.9	61.9	64.4	62.5	62.8	59.8
Unsubsidized Early[1]	--	--	--	370	707	374	370	431	488	239
• Average Amount	--	--	--	$385	$354	$514	$503	$690	$831	$498
• Average Age	--	--	--	60.5	62.7	61.6	62.4	61.9	62.1	60.9
Special Early[1]	499	585	504	446	516	409	472	509	607	529
• Average Amount	$1,190	$1,090	$1,077	$1,131	$1,228	$1,436	$1,433	$1,429	$1,442	$1,596
• Average Age	60.5	60.3	60.2	59.9	58.3	60.8	60.7	60.6	60.9	61.2
55/30 (60/30)	214	240	245	179	289	220	261	267	294	256
• Average Amount	$2,383	$2,552	$2,544	$2,623	$2,649	$2,744	$2,990	$2,990	$2,949	$2,954
• Average Age	57.9	57.5	57.5	57.7	57.7	57.8	57.2	57.9	57.8	57.9
Disability	79	85	68	55	52	33	41	32	33	20
• Average Amount	$536	$477	$611	$611	$765	$735	$691	$877	$820	$959
• Average Age	49.8	49.9	51.1	49.9	51.0	50.2	50.4	50.7	51.0	51.4

[1] Unsubsidized early pensions are not separately identified prior to 2015

Financial information

- Benefits and expenses are funded solely from contributions and investment earnings.
- Contributions (including withdrawal liability payments) have exceeded benefits paid and administrative expenses in the last five years, primarily due to the higher active population (10.2% higher this year than in 2012) and contribution rate increases required under the Rehabilitation/Funding Improvement Plan (24% increase in average rate since the end of 2013). Benefit payments have steadily increased over the last 10 years.
- Additional detail is in Section 3.

Cash Flow



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022[1]
Contributions and other income[2]	$344.98	$374.24	$403.43	$456.10	$501.80	$551.88	$588.28	$600.07	$545.85	$566.14	$485.02
W/L Payments[3]	22.77	15.47	11.52	9.70	5.08	1.98	3.79	4.93	10.71	4.53	0.00
Benefits Paid[2]	431.73	441.79	454.02	461.39	472.38	482.58	495.57	509.63	525.92	541.44	576.68
Expenses[2]	13.32	13.00	12.01	14.40	14.46	14.85	13.60	14.69	14.90	13.73	15.00

[1] Projected
[2] In millions
[3] Includes adjustment for withdrawal liability receivable

Determination of Actuarial Value of Assets

- The asset valuation method gradually recognizes annual market value fluctuations to help mitigate volatility in the actuarial cost calculations.
- The return on the market value of assets for the year ending December 31, 2021 was 14.20%, which produced a gain of $434.4 million when compared to the assumed return of 7.50%.

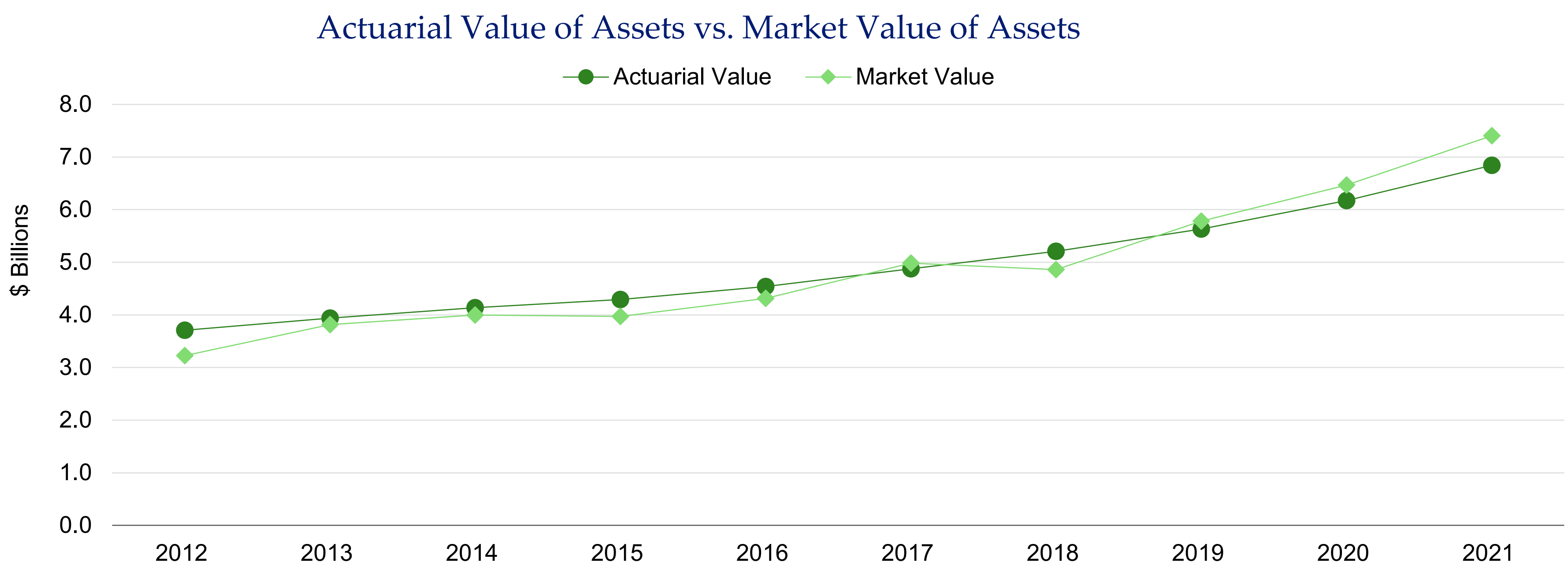
			Original Amount[1]	Unrecognized Return[2]	
1	Market value of assets, December 31, 2021				$7,406,740,540
2	Calculation of unrecognized return				
	(a)	Year ended December 31, 2021	$434,389,255	$347,511,404	
	(b)	Year ended December 31, 2020	237,193,981	142,316,389	
	(c)	Year ended December 31, 2019	474,280,281	189,712,112	
	(d)	Year ended December 31, 2018	-583,824,479	-116,764,896	
	(e)	Year ended December 31, 2017	287,044,734	0	
	(f)	Total unrecognized return			562,775,009
3	Preliminary actuarial value: **1 - 2f**				$6,843,965,531
4	Adjustment to be within 20% corridor				0
5	Final actuarial value of assets as of December 31, 2021: **3 + 4**				$6,843,965,531
6	Actuarial value as a percentage of market value: **5 ÷ 1**				92.4%
7	Amount deferred for future recognition: **1 - 5**				$562,775,009

[1] Total return minus expected return on a market value basis

[2] Recognition at 20% per year over five years

Asset history for years ended December 31

- Both the actuarial value and the market value of assets are representations of the Plan's financial status.
- The actuarial value is significant because it is subtracted from the Plan's total actuarial accrued liability to determine the portion that is not funded and is used to determine the PPA'06 funded percentage.
- Amortization of the unfunded accrued liability is an important element in the contribution requirements of the Plan.



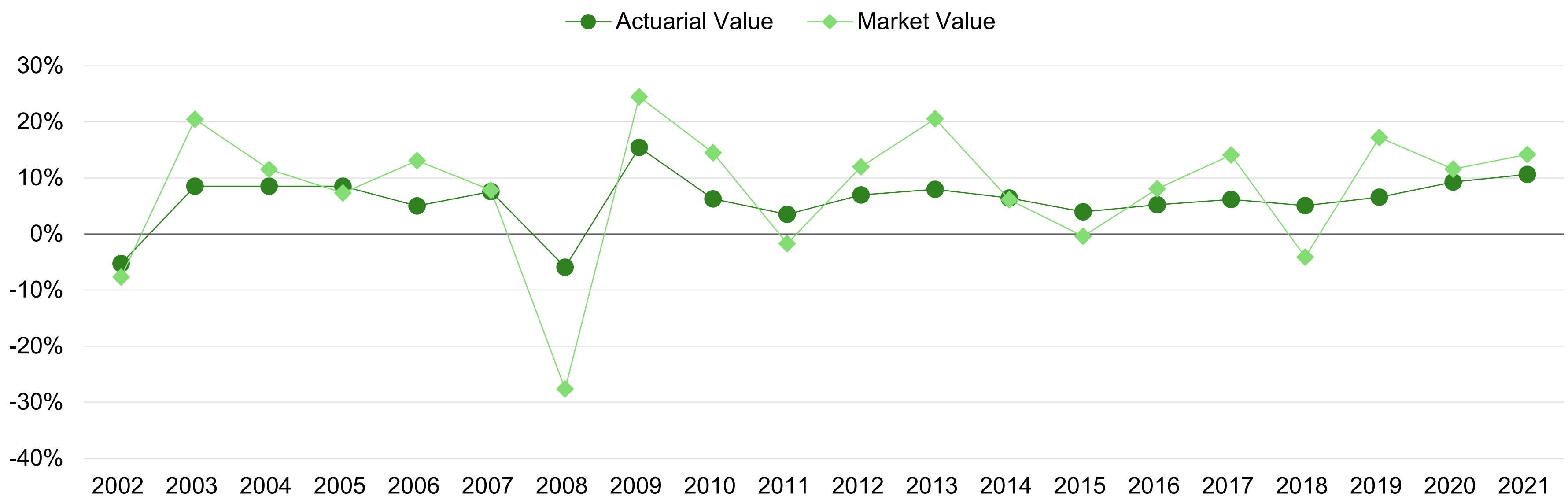
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Actuarial Value[1]	$3.71	$3.94	$4.14	$4.29	$4.54	$4.88	$5.21	$5.63	$6.17	$6.84
Market Value[1]	3.23	3.82	4.00	3.97	4.31	4.98	4.86	5.78	6.47	7.41
Ratio	115.0%	103.2%	103.5%	108.1%	105.2%	97.9%	107.2%	97.4%	95.4%	92.4%

[1] In billions

Historical investment returns

- Actuarial planning is long term. The obligations of a pension plan are expected to continue for the lifetime of all its participants.
- The assumed long-term rate of return of 7.50% considers past experience, the Trustees' asset allocation policy and future expectations.

Market Value and Actuarial Rates of Return for Years Ended December 31



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
AVA	-5.3%	8.5%	8.5%	8.5%	5.0%	7.6%	-5.9%	15.4%	6.2%	3.5%	6.9%	8.0%	6.4%	4.0%	5.2%	6.2%	5.1%	6.6%	9.2%	10.6%
MVA	-7.7%	20.4%	11.5%	7.3%	13.1%	7.8%	-27.6%	24.5%	14.5%	-1.7%	12.0%	20.6%	6.1%	-0.4%	8.1%	14.1%	-4.1%	17.2%	11.6%	14.2%

Average Rates of Return	Actuarial Value	Market Value
Most recent three-year average return:	8.81%	14.33%
Most recent five-year average return:	7.73%	10.70%
Most recent ten-year average return:	7.00%	9.87%
20-year average return:	6.23%	8.02%

* The average return for the most recent three years is the arithmetic average of the returns. For average returns over five or more years, the average return is weighted by the asset value. The actuarial value investment returns for 2006 and 2008 include the effect of a change in the method for determining the actuarial value of assets.

Actuarial experience

- Assumptions should consider experience and should be based on reasonable expectations for the future.
- Each year actual experience is compared to that projected by the assumptions. Differences are reflected in the actuarial valuation.
- Assumptions are not changed if experience is believed to be a short-term development that will not continue over the long term. On the other hand, if experience is expected to continue, assumptions are changed.
- The net experience variation for the year, other than investment and administrative expense experience, was not significant when compared to projected actuarial accrued liability from the prior valuation.

Experience for the Year Ended December 31, 2021

1	Gain from investments	$192,181,943
2	Gain from administrative expenses	1,309,378
3	Net gain from other experience (less than 0.1% of projected accrued liability)	501,685
4	**Net experience gain: 1 + 2 + 3**	**$193,993,006**

Investment experience

- Actuarial planning is long term. The obligations of a pension plan are expected to continue for the lifetime of all its participants.
- The assumed long-term rate of return of 7.50% considers past experience, the Trustees' asset allocation policy and future expectations.

Gain from Investments

1	Average actuarial value of assets	$6,180,501,808
2	Assumed rate of return	7.50%
3	Expected net investment income: **1 x 2**	$463,537,636
4	Net investment income (10.61% actual rate of return)	655,719,579
5	**Actuarial gain from investments: 4 – 3**	**$192,181,943**

Administrative expenses

- Administrative expenses for the year ended December 31, 2021 totaled $13,733,587, as compared to the assumption of $15,000,000. Based on past experience and a review of budgeted Plan expenses, no change was made to the assumption this year.

Other experience

- The net experience variation for the year, other than investment experience, was less than 0.1% of the projected actuarial accrued liability from the prior valuation, and was not significant when compared to that liability.
- Some difference between projected and actual experience include:
  - Mortality experience
  - Extent of turnover among the participants
  - Future benefit accruals more or less than projected
  - Retirement experience (earlier or later than projected)
  - Number of disability retirements

Actuarial assumptions

- There were no changes in assumptions since the prior valuation.
- Details on actuarial assumptions and methods are in Section 3.Details on actuarial assumptions and methods are in Section 3.

Plan provisions

- Based on the 3-year average market value investment return of 8.22% for the Plan Years ended December 31, 2018 - 2020, the Applicable Percentage under the VBAR formula is 0.75% for the 2022 Plan Year.
- Based on the 3-year average market value investment return of 14.33% for the Plan Years ended December 31, 2019 - 2021, the Applicable Percentage under the VBAR formula will be 1.25% for the 2023 Plan Year.
- A summary of plan provisions is in Section 3.

Contribution rate changes

- The contributions are based on hourly rates set in agreements negotiated by the bargaining parties.
- The average contribution rate increased from the prior year at $5.26 per hour as of January 1, 2021 to $5.39 per hour as of January 1, 2022.
- Under the prior Funding Improvement Plan, there will be a 2% increase in contribution rates for employers participating in the First Alternative Option and a 1% increase in contribution rates for employers participating in the Second Alternative Option during 2022. Recognizing the increases, the ultimate hourly contribution rate for the coming year is assumed to be $5.48.

Plan funding

Comparison of Funded Percentages

Plan Year Beginning	January 1, 2021		January 1, 2022	
Market Value of Assets	**$6,470,960,172**		**$7,406,740,540**	
	Amount	**Funded %**	**Amount**	**Funded %**
• Funding interest rate	7.50%		7.50%	
• Present value (PV) of future benefits	$9,446,336,727	68.5%	$9,722,556,417	76.2%
• PV of accumulated plan benefits (PVAB)	8,166,281,539	79.2%	8,398,448,425	88.2%
• Current liability interest rate	2.43%		2.22%	
• Current liability[1]	$16,915,281,875	38.3%	$17,821,340,241	41.6%
Actuarial Value of Assets	**$6,172,757,663**		**$6,843,965,531**	
	Amount	**Funded %**	**Amount**	**Funded %**
• Funding interest rate	7.50%		7.50%	
• PV of future benefits	$9,446,336,727	65.3%	$9,722,556,417	70.4%
• PPA'06 liability and annual funding notice	8,166,281,539	75.6%	8,398,448,425	81.5%

These measurements are not necessarily appropriate for assessing the sufficiency of the Plan's assets to cover the estimated cost of settling the Plan's benefit obligations or the need for or the amount of future contributions. The funded percentages based on the actuarial value of assets would be different if they were based on the market value of assets.

[1] Assets for funded percentage includes net withdrawal liability receivables

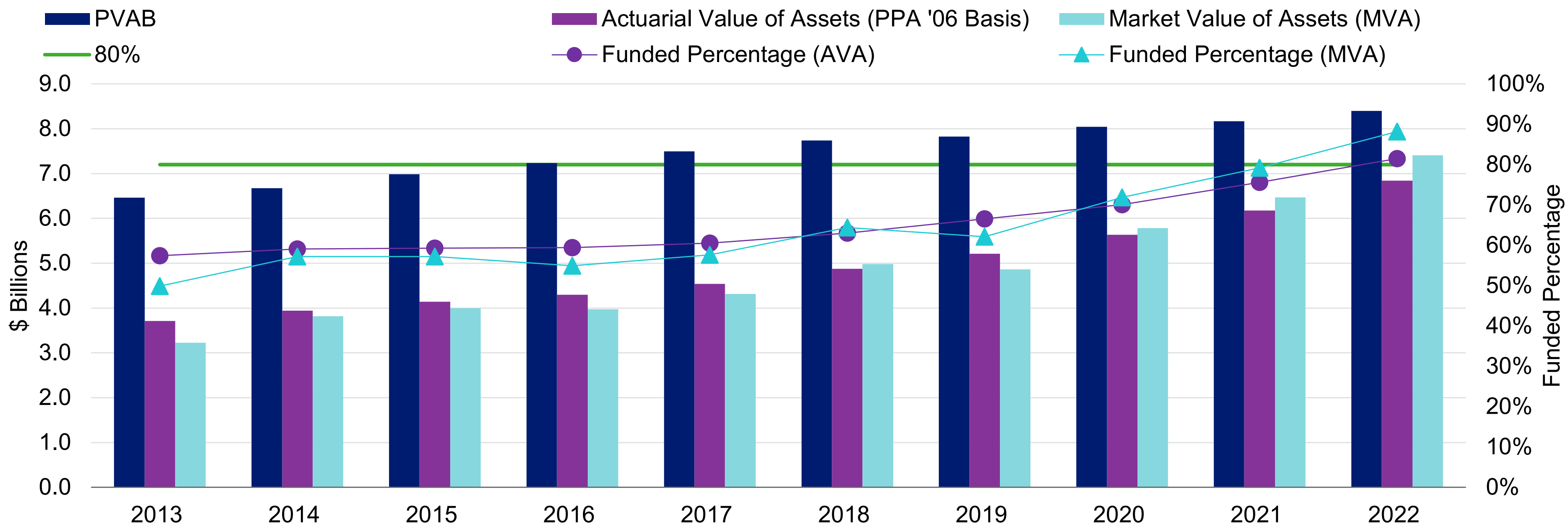
Pension Protection Act of 2006

2022 Actuarial status certification

- PPA'06 requires trustees to actively monitor their plans' financial prospects to identify emerging funding challenges so they can be addressed effectively.
- As reported in the 2022 certification, the Plan was classified as neither endangered nor critical (that is, in the Green Zone) because the funded percentage was more than 80%, and the credit balance in the FSA was projected to be positive for at least ten years.

Pension Protection Act of 2006 historical information

Funded Percentage and Zone



Plan Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Zone Status	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green
PVAB[1]	$6.46	$6.67	$6.99	$7.23	$7.49	$7.74	$7.83	$8.04	$8.17	$8.40
AVA[1]	3.71	3.94	4.14	4.29	4.54	4.88	5.21	5.63	6.17	6.84
Funded %	57.4%	59.1%	59.3%	59.4%	60.6%	63.0%	66.5%	70.0%	75.6%	81.5%
MVA[1]	3.23	3.82	4.00	3.97	4.31	4.98	4.86	5.78	6.47	7.41
Funded %	49.9%	57.2%	57.2%	54.9%	57.6%	64.4%	62.1%	71.9%	79.2%	88.2%

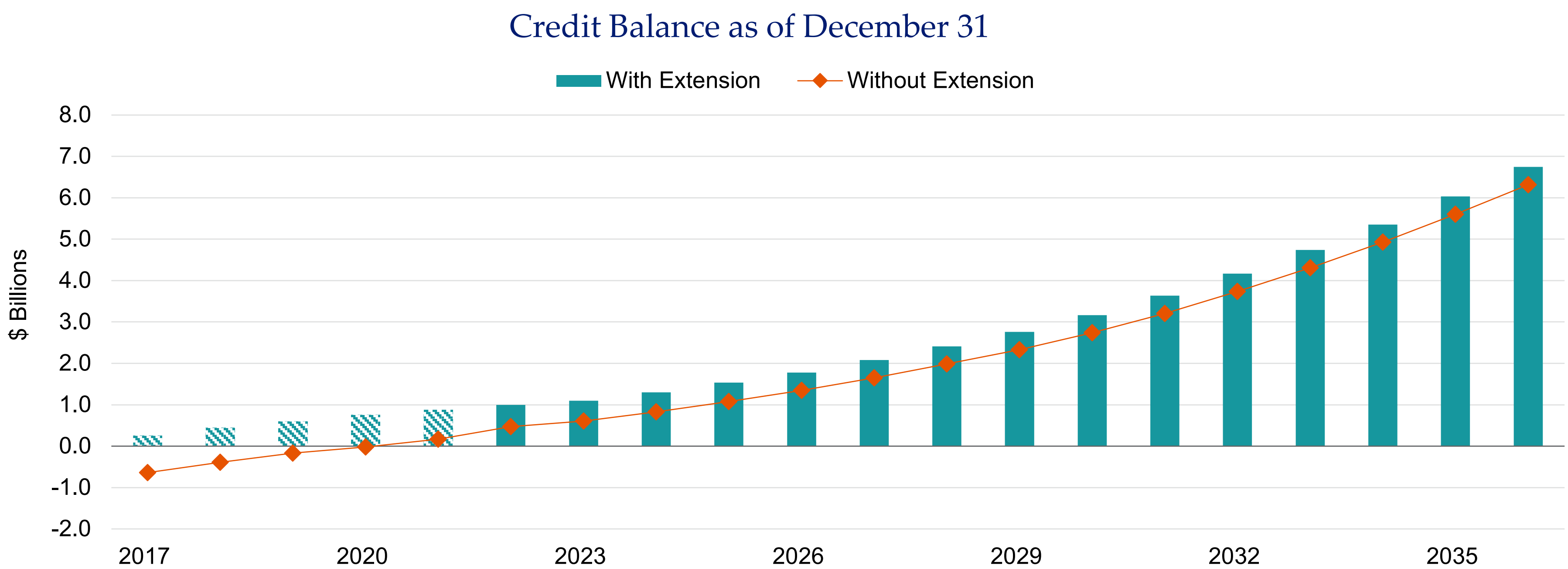
[1] In billions

Projections

- A 15-year projection on the following page assume the following, unless otherwise noted:
  - The Plan will earn a market rate of return equal to 7.50% each year.
  - Industry activity is based on 90 million total hours each year.
  - Administrative expenses are assumed to be $15.0 million for the 2022 Plan year and increase by 2% per year thereafter, with an increase of 10% for 2031 due to the scheduled increase in the PBGC premium rate total.
  - No contribution increases other than those already in effect (i.e., disregarding remaining contribution rate increases under the Funding Improvement Plan),
  - There are no plan amendments or changes in law/regulation.
  - All other experience emerges as assumed, and no assumption changes are made.
- The projections in this valuation illustrate the potential future impact of one given set of assumptions. Additional scenarios would demonstrate sensitivity to risk from investment return, employment and other factors.
- Additional projections discussing risk were provided to the Trustees separately.

Funding Standard Account (FSA)

- The minimum funding requirement for the year beginning January 1, 2022 is $0.
- Based on the assumption that 90.0 million total hours worked each year at a $5.38907 contribution rate, the contributions projected for the year beginning January 1, 2021 are $485,016,300. The credit balance is projected to increase by approximately $124,678,197 to $998,140,366 as of December 31, 2021.
- A 15-year projection indicates the credit balance will remain positive, based on the assumptions detailed on the prior page and the following:
- The normal cost in future years is based on a long-term applicable percentage under the VBAR is 0.81% for 2024 and after



Risk

- The actuarial valuation results are dependent on a single set of assumptions; however, there is a risk that emerging results may differ significantly as actual experience proves to be different from the current assumptions.
- We have been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the Plan's future financial condition. Those results are included in a separate report, *Updated Funding Projections - Sensitivity to Investment Risk*.

  We have also included a brief discussion of some risks that may affect the Plan:
- Economic Shock Risk. Potential implications for the Plan due to the effects of the COVID-19 pandemic (that were not reflected as of the valuation date) include:
  - Volatile financial markets and investment returns lower than assumed
  - Short-term or long-term employment far different than past experience, including a projected rate of recovery and possible "new normal" long-term state
  - Changes in future demographic experience, such as retirement, disability, turnover, and mortality patterns

  Economic Shock Risk, along with Investment and Employment Risk, are addressed in a separate report titled: Updated Funding Projections Sensitivity to Investment Risk.
- Investment Risk (the risk that returns will be different than expected)
- Employment Risk (the risk that actual contributions will be different from projected contributions)
- Longevity Risk (the risk that mortality experience will be different than expected)
- Other Demographic Risk (the risk that participant experience will be different than assumed)

  Examples of this risk include:
  - Actual retirements occurring earlier or later than assumed. The value of retirement plan benefits is sensitive to the rate of benefit accruals and any early retirement subsidies that apply. While it is difficult to quantify the impact of potential experience, earlier retirements would generally result in higher costs for your plan.
  - More or less active participant turnover than assumed. Lower turnover would generally result in higher costs for your Plan.
  - Return to covered employment of previously inactive participants. More rehires would generally result in higher costs for your Plan.

Section 2: Actuarial Valuation Results

- Actual Experience over the Last Ten Years

  Past experience can help demonstrate the sensitivity of key results to the Plan's risk profile. Over the past ten years ended December 31, 2021:

  - The investment gain (loss) on market value for a year has ranged from a loss of $583,824,479 to a gain of $474,280,281.
  - The non-investment gain (loss) for a year has ranged from a loss of $35,659,962 to a gain of $28,591,245.

- Maturity Measures

  The risk associated with a pension plan increases as it becomes more mature, meaning that the actives represent a smaller portion of the liabilities of a plan. When this happens, there is a greater risk that fluctuations in the experience of the non-active participants or of the assets of a plan can result in large swings in the contribution requirements.

- There are external factors including legislative, regulatory or financial reporting changes that could impact the Plan's funding and disclosure requirements. While we do not assume any changes in such external factors, it is important to understand that they could have significant consequences for the Plan. For example, legislative proposals in 2018 showed that Congress continues to consider possible changes to funding requirements for multiemployer plans (such as changes to the zone rules) and increases in PBGC premiums.
- A detailed risk assessment is important for your Plan because:
  - The outlook for financial markets and future industry activity is uncertain due to COVID-19 and inflation.
  - The Plan could re-enter endangered status in the near future.
  - The Plan's asset allocation has potential for a significant amount of investment return volatility.
  - Potential changes in the covered population and/or plan industry may result in participant choices that vary from those assumed.

Summary of PPA'06 zone status rules

- Based on projections of the credit balance in the FSA, the funded percentage, and cash flow sufficiency tests, plans are categorized in one of the "zones" described below.
- The funded percentage is determined using the actuarial value of assets and the present value of benefits earned to date, based on the actuary's best estimate assumptions.

<table>
<tr>
<td>Critical Status (Red Zone)</td>
<td>A plan is classified as being in critical status (the Red Zone) if:
• The funded percentage is less than 65%, and either there is a projected FSA deficiency within five years or the plan is projected to be unable to pay benefits within seven years, or
• There is a projected FSA deficiency within four years, or
• There is a projected inability to pay benefits within five years, or
• The present value of vested benefits for inactive participants exceeds that for actives, contributions are less than the value of the current year's benefit accruals plus interest on existing unfunded accrued benefit liabilities, and there is a projected FSA deficiency within five years, or
• As permitted by the Multiemployer Pension Reform Act of 2014, the plan is projected to be in the Red Zone within the next five years and the plan sponsor elects to be in critical status.
A critical status plan is further classified as being in critical and declining status if:
• The ratio of inactive participants to active participants is at least 2 to 1, and there is an inability to pay benefits projected within 20 years, or
• The funded percentage is less than 80%, and there is an inability to pay benefits projected within 20 years, or
• There is an inability to pay benefits projected within 15 years.
Any amortization extensions are ignored for testing initial entry into the Red Zone.
The Trustees are required to adopt a formal Rehabilitation Plan, designed to allow the plan to emerge from critical status by the end of the rehabilitation period. If they determine that such emergence is not reasonable, the Rehabilitation Plan must be designed to emerge as of a later time or to forestall possible insolvency.
Trustees of Red Zone plans have tools, such as the ability to reduce or eliminate early retirement subsidies, to remedy the situation. Accelerated forms of benefit payment (such as lump sums) are prohibited. However, unless the plan is critical and declining, Trustees may not reduce benefits of participants who retired before being notified of the plan's critical status (other than rolling back recent benefit increases) or alter core retirement benefits payable at normal retirement age.</td>
</tr>
</table>

Endangered Status (*Yellow Zone*)	A plan not in critical status (*Red Zone*) is classified as being in endangered status (the *Yellow Zone*) if: • The funded percentage is less than 80%, or • There is a projected FSA deficiency within seven years. A plan that has both of the endangered conditions present is classified as seriously endangered. Trustees of a plan that was in the *Green Zone* in the prior year can elect not to enter the *Yellow Zone* in the current year (although otherwise required to do so) if the plan's current provisions would be sufficient (with no further action) to allow the plan to emerge from the *Yellow Zone* within ten years. The Trustees are required to adopt a formal Funding Improvement Plan, designed to improve the current funded percentage, and avoid a funding deficiency as of the emergence date.

Green Zone	A plan not in critical status (the *Red Zone*) nor in endangered status (the *Yellow Zone*) is classified as being in the *Green Zone.*

Early Election of Critical Status	Trustees of a *Green* or *Yellow Zone* plan that is projected to enter the *Red Zone* within the next five years may elect whether or not to enter the *Red Zone* for the current year.

Section 3: Certificate of Actuarial Valuation

September 28, 2022

Certificate of Actuarial Valuation

This is to certify that Segal has prepared an actuarial valuation of the Sheet Metal Workers' National Pension Fund as of January 1, 2022 in accordance with generally accepted actuarial principles and practices. It has been prepared at the request of the Board of Trustees to assist in administering the Fund and meeting filing requirements of federal government agencies. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Trustees and may only be provided to other parties in its entirety.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law.

The valuation is based on the assumption that the Plan is qualified as a multiemployer plan for the year and on draft information supplied by the auditor with respect to contributions and assets and reliance on the Plan Administrator with respect to the participant data. Segal does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. To the extent we can, however, Segal does review the data for reasonableness and consistency. Based on our review of the data, we have no reason to doubt the substantial accuracy of the information on which we have based this report and we have no reason to believe there are facts or circumstances that would affect the validity of these results. Adjustments for incomplete or apparently inconsistent data were made as described in the attached Exhibit K.

I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of my knowledge, the information supplied in this actuarial valuation is complete and accurate, except as noted in Exhibit A. Each prescribed assumption for the determination of Current Liability was applied in accordance with applicable law and regulations. In my opinion, each other assumption is reasonable (taking into account the experience of the Plan and reasonable expectations) and such other assumptions, in combination, offer my best estimate of anticipated experience under the Plan.

Daniel V. Ciner, MAAA
Senior Vice President and Actuary
Enrolled Actuary No. 20-05773

Exhibit A: Table of Plan Coverage

The valuation was made with respect to the following data supplied to us by the Plan Administrator.

Category	Year Ended December 31 2020	Year Ended December 31 2021	Change from Prior Year
Participants in Fund Office tabulation	63,952	63,665	-0.5%
Less: Participants with less than one year of vesting service	2,387	2,597	N/A
Active participants in valuation:			
• Number	61,565	61,068	-0.8%
• Average age	42.6	42.5	-0.1
• Average pension credits	13.2	13.2	0.0
• Average contribution rate for upcoming year	$5.30	$5.39	1.7%
• Number with unknown age information	459	269	-41.4%
• Total active vested participants	43,785	43,821	0.1%
Inactive participants with rights to a pension:			
• Number	33,529	34,242	2.1%
• Average age	53.2	53.7	0.5
• Average monthly benefit	$489	$495	1.2%
• Beneficiaries with rights to deferred payments	112	183	63.4%
• Alternate payees with rights to deferred payments	477	521	9.2%
• Number with unknown age information	60	55	-8.3%
Pensioners:			
• Number in pay status	39,898	39,813	-0.2%
• Average age	72.9	73.1	0.2
• Average monthly benefit	$990	$1,016	2.6%
• Number of alternate payees in pay status	1,384	1,580	14.2%
• Number in suspended status	84	47	-44.0%
Beneficiaries:			
• Number in pay status	9,533	9,615	0.9%
• Number in suspended status	9	0	-100.0%
• Average age	77.2	77.5	0.3
• Average monthly benefit	$480	$499	4.0%
Total participants (excluding alternate payees)	**144,730**	**144,968**	**0.2%**

Exhibit B: Actuarial Factors for Minimum Funding

	Year Ended December 31	
	2020	2021
Interest rate assumption	7.50%	7.50%
Normal cost, including administrative expenses	$182,330,719	$141,017,245
Market value as reported by Calibre CPA Group (MVA)[1]	6,470,960,172	7,406,740,540
Actuarial value of assets (AVA)	6,172,757,663	6,843,965,531
Actuarial accrued liability	**$8,166,281,539**	**$8,398,448,425**
• Pensioners and beneficiaries[2]	$4,592,623,146	$4,713,084,252
• Inactive participants with vested rights[3]	1,020,218,971	1,101,074,352
• Active participants	2,553,439,422	2,584,289,821
Unfunded actuarial accrued liability based on AVA	$1,993,523,876	$1,554,482,894

[1] Excludes net receivable withdrawal liability payments of $11,639,829 for 2020 and $16,504,446 for 2021.
[2] Includes liabilities for 1,384 former spouses in pay status for 2020 and 1,580 for 2021.
[3] Includes liabilities for 477 former spouses with deferred benefits for 2020 and 521 for 2021.

Exhibit C: Summary Statement of Income and Expenses on a Market Value Basis

	Year Ended December 31, 2020		Year Ended December 31, 2021	
Contribution income:				
• Employer contributions and withdrawal liability payments, net of amounts deemed uncollectible	$546,228,324		$569,061,859	
• Liquidated damages	336,039		800,912	
Contribution income		*$556,564,363*		*$569,862,771*
Investment income:				
• Interest and dividends	$63,569,997		$58,483,663	
• Capital appreciation/(depreciation)	620,213,028		877,122,358	
• Less investment fees	-12,248,944		-15,313,942	
Net investment income		*671,534,081*		*920,292,079*
Other income		*705,727*		*804,098*
Total income available for benefits		**$1,228,804,171**		**$1,490,958,948**
Less benefit payments and expenses:				
• Pension benefits	-$525,918,202		-$541,444,993	
• Administrative expenses	-14,902,376		-13,733,587	
Total benefit payments and expenses		*-$540,820,578*		*-$555,178,580*
Market value of assets[1]		**$6,470,960,172**		**$7,406,740,540**

[1] Excludes net withdrawal liability receivable

Exhibit D: Investment Return – Actuarial Value vs. Market Value

	Actuarial Value Investment Return		Market Value Investment Return			Actuarial Value Investment Return		Market Value Investment Return	
Year Ended December 31	Amount	Percent	Amount	Percent	Year Ended December 31	Amount	Percent	Amount	Percent
2002	-$154,706,918	-5.26%	-$194,048,412	-7.69%	2012	$243,627,164	6.95%	$349,221,467	11.98%
2003	229,560,422	8.50%	458,228,754	20.44%	2013	293,987,827	7.99%	656,623,939	20.56%
2004	239,619,449	8.50%	298,949,842	11.55%	2014	250,531,303	6.40%	232,193,895	6.12%
2005	249,128,731	8.50%	201,693,098	7.31%	2015	163,972,601	3.97%	-16,599,604	-0.42%
2006	153,183,390	5.01%	370,984,124	13.07%	2016	224,011,197	5.20%	321,747,587	8.08%
2007	235,073,194	7.57%	243,628,390	7.84%	2017	282,315,215	6.18%	612,744,159	14.11%
2008	-193,649,545	-5.93%	-905,604,097	-27.64%	2018	248,449,888	5.05%	-206,944,589	-4.12%
2009	463,585,989	15.45%	561,785,116	24.45%	2019	344,403,681	6.56%	841,807,966	17.18%
2010	209,948,846	6.25%	398,844,675	14.48%	2020	521,888,422	9.25%	671,534,081	11.60%
2011	122,036,155	3.52%	-52,598,539	-1.72%	2021	655,719,579	10.61%	920,292,079	14.20%
					Total	**$4,782,686,590**		**$5,764,483,931**	
					Most recent three-year average return:		**8.81%**		**14.33%**
					Most recent five-year average return:		**7.73%**		**10.70%**
					Most recent ten-year average return:		**7.00%**		**9.87%**
					20-year average return:		**6.23%**		**8.02%**

Note The average return for the most recent three years is the arithmetic average of the returns. For average returns over five or more years, the average return is weighted by the asset value. The actuarial value investment returns for 2006 and 2008 include the effect of a change in the method for determining the actuarial value of assets.

Exhibit E: Information on Plan Status as of January 1, 2022

Plan status (as certified on February 18, 2022, for the 2022 zone certification)	***"Green"***
Actuarial value of assets for FSA	$6,843,965,531
Accrued liability under unit credit cost method	8,398,448,425
Funded percentage for monitoring plan status	81.5%

Annual Funding Notice for Plan Year Beginning January 1, 2022 and Ending December 31, 2022

	2022 Plan Year	**2021 Plan Year**	**2020 Plan Year**
Actuarial valuation date	January 1, 2022	January 1, 2021	January 1, 2020
Funded percentage	81.5%	75.6%	70.0%
Value of assets	$6,843,965,531	$6,172,757,663	$5,634,419,729
Value of liabilities	8,398,448,425	8,166,281,539	8,044,416,537
Market value of assets as of Plan Year end*	Not available	7,406,740,540	6,470,960,172

* Excludes net withdrawal liability payments receivable

Critical or Endangered Status

The Plan was not in endangered or critical status in the Plan Year because it is not in critical status and its funded percentage was greater than 80%, and the credit balance was projected to be positive for at least ten years. In addition, the Plan is not projected to be in critical status for any of the five succeeding Plan years.

Exhibit F: Schedule of Projection of Expected Benefit Payments

(Schedule MB, Line 8b(1))

Plan Year	Expected Annual Benefit Payments
2022	$576,669,951
2023	596,580,613
2024	614,736,941
2025	631,766,986
2026	647,135,157
2027	660,303,488
2028	672,023,430
2029	681,337,324
2030	688,889,540
2031	694,691,423

This assumes the following:

- No additional benefits will be accrued.
- Experience is in line with valuation assumptions.
- No new entrants are covered by the Plan.

Exhibit G: Schedule of Active Participant Data

(Schedule MB, Line 8b(2))

The participant data is for the year ended December 31, 2021.

		Pension Credits									
Age	**Total**	**Less than 1**	**1 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25 - 29**	**30 - 34**	**35 - 39**	**40 & over**
Under 25	4,096	443	3,370	283	–	–	–	–	–	–	–
25 - 29	6,229	243	3,594	2,303	89	–	–	–	–	–	–
30 - 34	7,785	201	3,179	2,903	1,385	117	–	–	–	–	–
35 - 39	8,067	142	2,165	2,138	2,122	1,438	62	–	–	–	–
40 - 44	8,385	89	1,552	1,467	1,726	1,962	1,534	55	–	–	–
45 - 49	7,575	60	1,008	879	1,085	1,462	1,975	1,063	43	–	–
50 - 54	7,709	40	717	583	766	1,109	1,656	1,681	1,097	60	–
55 - 59	6,866	23	485	437	532	814	1,193	1,170	1,409	773	30
60 - 64	3,420	12	250	249	272	401	505	474	450	472	335
65 - 69	590	1	44	48	85	63	99	54	51	41	105
70 & over	77	1	14	5	7	11	8	6	6	7	11
Unknown	269	31	193	41	4	–	–	–	–	–	–
Total	**61,068**	**1,286**	**16,571**	**11,336**	**8,073**	**7,377**	**7,032**	**4,503**	**3,056**	**1,353**	**481**

Note: Excludes 2,597 participants with less than one year of vesting service.

Exhibit H: Funding Standard Account

- ERISA imposes a minimum funding standard that requires the Plan to maintain an FSA. The accumulation of contributions in excess of the minimum required contributions is called the FSA credit balance. If actual contributions fall short on a cumulative basis, a funding deficiency has occurred.
- The FSA is charged with the normal cost and the amortization of increases or decreases in the unfunded actuarial accrued liability due to plan amendments, experience gains or losses, and changes in actuarial assumptions and funding methods. The FSA is credited with employer contributions and withdrawal liability payments.
- Increases or decreases in the unfunded actuarial accrued liability are amortized over 15 years except that short-term benefits, such as 13th checks, are amortized over the scheduled payout period.
- Beginning in 2009, the Funding Standard Account reflects the Trustees' election under PRA 2010 to extend the amortization of the 2008 investment loss, smooth those losses over 10 years in the actuarial value of assets, and increase the upper limit on the actuarial value of assets.

FSA for the Plan Years ending December 31, 2021 and 2022 Recognizing Five-Year Amortization Extension

		December 31, 2021	December 31, 2022
1	Prior year funding deficiency	$0	$0
2	Normal cost, including administrative expenses	182,330,719	141,017,245
3	Amortization charges	581,126,539	534,971,793
4	Interest on **1, 2 and 3**	57,259,294	50,699,178
5	Total charges	$820,716,552	$726,688,216
6	Prior year credit balance	$756,313,218	$873,462,169
7	Employer contributions and withdrawal liability payments	569,862,771	TBD
8	Amortization credits	269,683,150	262,932,409
9	Interest on **6, 7 and 8**	98,319,582	85,229,593
10	Full funding limitation credits	0	0
11	Total credits	$1,694,178,721	$1,221,624,171
12	Credit balance: **11 - 5**	$873,462,169	TBD
13	Minimum contribution with interest required to avoid a funding deficiency: **5 -11** not less than zero	N/A	$0

Section 3: Certificate of Actuarial Valuation

- PPA'06 requires the Internal Revenue Service (IRS) to permit multiemployer plans facing a funding deficiency within 10 years to extend the schedule for paying off their liabilities by five years.
- The Trustees elected to utilize this provision effective January 1, 2009.
- The chart below shows the development of the Funding Standard Account without the five-year amortization extension.

FSA for the Plan Years ending December 31, 2021 and 2022
Disregarding Five-Year Amortization Extension

		December 31, 2021	December 31, 2022
1	Prior year funding deficiency	$0	$0
2	Normal cost, including administrative expenses	182,330,719	141,017,245
3	Amortization charges	454,318,371	419,822,192
4	Interest on **1, 2 and 3**	47,748,682	42,062,958
5	Total charges	$684,397,772	$602,902,395
6	Prior year credit balance	$66,215,869	$267,926,300
7	Employer contributions and withdrawal liability payments	569,862,771	TBD
8	Amortization credits	269,683,150	262,932,410
9	Interest on **6, 7 and 8**	46,562,281	39,814,403
10	Full funding limitation credits	0	0
11	Total credits	952,324,072	570,673,113
12	Credit balance **11 – 5**	267,926,300	TBD
13	Minimum contribution with interest required to avoid a funding deficiency: **5 -11** not less than zero	N/A	$32,229,282

Full Funding Limitation (FFL) and Credits for Plan Year January 1, 2022

ERISA FFL (accrued liability FFL)	$2,761,634,481
RPA'94 override (90% current liability FFL)	9,542,066,353
FFL credit	0

Schedule MB, line 8e
Difference between minimum required contribution for the year and the minimum that would have been required without extending the amortization bases is $32,229,282.

Schedule of FSA Bases (Charges) (Schedule MB, Line 9c)

Type of Base	Date Established	Outstanding Balance	Years Remaining	Amortization Amount
Plan Amendment[1]	01/01/1989	$28,511,418	2	$14,770,976
Prior Local 137 Combined Bases[1]	01/01/1990	75,592	1	75,592
Plan Amendment[1]	01/01/1990	13,282,503	3	4,751,276
Plan Amendment[1]	01/01/1991	17,612,131	4	4,891,544
Plan Amendment[1]	01/01/1992	105,856,345	5	24,338,562
Plan Amendment[1]	01/01/1993	26,243,782	6	5,201,027
Plan Amendment[1]	01/01/1994	34,656,453	7	6,086,650
Plan Amendment[1]	01/01/1995	9,566,023	8	1,519,236
Plan Amendment[1]	01/01/1996	43,972,003	9	6,412,433
Change in Assumptions[1]	01/01/1996	68,157,020	9	9,939,332
Plan Amendment[1]	01/01/1997	65,421,585	10	8,866,050
Plan Amendment[1]	01/01/1998	16,993,347	11	2,160,881
Plan Amendment[1]	01/01/1999	4,617,542	12	555,298
Plan Amendment[1]	01/01/2000	166,299,000	13	19,037,630
Plan Amendment[1]	01/01/2001	1,754,246	14	192,228
Plan Amendment[1]	01/01/2002	97,314,431	15	10,255,333
Plan Amendment[1]	01/01/2003	36,548,884	16	3,719,186
Actuarial Loss[1]	01/01/2003	60,459,486	1	60,459,486
Actuarial Loss[1]	01/01/2004	8,554,035	2	4,431,608
Plan Amendment[1]	01/01/2004	126,530,261	17	12,476,476
Actuarial Loss[1]	01/01/2005	21,471,030	3	7,680,390
Actuarial Loss[1]	01/01/2006	12,068,323	4	3,351,822

[1] Denotes bases that were extended five years (not to exceed 30 years for the extended recognition of the 2008 investment loss) under IRC Section 431(d)(1)

Type of Base	Date Established	Outstanding Balance	Years Remaining	Amortization Amount
Plan Amendment[1]	01/01/2006	34,318,385	19	3,205,525
Actuarial Loss[1]	01/01/2007	20,007,716	5	4,600,187
Plan Amendment[1]	01/01/2007	40,024,849	20	3,652,209
Change in Assumptions[1]	01/01/2007	830,969,156	20	75,824,731
Actuarial Loss[1]	01/01/2008	22,640,277	6	4,486,879
Actuarial Loss[1]	01/01/2009	12,689,053	7	2,228,556
Extended Recognition of 2008 Investment Loss[1]	01/01/2009	539,965,428	17	53,243,117
Actuarial Loss	01/01/2010	64,824,113	13	7,420,956
Change in Assumptions	01/01/2011	57,087,187	4	15,855,236
Extended Recognition of 2008 Investment Loss	01/01/2011	250,750,856	16	25,516,210
Plan Amendment	01/01/2012	1,867,286	5	429,328
Actuarial Loss	01/01/2012	45,128,712	5	10,376,024
Extended Recognition of 2008 Investment Loss	01/01/2012	56,654,333	16	5,765,101
Plan Amendment	01/01/2013	2,456,242	6	486,781
Change in Assumptions	01/01/2013	23,455,200	6	4,648,382
Extended Recognition of 2008 Investment Loss	01/01/2013	64,749,246	16	6,588,833
Plan Amendment	01/01/2014	1,627,060	7	285,758
Extended Recognition of 2008 Investment Loss	01/01/2014	157,669,004	16	16,044,274
Plan Amendment	01/01/2015	2,272,279	8	360,874
Actuarial Loss	01/01/2015	47,838,325	8	7,597,484

[1] Denotes bases that were extended five years (not to exceed 30 years for the extended recognition of the 2008 investment loss) under IRC Section 431(d)(1)

Type of Base	Date Established	Outstanding Balance	Years Remaining	Amortization Amount
Change in Assumptions	01/01/2015	107,640,791	8	17,095,062
Plan Amendment	01/01/2016	3,083,834	9	449,715
Actuarial Loss	01/01/2016	126,491,909	9	18,446,304
Plan Amendment	01/01/2017	895,742	10	121,393
Actuarial Loss	01/01/2017	100,884,785	10	13,672,087
Actuarial Loss	01/01/2018	79,028,874	11	10,049,346
Plan Amendment	01/01/2019	783,010	12	94,164
Actuarial Loss	01/01/2019	125,991,223	12	15,151,509
Plan Amendment	01/01/2020	285,544	13	32,689
Plan Amendment	01/01/2022	664,835	15	70,063
Total		**$3,788,710,694**		**$534,971,793**

Schedule of FSA Bases (Credits) (Schedule MB, Line 9h)

Type of Base	Date Established	Outstanding Balance	Years Remaining	Amortization Amount
Plan Amendment	07/01/1994	$88,604	8.5	$13,462
Plan Amendment	01/01/1996	53,178,644	4	14,769,689
Plan Amendment	09/01/2003	173,870,511	11.67	21,285,336
Plan Amendment	01/01/2005	26,902,539	13	3,079,758
Plan Amendment	01/01/2008	2,607,010	1	2,607,010
Plan Amendment	03/01/2008	57,143,139	1.17	49,137,498
Plan Amendment	08/01/2008	42,981,168	1.58	27,770,773
Change in Asset Method (Funding Relief)	01/01/2009	187,288,291	17	18,467,502
Plan Amendment	01/01/2010	1,754,749	3	627,690
Actuarial Gain	01/01/2010	35,494,356	3	12,696,666
Extended Recognition of 2008 Investment Loss	01/01/2010	139,727,732	16	14,218,584
Plan Amendment	01/01/2011	4,888,829	4	1,357,810
Actuarial Gain	01/01/2011	108,806,629	4	30,219,650
Plan Amendment	01/01/2013	109,731	6	21,747
Actuarial Gain	01/01/2013	23,839,430	6	4,724,529
Actuarial Gain	01/01/2014	103,088,611	7	18,105,267
Plan Amendment	01/01/2018	6,422,944	11	816,744
Change in assumptions	01/01/2019	75,741,502	12	9,108,555
Plan Amendment	01/01/2021	430,125	14	47,133
Actuarial Gain	01/01/2021	122,408,081	14	13,413,349
Actuarial Gain	01/01/2022	193,993,006	15	20,443,657
Total		**$1,360,765,631**		**$262,932,409**

Exhibit I: Maximum Deductible Contribution

- Employers that contribute to defined benefit pension plans are allowed a current deduction for payments to such plans. There are various measures of a plan's funded level that are considered in the development of the maximum tax-deductible contribution amount.
- The maximum deductible amount for this valuation is the excess of 140% of "current liability" over assets as shown below. "Current liability" is one measure of the actuarial present value of all benefits earned by the participants as of the valuation date. This limit is significantly higher than the current contribution level.
- Contributions in excess of the maximum deductible amount are not prohibited; only the deductibility of these contributions is subject to challenge and may have to be deferred to a later year. In addition, if contributions are not fully deductible, an excise tax in an amount equal to 10% of the non-deductible contributions may be imposed. However, the plan sponsor may elect to exempt the non-deductible amount up to the ERISA full-funding limitation from the excise tax.
- The Trustees should review the interpretation and applicability of all laws and regulations concerning any issues as to the deductibility of contribution amounts with Fund Counsel.

1	Current liability for maximum deductible contribution, projected to the end of the Plan Year	$18,094,010,506
2	140% of current liability	25,331,614,708
3	Actuarial value of assets, projected to the end of the Plan Year	6,742,543,102
4	**Maximum deductible contribution: 2 - 3**	**$18,589,071,606**

Exhibit I: Current Liability

The table below presents the current liability for the Plan Year beginning January 1, 2022.

Item[1]	Number of Participants		Current Liability
Interest rate assumption			2.22%
Retired participants and beneficiaries receiving payments	49,475		$7,587,393,610
Inactive vested participants	34,425		2,904,429,950
Active participants			
• Non-vested benefits		1,108,224,547	
• Vested benefits		6,221,292,134	
• Total active	61,068		$7,329,516,681
Total	**144,968**		**$17,821,340,241**

Expected increase in current liability due to benefits accruing during the Plan Year	$450,988,134
Expected release from current liability for the Plan Year	577,552,724
Expected plan disbursements for the Plan Year, including administrative expenses of $15,000,000	592,552,724

Current value of assets[2]	$7,423,244,986
Percentage funded for Schedule MB	41.65%

[1] The actuarial assumptions used to calculate these values are shown in Exhibit K.
[2] Includes net withdrawal liability receivables.

Exhibit J: Actuarial Present Value of Accumulated Plan Benefits

The actuarial present value of accumulated plan benefits calculated in accordance with FASB ASC 960 is shown below as of January 1, 2021 and as of January 1, 2022. In addition, a reconciliation between the two dates follows.

	Benefit Information Date	
	January 1, 2021	**January 1, 2022**
Actuarial present value of vested accumulated plan benefits:		
• Participants currently receiving payments	$4,592,623,146	$4,713,084,252
• Other vested benefits	3,205,865,654	3,313,755,408
• Total vested benefits	$7,798,488,800	$8,026,839,660
Actuarial present value of non-vested accumulated plan benefits	367,792,739	371,608,765
Total actuarial present value of accumulated plan benefits	**$8,166,281,539**	**$8,398,448,425**

Factors	**Change in Actuarial Present Value of Accumulated Plan Benefits**
Plan amendments[1]	$664,835
Benefits accumulated, net experience gain or loss, changes in data	180,780,116
Benefits paid	-541,444,993
Interest	592,166,928
Total	**$232,166,886**

[1] Includes net impact of changes in individual participants' contributions rate and/or Funding Improvement Plan option.

Exhibit K: Statement of Actuarial Assumptions, Methods and Models

(Schedule MB, Line 6)

Rationale for Demographic and Noneconomic Assumptions	The information and analyses used in selecting each demographic assumption that has a significant effect on this actuarial valuation are shown in the experience study report titled: "Demographic Experience Analysis: January 1, 2013 through December 31, 2017," dated April 2, 2019. Current data is reviewed in conjunction with each annual valuation. Based on professional judgment, no assumption changes are warranted at this time.
Mortality Rates	*Healthy Male Employee:* 103% of the RP-2006 Blue Collar Male Employee Mortality Table, projected generationally from 2006 with scale MP-2018 *Healthy Female Employee:* 108% of the RP-2006 Blue Collar Female Employee Mortality Table, projected generationally from 2006 with scale MP-2018 *Healthy Male Pensioner or Beneficiary:* 103% of the RP-2006 Blue Collar Healthy Annuitant Mortality Table, projected generationally from 2006 with scale MP-2018 *Healthy Female Pensioner or Beneficiary:* 108% of the RP-2006 Blue Collar Healthy Annuitant Mortality Table, projected generationally from 2006 with scale MP-2018 *Disabled Male:* 90% of the RP-2006 Disabled Male Retiree Mortality Table, projected generationally from 2006 with scale MP-2018 *Disabled Female:* 100% of the RP-2006 Disabled Female Retiree Mortality Table, projected generationally from 2006 with scale MP-2018 The above tables with generational projections to the ages of participants as of the measurement date reasonably reflect the mortality experience of the Plan as of the measurement date. The mortality tables were then adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

Annuitant Mortality Rates

	Rate (%)[1]			
	Healthy		Disabled	
Age	Male	Female	Male	Female
55	0.62%	0.46%	2.10%	1.53%
60	0.91%	0.70%	2.51%	1.91%
65	1.39%	1.00%	3.05%	2.22%
70	2.09%	1.51%	3.75%	2.82%
75	3.28%	2.47%	4.94%	4.09%
80	5.42%	4.24%	6.99%	6.27%
85	9.16%	7.47%	10.44%	9.62%
90	15.55%	12.96%	16.05%	14.24%

[1] Mortality rates are projected on a generational basis using Scale MP-2018. Rates above are sample rates in 2022

Termination Rates

	Rate (%)				
	Mortality[1]			Withdrawal[3]	
Age	Male	Female	Disability[2]	Construction	Production
20	0.06%	0.02%	0.03%	18.00%	23.00%
25	0.08%	0.03%	0.03%	10.00%	20.00%
30	0.08%	0.03%	0.03%	6.00%	15.00%
35	0.09%	0.05%	0.03%	5.00%	13.00%
40	0.11%	0.06%	0.04%	4.00%	11.00%
45	0.14%	0.08%	0.15%	3.00%	7.00%
50	0.23%	0.13%	0.40%	2.00%	7.00%
55	0.37%	0.21%	0.10%	2.00%	7.00%
60	0.65%	0.33%	0.10%	2.00%	7.00%

[1] Mortality rates are projected on a generational basis using Scale MP-2018. Rates above are sample rates in 2022.

[2] Participants are assumed to elect non-disability pensions upon eligibility.

[3] Withdrawal rates do not apply at or beyond early retirement age.

Retirement Rates

	Annual Retirement Rates		
Age	**Not Eligible for Special Early**	**Eligible for Special Early but not for 55/30 (60/30) Pension**	**Eligible for 55/30 (60/30) Pension[1]**
55	5%	5%	30%
56-57	5	5	15
58	5	5	15
59	5	8	15
60	6	10	25
61	9	14	25
62	22	33	40
63	13	21	25
64	16	24	25
65-66	25	35	40
67-69	25	35	30
70	100	100	100

[1] Rate at first eligibility for 55/30 (60/30, if applicable) Pension is 30% or above rate at applicable age, if higher

Description of Weighted Average Retirement Age

Age 62, determined as follows: The weighted average retirement age for each participant is calculated as the sum of the product of each potential current or future retirement age times the probability of surviving from current age to that age and then retiring at that age, assuming no other decrements. The overall weighted retirement age is the average of the individual retirement ages based on all the active participants included in the January 1, 2022 actuarial valuation.

Retirement Rates for Inactive Vested Participants

Age	Annual Retirement Rates: Not Eligible for Special Early	Annual Retirement Rates: Eligible for Special Early but not for 55/30 (60/30) Pension	Annual Retirement Rates: Eligible for 55/30 (60/30) Pension
55	5%	15%	65%
56	5	10	40
57	5	10	45
58	5	15	40
59	5	15	25
60	5	15	30
61	5	20	30
62	10	50	50
63	10	30	50
64	15	30	50
65	35	35	50
66-79	25	50	50
80	100	100	100

Description of Weighted Average Retirement Age for Inactive Vested Participants

Age 66, determined as follows: The weighted average retirement age for each participant is calculated as the sum of the product of each potential current or future retirement age times the probability of surviving from current age to that age and then retiring at that age, assuming no other decrements. The overall weighted retirement age is the average of the individual retirement ages based on all the inactive vested participants included in the January 1, 2022 actuarial valuation.

Future Benefit Accruals

- For Construction employees: 1,750 hours per year
- For Production employees: 2,000 hours per year

The Funding Improvement Plan Option covering each participant, based on the current Option included in the census data provided for this valuation, is assumed to remain unchanged.

The Applicable Percentage under the Plan’s benefit formula is 0.75% for 2022 and 1.25% for 2023. For 2024 and beyond, the average expected Applicable Percentage is 0.81%.

The average expected Applicable Percentage was determined by stochastically projecting the Plan’s market investment returns after 2021. The stochastic projections were based on the long-term expected returns and volatility estimates as provided by the Plan’s Investment Manager in 2022, as well as the Plan’s target asset allocation.

Section 3: Certificate of Actuarial Valuation

Unknown Data for Participants	Same as those exhibited by participants with similar known characteristics. If not specified, participants are assumed to be male.
Definition of Active Participants	Employees with at least 435 hours in the most recent plan year and who have accumulated at least one year of vesting service, excluding those who have retired as of the valuation date.
Percent Married	80%
Age and Sex of Spouse	Spouse of male participant is assumed to be three years younger than the participant and spouse of female participant is assumed to be three years older than the participant. If the spouse's sex is not provided, the spouse is assumed to be the opposite sex of the participant.
Benefit Election	50% of participants are assumed to elect a single life annuity, 20% of participants are assumed to elect a 50% joint and survivor annuity (with popup, if available), and 30% of participants are assumed to elect a 100% joint and survivor annuity (with popup, if available).
Delayed Retirement Factors	Inactive vested participants after attaining age 65, with increases up to age 80.
Net Investment Return	7.50% The net investment return assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes as provided by Segal Marco Advisors, as well as the Plan's target asset allocation. In addition, stochastic modeling was performed based on the long-term expected returns and volatility estimates as provided by the Plan's Investment Manager.
Annual Administrative Expenses	$15,000,000 for the year beginning January 1, 2022 (equivalent to $14,426,877 payable at the beginning of the year) or 11.4% of Normal Cost. The annual administrative expenses were based on historical and current data, adjusted to reflect estimated future experience and professional judgment.
Actuarial Value of Assets	The market value of assets less unrecognized returns in prior years. Unrecognized return is equal to the difference between the actual market return and the projected market return, and is recognized 20% per year over a five-year period. The actuarial value is further adjusted, if necessary, to be within 20% of the market value.
Actuarial Cost Method	Unit Credit Actuarial Cost Method. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis.
Benefits Valued	Unless otherwise indicated, includes all benefits summarized in Exhibit M.
Current Liability Assumptions	*Interest:* 2.22%, within the permissible range prescribed under IRC Section 431(c)(6)(E) *Mortality:* Mortality prescribed under IRS Regulations 1.431(c)(6)-1 and 1.430(h)(3)-1(a)(2): RP-2006 employee and annuitant mortality tables, projected generationally using scale MP-2020 (previously, MP-2019)
Estimated Rate of Investment Return	*On actuarial value of assets (Schedule MB, line 6g):* 10.6%, for the Plan Year ending December 31, 2021 *On current (market) value of assets (Schedule MB, line 6h):* 14.2%, for the Plan Year ending December 31, 2021

FSA Contribution Timing (Schedule MB, line 3a)	Unless otherwise noted, contributions are paid periodically throughout the year pursuant to collective bargaining agreements. The interest credited in the FSA is therefore assumed to be equivalent to a June 30 contribution date.
Actuarial Models	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are prepared to meet regulatory, legislative and client requirements. Deterministic cost projections are based on a proprietary forecasting model. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible Enrolled Actuary.

Exhibit L: Summary of Plan Provisions

(Schedule MB, Line 6)

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year	January 1 through December 31
Pension Credit Year	January 1 through December 31
Plan Status	Ongoing plan
Normal Retirement	• *Age Requirement:* 65 • *Service Requirement:* Five years of participation in the Plan • *Amount:* Described below. – **For service on and after January 1, 2014:** ❖ Participant's *Benefit Rate* multiplied by the participant's *Contribution Hours* for the Plan Year multiplied by the Applicable Percentage for the Plan Year. ❖ *Benefit Rate* is the portion of the participant's contribution rate that is subject to benefit accruals. For Participants working under a Collective Bargaining Agreement that qualifies for a 55/30 (or 60/30) Pension, the Benefit Rate is the total Contribution Rate less the 55/30 (or 60/30) Rate (30% of the Contribution Rate for periods after December 1, 2007). ❖ *Contribution Hours* are the hours for which contributions are required to be made for the participant's work in Covered Employment. ❖ *Applicable Percentage* is based on the average of the Plan's rate of market value investment return for each of the three most recent Plan Years reported in the Actuarial Valuation and Review as of January 1 of the immediately preceding Plan Year and is defined in the following table:

Applicable Percentage	Average of Market Value Investment Return Percentages for 3 Most Recent Plan Years
1.25%	10.0% or higher
1.00%	8.5% or higher but less than 10.0%
0.75%	6.5% or higher but less than 8.5%
0.50%	Greater than 0% but less than 6.5%
0.00%	0.0% or less

❖ The above formula applies unless otherwise stated in a Funding Improvement Plan Option.

❖ The Applicable Percentage for the 2022 Plan Year is 0.75%.

Normal Retirement (continued)	– **For service and on and after adoption of Rehabilitation Plan Schedule and before January 1, 2014:** ❖ Default Schedule/Persons for Whom Contribution were Not Required to be Made (“Persons for Whom”): 1% of the amount determined by multiplying the participant’s Benefit Rate by the participant’s Contribution Hours for the Plan Year. ❖ First Alternative Schedule: Same as accrual for service on and after December 1, 2007 and before adoption of Rehabilitation Plan Schedule. ❖ Second Alternative Schedule: 1% of the amount determined by multiplying the participant’s Benefit Rate by the participant’s Contribution Hours for the Plan Year. ❖ Formerly Alternative Schedule and Agreement Did Not Include Required Contribution Rate Increases - No Increase Consequences (“NIC”): 1% of the amount determined by multiplying the participant’s Benefit Rate by the participant’s Contribution Hours for the Plan Year. – **For service and on and after December 1, 2007 and before adoption of Rehabilitation Plan Schedule:** ❖ Employers that have not made required contribution rate increases: Same as accrual for service after August 31, 2003. ❖ Employers that have made required contribution rate increases: 1.5% of the amount determined by multiplying the participant’s Benefit Rate by the participant’s Contribution Hours for the Plan Year (up to 1,200 hours), plus 0.7% of the amount determined by multiplying the participant’s Benefit Rate by the participant’s Contribution Hours (over 1,200 hours). The 1.5% multiplier is applied to the first 1,200 hours at the highest Benefit Rate in effect during the Plan Year. – **For service and on and after August 31, 2003 and before December 1, 2007:** ❖ 0.8571% of the amount determined by multiplying the participant’s Benefit Rate by the participant’s Contribution Hours (up to 1,400 hours), plus 0.3% of the amount determined by multiplying the participant’s Benefit Rate by the participant’s Contribution Hours (over 1,400 hours). For participants in 55/30 Locals, 80% of the total contribution rate is subject to benefit accruals. The 0.8571% multiplier is applied to the first 1,400 hours at the highest Benefit Rate in effect during the Plan Year. ❖ Supplemental accruals: Locals are required to increase their contribution rates subject to benefit accruals by 10% annually for eligibility. Participants of Locals that make the required increases earn a supplemental accrual that brings the total accrual to twice the normal rate in the year following the increase. – **For service and on and after December 31, 1999 and before September 1, 2003:** ❖ 1.7142% of the amount determined by multiplying the participant’s Benefit Rate by the participant’s Contribution Hours (up to 1,400 hours), plus 0.6% of the amount determined by multiplying the participant’s Benefit Rate by the participant’s Contribution Hours (over 1,400 hours). The 1.7142% multiplier is applied to the first 1,400 hours at the highest Benefit Rate in effect during the Plan Year.

Normal Retirement (continued)	– **For service before January 1, 2000:** ❖ Benefit accrued according to the rules of the Plan in effect on December 31, 1999 – **Past service:** ❖ $10.00 for each year of Past Service Credit, if any, up to 10 years • *Post-Normal Retirement Age Adjustment:* Regular pension accrued at Normal Retirement Age (NRA), increased by 1.0% for each month greater than NRA, and 1.5% for each month greater than age 70.
Early Retirement	• The following applies to all participants with an effective date of pension on or after February 1, 2014 retiring under an early retirement provision (Standard Early Retirement, Special Early Retirement, Age 62 Pension, 55/30 Pension, and 60/30 Pension). • Previously, the provisions described for benefits accrued before January 1, 2014 were in effect. Participant may be eligible for different early retirement provisions for pre-2014 and post-2013 accrued benefits. Portions of the post-2013 accrued benefits may also be subject different early retirement provisions depending on the classification of employment of the participant's Contribution Hours.
Standard Early Retirement	• *Age Requirement:* 55 • *Service Requirement:* Fulfill any one of the following: a. 10 years of Pension Credits, including at least five years of Future Service Credit, or b. 10 years of Vesting Service, or c. 15 years of Pension Credits, including at least 12 months of Future Service Credit • *Amount:* Normal Retirement benefit reduced as described below. – **For benefits accrued on and after January 1, 2014:** Reductions based on the participant's Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status. ❖ *Default Option* — Actuarially from age 65 (Unsubsidized Early Retirement Pension) ❖ *First Alternative Option* — 6% per year from age 65 ❖ *Second Alternative Option* — Actuarially from age 65 (Unsubsidized Early Retirement Pension) – **For benefits accrued before January 1, 2014:** Reductions based on the participant's Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status. ❖ *Default Schedule/ Persons for Whom* — Actuarially from age 65 (Unsubsidized Early Retirement Pension) ❖ *First Alternative Schedule* — 6% per year from age 65 ❖ *Second Alternative Schedule* — Actuarially from age 65 (Unsubsidized Early Retirement Pension) ❖ *NIC* — Actuarially from age 65 (Unsubsidized Early Retirement Pension)

Special Early Retirement	• *Age Requirement:* 55 • *Service Requirement:* Fulfill any one of the following: a. 10 years of Pension Credits, including at least five years of Future Service Credit, or b. 10 years of Vesting Service, or c. 15 years of Pension Credits, including at least 12 months of Future Service Credit • *Active Service Requirement:* Complete at least 3,500 hours of work in covered employment during the five consecutive calendar years immediately preceding retirement • *Amount:* Normal Retirement benefit reduced as described below. – **For benefits accrued on and after January 1, 2014:** Reductions based on the participant's Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status. ❖ *Default Option* — Unavailable ❖ *First Alternative Option* — 6% per year from age 62 ❖ *Second Alternative Option* — Unavailable – **For benefits accrued before January 1, 2014:** Reductions based on the participant's Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status. ❖ *Default Schedule/ Persons for Whom* — Unavailable ❖ *First Alternative Schedule* — 6% per year from age 62 ❖ *Second Alternative Schedule* — Unavailable ❖ NIC — Unavailable

Age 62 Pension	• *Age Requirement:* 62 • *Service Requirement:* Same as Special Early Retirement • *Active Service Requirement:* Same as Special Early Retirement • *Amount:* Described below. – **For benefits accrued on and after January 1, 2014:** Reductions based on the participant's Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status. ❖ *Default Option* — Unavailable ❖ *First Alternative Option* — Unavailable ❖ *Second Alternative Option* — Normal Retirement Benefit amount – **For benefits accrued before January 1, 2014:** Amount based on the participant's Home Local Schedule (Rehabilitation Plan Schedule) when the Plan was in critical status. ❖ *Default Schedule/ Persons for Whom* — Unavailable ❖ *First Alternative Schedule* — Unavailable ❖ *Second Alternative Schedule* — Normal Retirement Benefit amount ❖ *NIC* — Normal Retirement Benefit amount

55/30 Pension	• *Age Requirement:* 55 • *Service Requirement:* 30 years of Future Service Credit with at least 60 months of the last 120 months of Future Service Credit subject to a 55/30 Rate • *Active Service Requirement:* Complete at least 3,500 hours of work in covered employment at 55/30 Rate during the five consecutive calendar years immediately preceding retirement • *Amount:* Described below. – **For benefits accrued on and after January 1, 2014:** Reductions based on the participant's Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status. ❖ *Default Option* — Unavailable ❖ *First Alternative Option* — Normal Retirement Benefit amount ❖ *Second Alternative Option* — Unavailable – **For benefits accrued before January 1, 2014:** Amount based on the participant's Home Local Schedule (Rehabilitation Plan Schedule) when the Plan was in critical status. ❖ *Default Schedule/ Persons for Whom* — Unavailable ❖ *First Alternative Schedule* — Normal Retirement Benefit amount ❖ *Second Alternative Schedule* — Unavailable ❖ *NIC* — Unavailable

60/30 Pension	• *Age Requirement:* 60 • *Service Requirement:* Same as 55/30 Pension • *Active Service Requirement:* Same as 55/30 Pension • *Amount:* Described below. – **For benefits accrued on and after January 1, 2014:** Reductions based on the participant's Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status. ❖ *Default Option* Unavailable ❖ *First Alternative Option* Unavailable ❖ *Second Alternative Option* Normal Retirement Benefit amount – **For benefits accrued before January 1, 2014:** Amount based on the participant's Home Local Schedule (Rehabilitation Plan Schedule) when the Plan was in critical status. ❖ *Default Schedule/ Persons for Whom* Unavailable ❖ *First Alternative Schedule* Unavailable ❖ *Second Alternative Schedule* Normal Retirement Benefit amount ❖ *NIC* Unavailable
Full Disability	• *Age Requirement:* Under age 55 • *Service Requirement:* 10 years of Credited Service, including at least five years of Future Service Credit • *Active Service Requirement:* Worked at least 435 hours in the 24-month period immediately preceding application date of disablement • *Other Requirement:* Approved for disability benefit with the Social Security Administration or Railroad Retirement Board • *Amount:* Early Retirement benefit amount, payable beginning in the seventh month of disability • *Charge for Coverage:* None *The Disability Benefit is not payable for participants categorized as Persons for Whom when the Plan was in critical status unless all eligibility conditions had been satisfied before January 1, 2010.*
Vesting	• *Age Requirement:* None • *Service Requirement:* Five years of Vesting Service • *Amount:* Regular or early pension accrued based on plan in effect when last active • *Normal Retirement Age:* 65

Spouse's Pre-Retirement Death Benefit	• *Age Requirement:* None • *Service Requirement:* Has attained Vested Status • *Amount:* 50% of the monthly benefit the participant would have received had he/she terminated employment on his/her date of death and survived to his/her Early Retirement Date (or any later date elected by the spouse), retired and elected to receive benefits in the Normal Form of payment. • *When Paid:* Immediately if participant's death occurred after attainment of his/her earliest retirement age, otherwise month in which the participant would have attained his/her earliest retirement age. If surviving spouse elects to receive payments before the month in which participant would have attained his/her earliest retirement age, the monthly benefit will be the actuarial equivalent of the amount described above.
Pre-Retirement Lump-sum Death Benefit	• *Age Requirement:* None • *Eligibility:* Date of death after December 31, 2007; has attained Vested Status; no portion of the benefit assigned to an Alternative Payee under a QDRO; and worked at least 435 hours within 24-month period preceding death • *Amount:* $5,000
Post-Retirement Death Benefit	• *50% Joint and Survivor:* If married, pension benefits are paid in the form of a 50% joint and survivor annuity unless the participant and spouse reject this form. If not rejected, the benefit amount otherwise payable is reduced to reflect the joint and survivor coverage. If not rejected, the spouse predeceases the employee, and the employee retired on March 1, 1999 or later, the employee's benefit amount will subsequently be increased to the unreduced amount payable ("pop-up" feature) had the joint and survivor coverage been rejected. If rejected, or if not married, benefits are payable for the life of the employee, or in any other available optional form elected by the employee in an actuarially equivalent amount. The "pop-up" feature is only applicable to pre-2014 benefits if the participant's Home Local Schedule/Rehabilitation Plan Schedule as of December 31, 2013 was the First Alternative Schedule or Second Alternative Schedule. It is only applicable to post-2013 benefits attributable to Contribution Hours worked under a collective bargaining agreement satisfying the required contribution rate increases under the Rehabilitation Plan First Alternative Schedule/Funding Improvement Plan First Alternative Option or Rehabilitation Plan Second Alternative Schedule/Funding Improvement Plan Second Alternative Option. • *60-Month Certain*: If the member has completed at least 15 years of Pension Credits before retirement and died within 5 years after retirement (if married, and taking joint and survivor pension, the spouse also died prior to receiving an amount equal to 60 times the amount of the pension the participant had been entitled), the pension benefit will continue to be paid to the participant's designated beneficiary until a total of 60 months payments had been made. The 60-month certain is only applicable to pre-2014 benefits if the participant's Home Local Schedule/Rehabilitation Plan Schedule as of December 31, 2013 was the First Alternative Schedule or Second Alternative Schedule. It is only applicable to post-2013 benefits attributable to Contribution Hours worked under a collective bargaining agreement satisfying the required contribution rate increases under the Rehabilitation Plan First Alternative Schedule/Funding Improvement Plan First Alternative Option or Rehabilitation Plan Second Alternative Schedule/Funding Improvement Plan Second Alternative Option.

Forms of Benefits	The normal forms of payment are: • Single life annuity for single participants, and • 50% joint and survivor annuity with a "pop-up" feature for married participants (if applicable) The available optional forms of payment are: • Single life annuity with 60-month certain (if applicable) • 50% joint and survivor annuity with a "pop-up" feature and 60-month certain (if applicable) • 75% joint and survivor annuity with a "pop-up" feature (if applicable) • 100% joint and survivor annuity with and without a "pop-up" feature (if applicable) The "pop-up" feature and 60-month certain are only applicable to pre-2014 benefits if the participant's Home Local Schedule/Rehabilitation Plan Schedule as of December 31, 2013 was the First Alternative Schedule or Second Alternative Schedule. They are only applicable to post-2013 benefits attributable to Contribution Hours worked under a collective bargaining agreement satisfying the required contribution rate increases under the Rehabilitation Plan First Alternative Schedule/Funding Improvement Plan First Alternative Option or Rehabilitation Plan Second Alternative Schedule/Funding Improvement Plan Second Alternative Option.
Participation	After completion of 870 hours during a calendar year
Past Service Credit	Service granted on the basis of days worked or amount earned in covered employment in calendar years prior to a participant's Contribution Date. For employers with a Contribution Date on or after January 1, 2000, the employer's initial contribution rate must be at least $0.50 per hour.

Future Service Credit	Service granted on the basis of hours of work in a calendar year after a Participant's Contribution Date in accordance with the following schedule: (see schedule below)
Pension Credit	Sum of the Past Service Credit and Future Service Credit (excluding service lost under the Plan's break in service rules)
Vesting Credit	870 or more hours of work within a Plan year earns one year of Vesting Service
Contribution Rate	Varies from $0.05 to $19.49 per hour as of the valuation date. The average rate is $5.39 per hour as of December 31, 2021. 2.5% of certain employer contributions are allocated to 401(h) Medical Accounts but are subject to pension benefit accruals.
Required Contribution Increases	Contribution rate increases required under the Funding Improvement Plan Options are described below. • *First Alternative Option:* 2.0% for 2021 and 2022. • *Second Alternative Option:* 1.0% for 2021 and 2022.

Months of Future Service Credit	Hours of Work in Covered Employment During Calendar Year
0	Less than 100
1	100 - 199
2	200 - 299
3	300 - 399
4	400 - 499
5	500 - 599
6	600 - 699
7	700 - 799
8	800 - 899
9	900 - 999
10	1,000 - 1,099
11	1,100 - 1,199
12	1,200 & Over

Cost of Living Adjustment (COLA)	• *Eligibility:* Pensioners and beneficiaries whose benefits are based on contribution rates that were increased by the Required Pension Fund Increase and who separated and retired from Covered Employment on or after January 1, 1991 and before December 1, 2001. No payment is made after January 1, 2008 unless the annual supplement had been in effect 60 months before that date (i.e., the benefit must have been payable on the participant's Allocation Date for 2002 – October 31, 2002). • *Amount:* An annual supplement equal to 2% of the participant's total monthly payments for the 12 months immediately preceding the Allocation Date, multiplied by the number of whole years preceding the Allocation Date that the participant or beneficiary has received benefits, up to a maximum of 15 years. If the participant had elected a level income option, the 2% factor is applied to the benefit prior to the adjustment for the form of payment. – Effective July 1, 1995, no NPF COLA Benefit is payable with respect to any benefits accrued after June 30, 1995. • A participant who was retired and received an annual supplemental increase under the NPF COLA Benefit for the 2002 Allocation Date will continue to receive the benefit, but it will not exceed the supplement that was paid for the 2002 Allocation Date (i.e., it remains fixed at that amount).
Changes in Plan Provisions	There were no changes in plan provisions reflected in this actuarial valuation

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